HAPPY SEEDER OWNERS

The Change Leaders for Sustainable Agriculture in Punjab

ICAR-Agricultural Technology Application Research Institute
Zone-I, PAU Campus, Ludhiana - 141 004, Punjab

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एफ एन ए, एफ एन ए एस सी, एफ एन ए ए एस
सचिव एवं महानिदेशक
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FOREWORD

Rice and wheat are the pillars of food security in India as well as at the global level. North-Western Indian plains due to larger land holdings, compared to the national average, contribute very high proportion of marketed surplus of these two principal cereals. Economic development in the country, especially during the current century, has shifted labour force from agriculture to non-agricultural activities. With the result rice and wheat farming, particularly in North-Western Indian plains, has become machines operated. Paddy combine harvesting cum thrashing machines are used as common practice in this part of India.

Machine harvesting of paddy crop leaves 1.5 to 3 feet stubbles standing on the ground which produce a lot of residue. management of these residual stubbles involves cost, time and hassle. The shortage of farm labour future makes this process difficult; hence, farmers had been resorting to burning of paddy straw on large scale. As a result air pollution to the unprecedented levels is experienced during October and November months especially in North-Western Indian in recent decades. Loss of organic carbon and precious nutrients on account of stubble burning further add to the ill effects of this menace.

ICAR-ATARI for Zone-1 started its campaign against paddy stubble burning about four years back in 2014-15. During this four year period this campaign got transferred into a momentum through a large number of initiatives and concerted efforts in this direction. However, the role of farmers who took strong stand of zero residue burning at their farms need to be duly documented and recognized. This compilation *"Happy Seeder Owners - The Change Leaders for Sustainable Agriculture in Punjab"* commemorates the strong will power of selected farmers of the state who decided to stand against the tide and to initiate the process of trend reversal towards no residue burning on their own farms and being the messages of this change to the others. Authors are grateful to Krishi Vigyan Kendras of Punjab for their critical input and for making this compilation take the current form.

(T. MOHAPATRA)

Dated the 23rd march, 2018
New Delhi

PREFACE

Burning of paddy residue in North-Western Indian plains in general and Punjab in particular has acquired very serious dimensions during the recent past. This is a grave socio-economic and environmentally problem that has a wide range of implications ranging from health hazards to transportation risks. All sections of the society are being adversely impacted due to this mal-practice in its affected areas.

Government of India and Indian Council of Agricultural Research (ICAR) have been taking this problem very seriously. At ICAR we are addressing this problem through our number of research and extension institutions. In this context the ICAR-ATARI Zone-1 has extended outstanding efforts to curb the undesirable practice of residue burning in its states. It is heartening to know that the painstaking efforts of this ATARI have started bearing fruits and the movement against paddy residue burning is really gaining higher and higher momentum with the time.

Progressive and forward looking farmers who decided to own Happy Seeder machines and provide their invaluable services to their fellow farmers are in fact doing the yeoman's job towards ensuring no residue burning on their own farms and at the farms of their fellow farmers. This compilation *"Happy Seeder Owner – The Change Leaders for Sustainable Agriculture in Punjab"* is an effort to recognize the service provided by these progressive minds to the humanity and environment. Authors put on record the imperative support of Krishi Viggyan Kendras in Punjab that helped in producing this publication. We are sure that this document will definitely inspire the fellow farmers to undertake similar efforts and proved to be useful for larger number of farmers including rural youth.

Editors

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Genesis of Happy Seeder Machine in India

North-Western India, especially the Punjab and Haryana states, follow Rice-Wheat cropping system rigorously. This cropping system got deep acceptance among farmers due to adoption of improved technical and cultural know how on one hand and favourable support price mechanism for Rice and Wheat crops on the pretext of national food security. As a result, the farmers received advantage of higher yields as well as remunerative prices. The supporting infrastructural facilities like development of highly fertiliser responsive rice and wheat varieties, expansion of irrigation, improved management, and improved technical assistance made this change possible. Consequently, area under these two crops expanded tremendously and enormous quantities of rice and wheat residue was also generated.

Traditionally, the harvesting of Rice and Wheat was done manually and almost all wheat and rice straw was removed from the fields for using it as cattle feed, livestock bedding, thatching and packing/ filling material and fuel. However, rice-wheat cropping in the north-western Indian plains got largely mechanised, eliminating the need for draught animals, and straw thatching has been largely replaced by alternatives provided by the industry. As a result, the demand for straw (especially rice straw, which is also an inferior

quality fodder) declined to almost negligible levels. At present more or less entire rice and wheat crops are harvested by combined harvester-cum-trashing machines, leaving almost forty percent residue of both the crops in the field itself. The left-out Wheat residue after the harvesting by combined harvester-cum-trashing machines is recollected being valuable as animal fodder, however, the rice straw being of almost no value is mostly burnt in order to prepare the fields for wheat sowing. Adoption of late maturing paddy varieties further squeezed farmers of the possible time for preparing fields for wheat sowing after incorporation of paddy straw in the field. It is estimated that in the small state of Indian Punjab about 15 million tonne of rice residue is burnt annually.

The burning of crops residue has been the principal source of severe and widespread air pollution, as well as loss of soil nutrients and organic matter. After the harvesting with combined harvester-cum-trashing machines, the rice residues comprised of standing stubbles is usually 30–60 cm high, plus a substantial amount of loose straw is present in the field. The loose residues interfere with tillage and seeding operations for the next wheat crop. Incorporation requires many tillage operations as about 50% of farmers in Punjab are using more than five tillage operations even after partial burning of rice residues, whereas about 25% till more than five times after complete burning.

In addition to the direct cost of many ploughings with conventional tillage, and even more with stubble incorporation, there is additional cost and possible delay in wheat sowing until the field preparation operations are completed. This delay is due to both the reasons viz. time taken to prepare the fields, and the fact that sowing needs to be delayed for a couple of weeks after incorporation to avoid problems associated with nitrogen tie up by the freshly incorporated straw. Delaying the sowing of wheat beyond the optimum date (5 November in Punjab) results in significant yield loss of the order of 1–1.5% per day.

Noticeable adoption of 'zero tillage' (drill seeding into uncultivated soil) for wheat in Indian north-western plains began in late 1990s and was attractive to farmers because of the large cost savings achieved through the reduced use of fuel and labour. Early sowing of wheat crop also became possible with zero till, with potential yield benefits, especially after late harvested rice. Early wheat sowing also improved the ability of wheat to compete against the obnoxious weed (Phalaris minor), which was beginning to limit wheat productivity due to the development of herbicide resistance even before the year 2004. Consequently, the area of zero tillage wheat in the north-western Indian plains expanded exponentially by the end of 20th century. However, a prerequisite for successful zero tillage after combine-harvested rice was partial burning or residue especially the the loose straw or complete burning or removal of straw to avoid problems of accumulation of the loose straw in the furrow openers, traction problems with the drive wheel of the seed and fertiliser metering systems in the loose straw, and non-uniform sowing depth due to frequent lifting of the drill to clear blockages.

Guided by the serious air pollution from stubble burning, a range of approaches was investigated to solve the problem associated with direct drilling of wheat seed into rice the residue. These include double and triple disc systems, the straw thrower and the stubble chopper. However, none of these approaches provided the desired success, due to problems of soil penetration and 'hair pinning' with the discs (failure to cut the straw, which bends as the discs pass over it, and then partially or fully springs back into shape, leaving the seed on the surface), uneven straw distribution with the straw thrower, and expensive process of straw chopping (in particular, high wear and tear of the blades).

Solution to all these problems came in the form of Happy Seeder Machines for direct drilling into heavy, tough, loose rice residues in rice–wheat cropping system of this region. The major objective was to develop a tractor-mounted machine that could sow wheat into combine-harvested rice stubbles, typically 7–9 t/ha, with a tractor power requirement of less than 50 horse power. The main consideration for developing this machine was to get better wheat yield by its timely sowing and to lower soil temperature using straw as mulch. The new straw management approach was suggested so that the unit lifts and throws the standing stubble and loose straw onto the sown area behind the zero-tillage seed drill.

The name 'Happy Seeder' was given to all versions of these concepts developed by the group of scientists from Punjab Agricultural University, Ludhiana and Dasmesh Mechanical Works in India and CIMMYT, BISA and CSIRO Land and Water, Australia, in international R&D organisations. The second generation (Combo) Happy Seeder combines the straw management and sowing units into a single, light, compact machine. The sowing tynes on each machine were the standard inverted T-openers used on zero-till drills in the north-western Indian plains. The Combo+ included a strip tillage mechanism in front of the sowing tynes. Subsequently, the Turbo Happy Seeder machine was the culmination of all research and development efforts in this direction and it provided befitting answer to all practical problems faced by the farmers in Rice-Wheat cropping system especially in the north-western Indian plains.

Amritsar

Contributors: Raminder K Hundal and Bhupinder S Dhillon

Total area	:	263570 ha
Net sown area	:	216555 ha
Net Irrigated area	:	216555 ha
Cropping intensity	:	194%
No. of blocks	:	9
Major agri-activities	:	Livestock, Poultry and Fisheries
Major seasonal crops	:	Rice, Maize, Arhar, Moong and Wheat
Major fruit crops	:	Kinnow, Orange, Lemon, Mangoes, Litchi, Guava, Pear, Plum, Peach and Ber

Particulars	Blocks									Total 9
	Attari	Ajnala	Chogawan	Harsha Chinna	Jandiala	Majitha	Rayya	Tarsikka	Verka	
Villages(No.)	59	170	119	58	44	92	82	81	71	776
Area (Ha)	24425	44740	40201	23429	17820	26282	29830	24332	32511	263570
Net sown area (Ha)	21100	37750	34500	20750	15525	22860	23100	21450	19520	216555
Irrigated area (Ha)	21100	37750	34500	20750	15525	22860	23100	21450	19520	216555
Area under Paddy (Ha)	3454	13690	11323	6714	5301	4730	18123	17054	3720	84109
Area under Basmati (Ha)	1557	18292	17051	12468	6120	12694	100	89	13015	81386
Area under Wheat (Ha)	18037	34691	30698	18022	12075	19590	19850	17211	17585	187759
Rice Production (tonne)	207240	985680	783098	428621	318060	223729	1189775	1358181	289788	5784173
Basmati production (tonne)	67246	816189	731487	524404	277542	1611376	3660	3415	5723	40410446
Wheat Production (tonne)	888322	1665168	1458155	874067	567525	914853	992500	834733	861665	9056988

S. Ranjit Singh

Father's name	:	S. Harbans Singh
Age of farmer	:	55 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Veerram
Contact detail	:	9465485624
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in October 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	45
2016-17	90
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Gurdial Singh

Father's name	:	S. Joginder Singh
Age of farmer	:	55 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Rapur
Contact detail	:	9888016988
Land Holding (in Acres)	:	5 acre
Paddy area (in Acres)	:	5 acre

EXPERIENCES

Purchased the Happy Seeder Machine in October 2015. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less pollution because of no residue burning
- Grain quality same as conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	20
2016-17	30
2017-18	35
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Change in weather in November.
- Less yield due to late sowing

S. Gurdial Singh

Father's name	:	S. Kashmir Singh
Age of farmer	:	75 yrs
Acad. qual. of farmer	:	Graduate
Mailing address	:	VPO Dulo Nangal
Contact detail	:	9815569155
Land Holding (in Acres)	:	18 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
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- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	45
2016-17	90
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Unwillingness of farmers to shift to new practice

S. Balwinder Singh

Father's name	:	S. Pal Singh
Age of farmer	:	50 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Thoba
Contact detail	:	9812177926
Land Holding (in Acres)	:	25 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	25
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problems faced

S. Ranjit Singh

Father's name	:	S. Amrik Singh
Age of farmer	:	48 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Awan
Contact detail	:	9815380041
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	48 acre

EXPERIENCES

Purchased the Happy Seeder Machine in October 2014. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	25
2016-17	35
2017-18	48
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Little incidence of rodents noticed

Sdn. Harinder Kaur

Father's name	:	S. Kanwaljit Singh
Age of farmer	:	43 yrs
Acad. qual. of farmer	:	Post Graduate
Mailing address	:	VPO Birbalpura
Contact detail	:	9779212124
Land Holding (in Acres)	:	38 acre
Paddy area (in Acres)	:	35 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017.This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Wheat lodging reduced
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less population of *Phalaris minor* and broad leaf weeds

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	35
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Delayed sowing resulted decrease in yield

S. Davinder Singh

Father's name	:	S. Pal Singh
Age of farmer	:	37 yrs
Acad. qual. of farmer	:	Graduate
Mailing address	:	VPO Araria
Contact detail	:	9872386799
Land Holding (in Acres)	:	36 acre
Paddy area (in Acres)	:	36 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Good crop stand shows improvement in soil health
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	36
2016-17	36
2017-18	36
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Unwillingness of farmers to shift to new practice

S. Tarsem Singh

Father's name	:	S. Kartar Singh
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Ghonewal
Contact detail	:	9781794620
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	15
2015-16	20
2016-17	20
2017-18	20
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Rachpal Singh

Father's name	:	S. Jaswant Singh
Age of farmer	:	55 yrs
Acad. qual. of farmer	:	Graduate
Mailing address	:	VPO Ramdas
Contact detail	:	9872293555
Land Holding (in Acres)	:	46 acre
Paddy area (in Acres)	:	46 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. Used for sowing own crops. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	46
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Due to attack of army worm, not satisfied

S. Charan Singh

Father's name	:	S. Karam Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Manhadiyankalan
Contact detail	:	9465279459
Land Holding (in Acres)	:	30 acre
Paddy area (in Acres)	:	28 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	28
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Delayed sowing in the month of December resulted decrease in yield

S. Bikramjit Singh

Father's name	:	S. Joginder Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Kalo Mahal
Contact detail	:	8477215138
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in October 2017. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	10
2017-18	15
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Change in weather in November lead to delay in wheat sowing

S. Kirpal Singh

Father's name	:	S. Ranjit Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Post graduate
Mailing address	:	VPO Vallah
Contact detail	:	8054055155
Land Holding (in Acres)	:	35 acre
Paddy area (in Acres)	:	30 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	10
2015-16	20
2016-17	30
2017-18	30
Including the area of wheat covered under custom hiring-out basis	

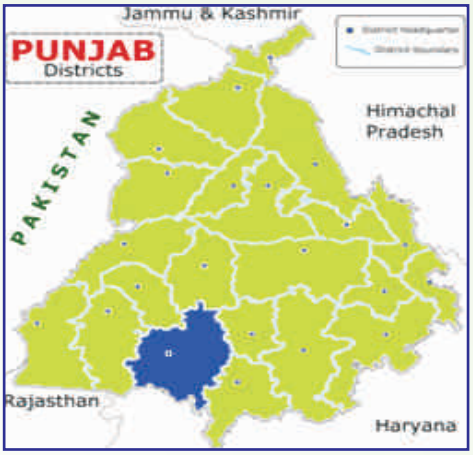
CONSTRAINTS

- No problem faced

Bathinda

Contributors: Parkash S Sidhu, Gumeet S Dhillon and Jitender S Brar

Total area	:	337000 ha
Net sown area	:	296000 ha
Net Irrigated area	:	295000 ha
Cropping intensity	:	187%
No. of blocks	:	7
Major agri-activities	:	Livestock, Fisheries and Poultry
Major seasonal crops	:	Cotton, Rice, Wheat, Rape Seed and Wheat
Major fruit crops	:	Orange, Guava, Grapes, Plum and Peach



Particulars	Blocks							Total 7
	Bathinda	Nathana	Sangat	Talwandi Sabo	Maur	Rampura	Phul	
Villages (No.)	61	33	38	48	36	30	46	292
Area (Ha)	73582	39835	46178	56301	33313	33214	54302	336725
Net sown area (Ha)	59090	32210	39406	48866	28837	30853	49151	288413
Irrigated area (Ha)	58845	32148	39284	48788	28825	30793	49039	287722
Area under Paddy (Ha)	37341	27014	9802	8841	11674	20668	44492	159922
Area under wheat (Ha)	50,000	27500	35500	44000	26000	25000	40000	248000
Paddy Production (000 tonne)	146	111	45	41	47	107	122	689
Wheat Production (000 tonne)	270	153	190	227	144	136	215	1335

S. Gurpreet Singh

Father's name	:	S. Joginder Singh
Age of farmer	:	32 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Mehraj
Contact detail	:	9463145292
Land Holding (in Acres)	:	24 acre
Paddy area (in Acres)	:	23 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Grain quality same as conventional method
- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 5-6 litres diesel compared to 18-20 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	250
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Daljit Singh

Father's name	:	S. Mohinder Singh
Age of farmer	:	36 yrs
Acad. qual. of farmer	:	10 th
Mailing address	:	V.P.O. Mehraj
Contact detail	:	9417579414
Land Holding (in Acres)	:	4 acre
Paddy area (in Acres)	:	3 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 for own use. This eco friendly technology has good crop stand which shows improvement in soil health Also, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 2 irrigations compared to 6 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 5 litres diesel compared to 15 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	150
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Little incidence of rodents noticed

S. Kamaljit Singh

Father's name	:	S. Sukhmander Singh
Age of farmer	:	29 yrs
Acad. qual. of farmer	:	B. A.
Mailing address	:	V.P.O. Mehraj
Contact detail	:	9041894030
Land Holding (in Acres)	:	112 acre
Paddy area (in Acres)	:	110 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own use and custom hiring. This eco friendly technology helps in improvement of soil heath over a period of time and there is less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat. This has been proven beneficial in various ways as follows:

- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less pollution because of no residue burning
- Less weeds infectation
- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	110
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Harjeet Singh

Father's name	:	S. Gurcharan Singh
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Gehri Bara Singh
Contact detail	:	9464073681
Land Holding (in Acres)	:	1 acre
Paddy area (in Acres)	:	0 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No weedicide used due to less weed infestation
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	28
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Baljeet Singh

Father's name	:	S. Gurcharan Singh
Age of farmer	:	67 yrs
Acad. qual. of farmer	:	-
Mailing address	:	V.P.O. Teona
Contact detail	:	9464551107
Land Holding (in Acres)	:	0 acre
Paddy area (in Acres)	:	0 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No weedicide used due to less weed infestation
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	30
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Jaskaran Singh

Father's name	:	S. Bahader Singh
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	middle
Mailing address	:	V.P.O. Teona
Contact detail	:	-
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	2 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No weedicide used due to less weed infestation
- Grain quality same as conventional method
- Less water requirement (maximum 1-2 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to conventional

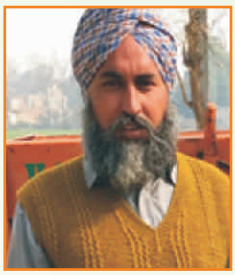
Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	26
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Harmander Singh

Father's name	:	S. Gurnam Singh
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Kot Shamir
Contact detail	:	9463020254
Land Holding (in Acres)	:	0 acre
Paddy area (in Acres)	:	2 acre



EXPERIENCES

Purchased the Happy Seeder Machine in 2016 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No weedicide used due to less weed infestation
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	38
2017-18	48
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Little incidence of rodents noticed

S. Charanjit Singh

Father's name	:	S. Bhoora Singh
Age of farmer	:	42 years
Acad. qual. of farmer	:	7th
Mailing address	:	V.P.O. Gumnti kalan
Contact detail	:	9463020254
Land Holding (in Acres)	:	4 acre
Paddy area (in Acres)	:	8 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No weedicide used due to less weed infestation
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	62
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Manjinder Singh

Father's name	:	S. Major Singh
Age of farmer	:	39 yrs
Acad. qual. of farmer	:	B A
Mailing address	:	V.P.O. Killi Nihal Singh
Contact detail	:	9463361921
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1450/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Grain quality same as conventional method
- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	64
Including the area of wheat covered under custom hiring-out basis	

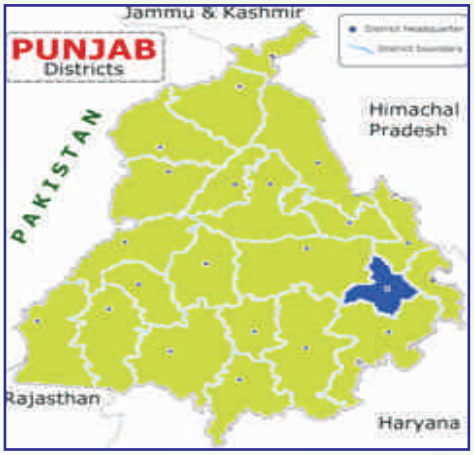
CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

Fatehgarh Sahib

Contributors: Navjot K Dhillon and Harinder Singh

Total area	:	118219 ha
Net sown area	:	96101 ha
Net Irrigated area	:	96101 ha
Cropping intensity	:	186.8 %
No. of blocks	:	5
Major agri-activities	:	Livestock, Poultry and Fisheries
Major seasonal crops	:	Potato, Cauliflower, Cabbage, Root vegetables Cucurbits, Garlic and Onion
Major fruit crops	:	Wheat, Rice, Maize, Sugarcane and Mustard Guava, Kinnow, Mangoes, Peach and Pear



Particulars	Blocks					Total
	Amloh	Khera	Bassi	Sirhind	Khamano	5
Villages (No.)	103	84	100	102	76	465
Area (Ha)	26893	21040	19907	30786	19593	118219
Net sown area (Ha)	21532	17635	16468	23709	16757	96101
Irrigated area (Ha)	21532	17635	16468	23709	16757	96101
Area under Paddy (Ha)	19702	15544	14418	22230	14433	86327
Area under wheat (Ha)	15837	16190	14963	22139	14647	83776
Paddy Production kg/ha	7184	7264	6044	6453	7300	6930
Wheat Production (kg/ha)	5133	5267	5009	4767	5620	5196

S. Kulwant Singh

Father's name	:	S. Sujjan Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O.Baddoucchi Kalan
Contact detail	:	9814863234
Land Holding (in Acres)	:	6 acre
Paddy area (in Acres)	:	5 acre

EXPERIENCES

Purchased one the Happy Seeder Machine in 2017 for own use. This eco-friendly technology has good crop stand which shows improvement in soil health also, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Eliminates the need for seedbed preparation
- Saves tillage cost and energy
- Timely sown of wheat
- Grain quality same as conventional method
- Less water requirement (maximum 3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder

Year	Wheat area in Acres
2014-15	-
2015-16	1
2016-17	13
2017-18	30

Including the area of wheat covered under custom hiring-out basis

CONSTRAINTS

- Severe heat stress
- Burning of paddy straw resulting air pollution and loss of soil nutrients and flora & fauna.

S. Palwinder Singh

Father's name	:	S. Palwinder Singh
Age of farmer	:	39 yrs
Acad. qual. of farmer	:	M.A.
Mailing address	:	V.P.O. Baronga Zer
Contact detail	:	9814135091
Land Holding (in Acres)	:	5 acre
Paddy area (in Acres)	:	7 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2011 for own use. This eco-friendly technology has good crop stand which shows improvement in soil health also, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6 litres diesel compared to 25 litres in conventional method
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	17
2015-16	17
2016-17	17
2017-18	17
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Severe heat stress
- Change in rainfall pattern / terminal heat
- Burning of paddy straw resulting air pollution

S. Paramjeet Singh

Father's name	:	S. Prem Singh
Age of farmer	:	52 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Mahadian
Contact detail	:	9876823187
Land Holding (in Acres)	:	36 acre
Paddy area (in Acres)	:	34 acre

EXPERIENCES

Purchased one the Happy Seeder Machine in 2011 for own use. This eco-friendly technology has good crop stand which shows improvement in soil health also, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Eliminates the need for seedbed preparation
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6 litres diesel compared to 25 litres in conventional method
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional method
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	30
2016-17	-
2017-18	10
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Change in rainfall pattern / terminal heat
- Burning of paddy straw resulting air pollution and loss of soil

S. Saudagar Singh

Father's name	:	S. Mohinder Singh
Age of farmer	:	41 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Baddoucchi Kalan
Contact detail	:	9876928131
Land Holding (in Acres)	:	30 acres
Paddy area (in Acres)	:	30 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 for own use. This eco-friendly technology has good crop stand which shows improvement in soil health. This has been proven beneficial in various ways as follows:

- Eliminates the need for seedbed preparation
- Saves tillage cost and energy
- Timely sown of wheat
- Grain quality same as conventional method
- Wheat yield will be higher or equal to conventional method
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder

Year	Wheat area in Acres
2014-15	6
2015-16	6
2016-17	4
2017-18	30

Including the area of wheat covered under custom hiring-out basis

CONSTRAINTS

- Severe heat stress
- Change in rainfall pattern / terminal heat
- Burning of paddy straw resulting air pollution

S. Surjit Singh

Father's name	:	S. Teja Singh
Age of farmer	:	59 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	V.P.O. Sadhugarh
Contact detail	:	9888002486
Land Holding (in Acres)	:	42 acres
Paddy area (in Acres)	:	40 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2011 for own use. This eco-friendly technology has, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Eliminates the need for seedbed preparation
- Saves tillage cost and energy
- Timely sown of wheat
- Grain quality same as conventional method
- Less water requirement (maximum 3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6 litres diesel compared to 25 litres in conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	40
2015-16	39
2016-17	40
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

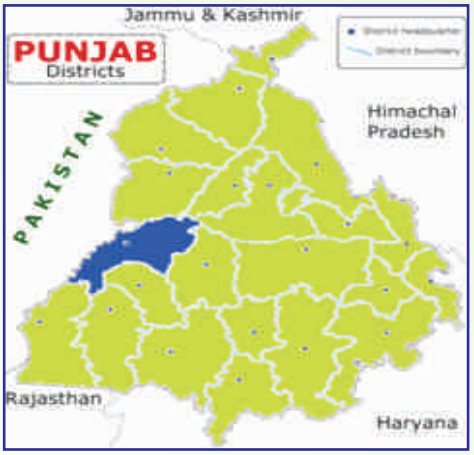
CONSTRAINTS

- Severe heat stress
- Change in rainfall pattern / terminal heat and loss of soil nutrients and flora & fauna.

Ferozepur

Contributors: Gurjant S Aulakh and Vicky Singh

Total area	:	238034 ha
Net sown area	:	202450 ha
Net Irrigated area	:	202450 ha
Cropping intensity	:	184%
No. of blocks	:	6
Major agri-activities	:	Commercial dairy farms, Poultry, Fisheries
Major seasonal crops	:	Rice, Cotton, Moong, Wheat, Barely, Rapeseed & Mustard and Gram
Major fruit crops	:	Kinnow, Orange, Malta, Guava and Ber



Particulars	Blocks						Total
	Ferozepur	Mamdot	Zira	Makhu	Guruharshai	Ghall Khurd	6
Villages (No.)	128	120	99	123	80	102	652
Area (Ha)	43625	28759	41148	32688	36347	55467	238034
Net sown area (Ha)	38405	25170	35960	27010	31920	43985	202450
Irrigated area (Ha)	38405	25170	35960	27010	31920	43985	202450
Area under Paddy (Ha)	33816	22133	33402	25276	30150	40417	1857194
Area under wheat (Ha)	33401	24115	33305	26346	30721	40150	188038
Paddy Production (tonne)	150000	103000	148000	132000	130000	186000	849000
Wheat Production (tonne)	180000	124000	173000	135000	157000	215000	984000

S. Daljit Singh

Father's name	:	Late S. Sucha Singh
Age of farmer	:	28 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	VPO Bulle
Contact detail	:	8427482465
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	45 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gursaab Singh

Father's name	:	S. Jajj Singh
Age of farmer	:	34 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	Bulle
Contact detail	:	9463383890
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2012. Used for own purpose and also for on custom hiring basis. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat
- Yield same as in conventional sowing
- Saving in cost of cultivation

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	14
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage
- No other problem faced

S. Boota Singh

Father's name	:	S. Pritpal Singh
Age of farmer	:	45 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	DheeraPattra
Contact detail	:	9417148491
Land Holding (in Acres)	:	30 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1700/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand
- Less pollution because of no residue burning
- Happy seeder sown wheat performed well in-spite of untimely rainfall
- Reduction in production cost in happy seeder sown wheat (uses 6-7 litres diesel compared to 20-25 litres in conventional)
- Decreased fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	20
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gurcharan Singh

Father's name	:	S. Pala Singh
Age of farmer	:	38 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Dheera Pattra
Contact detail	:	9465819288
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	12 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1700/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand
- Less pollution because of no residue burning
- Happy seeder sown wheat performed well in-spite of untimely rainfall
- Reduction in production cost in happy seeder sown wheat (uses 6-7 litres diesel compared to 20-25 litres in conventional)
- Decreased fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	3
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Lakhbir Singh

Father's name	:	S. Hardev Singh
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	Baggi Patni
Contact detail	:	9814309666
Land Holding (in Acres)	:	18 acre
Paddy area (in Acres)	:	17 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1700/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand
- Less pollution because of no residue burning
- Happy seeder sown wheat performed well in-spite of untimely rainfall
- Reduction in production cost in happy seeder sown wheat (uses 6-7 litres diesel compared to 20-25 litres in conventional)
- Decreased fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	15
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Gurjinder Singh

Father's name	:	S. Balwinder Singh
Age of farmer	:	46 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Baggipatni
Contact detail	:	9781900567
Land Holding (in Acres)	:	55 acre
Paddy area (in Acres)	:	50 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	44
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

Gurdaspur

Contributors: RS Chhina and Parminder K Ghuman

Total area	:	258519 ha
Net sown area	:	212173 ha
Net Irrigated area	:	206658 ha
Cropping intensity	:	174%
No. of blocks	:	10
Major agri-activities	:	Livestock, Poultry and Fisheries
Emerging agri-activities	:	Amla, Potato and Onion
Major seasonal crops	:	Rice, Maize and Wheat
Major fruit crops	:	Mangoes, Litchi, Kinnow, Guava, Orange, Pear, Peach, Lemon and Plum

Particulars	Blocks										Total 10
	Gurdaspur	Dhariwal	Kahnuwan	Dinanagar	Sri Hargobindpur	Batala	Qadian	Fatehgarh Churian	Kalanaur	Dera Baba Nanak	
Villages (No.)	175	114	155	169	100	117	68	85	111	127	1221
Area (Ha)	29643	24062	25329	30554	26743	25080	23856	23086	20224	29938	258519
Net sown area (Ha)	22854	18852	19982	27544	23033	19288	16992	20128	18032	25168	212173
Irrigated area (Ha)	21553	18690	19552	25671	23033	19288	16042	20128	17527	25168	206658
Area /Paddy (Ha)	19200	15636	15447	22379	17862	16632	12342	17926	15575	22967	175966
Area Wheat (Ha)	25039	17773	19442	15359	18667	17414	14308	16492	15815	23235	183554
Paddy Prod.(tonne)	66	58	46	72	72	57	43	56	48	69	5870
Wheat Prod.(tonne)	113	81	78	68	99	87	66	86	63	107	8480

S. Jaswinder Singh

Father's name	:	S. Niranjan Singh
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	B.A.
Mailing address	:	Shahzada Kalan
Contact detail	:	9814483645
Land Holding (in Acres)	:	32 acre
Paddy area (in Acres)	:	30 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2008. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Grain quality same as conventional method
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	125
2015-16	129
2016-17	165
2017-18	104
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Risk of yield loss
- Unwillingness of farmers to shift to new practice

S. Gurnam Singh

Father's name	:	S. Bota Singh
Age of farmer	:	30 years
Acad. qual. of farmer	:	+2
Mailing address	:	Shahzada Kalan
Contact detail	:	9814476380
Land Holding (in Acres)	:	10 acre
Paddy area (in Acres)	:	10 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Grain quality same as conventional method
- Good crop stand shows improvement in soil health
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	20
2015-16	27
2016-17	43
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Risk such as termites, pink bug
- Deserted look of the field at initial crop stage

Young Progressive Farmers Producer Organisation (sahari)

Mailing address:VPO : Sahari, Dhariwal
Contact detail : 9464496335

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. Have a total of 3 Happy Seeders. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Reduce in cost of cultivation
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	257
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Risk of yield loss
- Unwillingness of farmers to shift to new practice
- Risk such as termites, pink bug
- Deserted look of the field at initial crop stage

S. Shamsher Singh

Father's name	:	S. Kulwant Singh
Age of farmer	:	26 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Shahzada Kalan, Dera Baba Nanak
Contact detail	:	9914636598
Land Holding (in Acres)	:	10 acre
Paddy area (in Acres)	:	9 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Reduces weed
- Good crop stand shows improvement in soil health
- Less pollution because of no residue
- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	150
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Unwillingness of farmers to shift to new practice
- Risk such as termites, pink bug or rodents etc.

S. Udham Singh

Father's name	:	S. Gurdial Singh
Age of farmer	:	39 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Dharamkot Randhawa, Dera Baba Nanak
Contact detail	:	9914444897
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2016. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less cost of cultivation
- Wheat yield will be higher or equal to conventional
- Less weeds
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	102
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Unwillingness of farmers to shift to new practice

S. Paramjit Singh

Father's name	:	S. Gurbachan Singh
Age of farmer	:	45 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Gwara, Fattupur, Dera Baba Nanak
Contact detail	:	8195033381
Land Holding (in Acres)	:	16 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	23
2016-17	196
2017-18	226
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Gulzar Singh

Father's name	:	S. Shingara Singh
Age of farmer	:	41 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	Ghuman Kalan, Dhariwal,
Contact detail	:	9465970553
Land Holding (in Acres)	:	33 acre
Paddy area (in Acres)	:	30 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2016. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Less cost of cultivation Less fertilizer use compared to conventional method

CONSTRAINTS

- Risk of yield loss
- Unwillingness of farmers to shift to new practice

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	68
2017-18	123
Including the area of wheat covered under custom hiring-out basis	

S. Sammiter Pal Singh

Father's name	:	S. Karam Singh
Age of farmer	:	33 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Ballewal, Batala
Contact detail	:	9592888751
Land Holding (in Acres)	:	16 acre
Paddy area (in Acres)	:	14 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfallless cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	65
2016-17	225
2017-18	257
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Risk of yield loss
- Deserted look of the field at initial crop stage

S. Mandeep Singh

Father's name	:	S. Randhir Singh
Age of farmer	:	32 yrs
Acad. qual. of farmer	:	+2
Mailing address	:	Johal Nangal, Dhariwal,
Contact detail	:	9815651250
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	12 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand untimely rainfall
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	80
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

Hoshiarpur

Contributors: Ajaib Singh and Maninder S Bons

Total area	:	339285 ha
Net sown area	:	239272 ha
Net Irrigated area	:	175000 ha (90% tube wells)
Cropping intensity	:	70 %
No. of blocks	:	10
Major agri-activities	:	Agricultural farming, dairying, poultry farming, horticulture, mushroom cultivation and bee keeping
Major seasonal crops	:	Wheat Maize, Paddy, Sugarcane, Potato and Sunflower
Major fruit crops	:	Kinnow & other citrus fruits, Mango, Guava, Peach and Grapes

Particulars	Blocks										Total 10
	Mahilpur	Garhshankar	Hoshiarpur-I	Hoshiarpur-II	Bhunga	Tanda	Mukerian	Dasuya	Hajipur	Talwara	
Villages (No.)	157	145	200	127	200	123	141	183	95	78	1449
Area (Ha)	42315	38308	35417	43026	55879	27644	23226	33738	16994	22738	339285
Net sown area (Ha)	25123	28312	30813	27133	29942	25005	22609	25255	15188	9893	239272
Area under Paddy ("000" Ha)	5676	10902	3598	2553	2900	12729	14090	12694	7777	1243	74162
Area under wheat ("000" Ha)	15344	21297	17334	13442	15714	18033	15966	15520	9883	4662	147195

S. Daler Singh

Father's name	:	S. Sudagar Singh
Age of farmer	:	33 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Kotla, Mahilpur, Garhshankar
Contact detail	:	9463162716
Land Holding (in Acres)	:	25 acres (50 acres on lease)
Paddy area (in Acres)	:	75 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Reduction of cost of cultivation of field for wheat sowing
- Less fertilizer use compared to conventional method
- Less use of fertilizers
- Less pollution because of no residue burning
- Weed control
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	75
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Ravinder Singh

Father's name : S. Gulab Singh
Age of farmer : 33 yrs
Acad. qual. of farmer : 10+2
Mailing address : Kotla, Block: Mahilpur, Garhshankar
Contact detail : 7355312061
Land Holding (in Acres) : 7 acres (93 acres on lease)
Paddy area (in Acres) : 100 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring and own use. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Saved one pre sown irrigation (*rauni*) for sowing of wheat
- Grain quality same as conventional method
- Reduction of weed population as there is surface mulch of paddy residue less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Kulbir Singh

Father's name	:	S. Satnam Singh
Age of farmer	:	38 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Thinda, Mahilpur, Garhshankhar
Contact detail	:	9914457657
Land Holding (in Acres)	:	9 acres (30 acres on lease)
Paddy area (in Acres)	:	25 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	25
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Ranbir Singh

Father's name	:	S. Harjeet Singh
Age of farmer	:	55 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Kharal khurd, Tanda,
Contact detail	:	9814244311
Land Holding (in Acres)	:	9 acres (30 acres on lease)
Paddy area (in Acres)	:	25 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Saved one pre sown irrigation (*rauni*) for sowing of wheat
- Grain quality same as conventional method
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	25
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Jasbir Singh

Father's name	:	S. Hari Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	Ferozeraulian, Tanda
Contact detail	:	9872837160
Land Holding (in Acres)	:	11acres
Paddy area (in Acres)	:	11 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Reduction of cost of cultivation of field for wheat sowing
- Less fertilizer use compared to conventional method
- Reduction of fertilize use
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	11
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gurnek Singh

Father's name	:	S. Sarwan Singh
Age of farmer	:	54 years
Acad. qual. of farmer	:	Matric
Mailing address	:	Moela Wahidpur , Garhshankar
Contact detail	:	9815271544
Land Holding (in Acres)	:	15 acres (25 acres on lease)
Paddy area (in Acres)	:	27 acres

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	45
2016-17	90
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

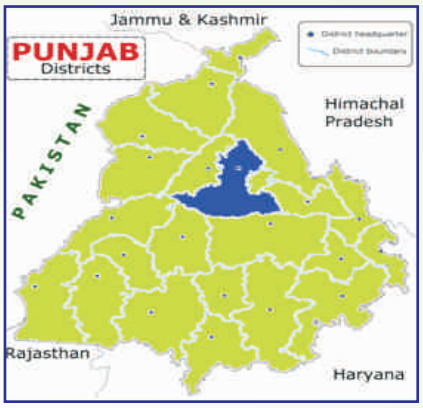
CONSTRAINTS

- Deserted look of the field at initial crop stage

Jalandhar

Contributors: Rupinder Chandel, Kuldeep Singh and Arpandeep Kaur

Total area	:	266224 ha
Net sown area	:	210123 ha
Net Irrigated area	:	210123 ha
Cropping intensity	:	178%
No. of blocks	:	10
Major agri-activities	:	Dairy Farming, Poultry, Bee Keeping and Fisheries
Major seasonal crops	:	Rice, Maize, Arhar, Moong, Cotton, Wheat, Barley, Rapeseed & Mustard, Sunflower and Sugarcane
Major fruit crops	:	Guava, Grapes, Mangoes, Kinnow, Ber, Lemon, Pear, Peach, Plum and Litchi



Particulars	Blocks										Total 10
	Jalandhar East	Adampur	Jalandhar west	Bhogpur	Nakodar	Shahkot	Lohian	Rurka Kalan	Phillaur	Nurmahal	
Villages (No.)	115	77	158	83	142	94	94	57	98	87	1005
Area (Ha)	24570	23000	35577	18690	44259	23820	21022	19449	29546	26291	266224
Net sown area (Ha)	16552	16677	24032	15347	36622	19740	17772	16412	24411	22558	210123
Irrigated area (Ha)	16552	16677	24032	15347	36622	19740	17772	16412	24411	22558	210123
Area under Paddy (Ha)	11934	10498	19253	10399	30022	17957	16561	13913	20775	19175	170487
Area under wheat (Ha)	12306	12965	15470	11607	27690	15880	13152	14421	21831	21103	166425
Paddy Production (Metric tonne)	43619	44868	68887	40213	124171	82028	82027	59339	91223	69145	705520
Wheat Production (Metric tonne)	58404	55425	73127	57536	139253	75271	66562	70072	110072	88358	794080

S. Parduman Singh

Father's name	:	S. Lachman Singh
Age of farmer	:	69 yrs
Acad. qual. of farmer	:	Graduate
Mailing address	:	Village Nagar, Teh. Phillaur
Contact detail	:	9815138671
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	50 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2008 and is being used for custom hiring @₹ 1000-1200/acre. Owns two Happy Seeders. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- The soil organic carbon has been increased which is the main indicator of improved soil health
- Due to non-burning of paddy straw, the air and soil environment has improved over the years
- The wheat grain quality is as good as other methods of sowingless fertilizer use compared to conventional method
- One or two irrigations are saved by sowing with Happy Seeder machine
- Wheat lodging is not encountered

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	50
2015-16	50
2016-17	50
2017-18	50+30 (CH*)
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Crop is sometimes delayed due to wet fields or delayed paddy crop as moisture is an important parameter for sowing wheat with Happy Seeder

S. Manpreet Singh

Father's name	:	S. Ajit Singh
Age of farmer	:	30 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Sandhawal, Shahkot
Contact detail	:	9876823855
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500-2000/acre. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- The wheat crop is as good as other methods of sowing
- Due to non-burning of paddystraw, the air and soil environment has improved
- Happy seeder sown wheat can withstand untimely rainfall
- The soil organic carbon has been increased which is the main indicator of improved soil health
- Improved water holding capacity of the soil due to increased organic carbons helps in infiltration of water thus reducing water logging
- Plant escapes the terminal heat stress due to timely sowing of crop

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	55
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Risk of rodents owing to presence of paddy straw in the fields

S. Sukhjinder Singh

Father's name	:	S. Balwant Singh
Age of farmer	:	58 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Jalandhar
Contact detail	:	9814730048
Land Holding (in Acres)	:	200 acre
Paddy area (in Acres)	:	200 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2008 and is being used for custom hiring @₹ 1500-2000/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Wheat lodging is not encountered
- One or two irrigations are saved by sowing with Happy Seeder machine grain quality same as conventional method
- Happy seeder sown wheat can withstand untimely rainfall
- The wheat grain quality is as good as other methods of sowingless fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	2
2015-16	4
2016-17	5
2017-18	80
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Unwillingness of farmers to shift to new practice

S. Sukhwinder Singh

Father's name	:	S. Malkit Singh
Age of farmer	:	52 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Village Musandpurpatti
Contact detail	:	9815404130
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	50 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- One or two irrigations are saved by sowing with Happy Seeder machine
- Low cost of cultivation
- The soil organic carbon has been increased which is the main indicator of improved soil health
- The wheat crop is as good as other methods of sowing
- Less fertilizer use compared to conventional method
- Weed control

Area covered by Happy Seeder

Year	Wheat area in Acres
2014-15	-
2015-16	-
2016-17	-
2017-18	40

Including the area of wheat covered under custom hiring-out basis

CONSTRAINTS

- Crop is sometimes delayed due to wet fields or delayed paddy crop as moisture is an important parameter for sowing wheat with Happy Seeder

Ludhiana

Contributors: Karun Sharma, SC Sharma and Devinder Tiwari

Total area : 368312 ha
Net sown area : 287532 ha
Net Irrigated area : 287532 ha
Cropping intensity : 194%
No. of blocks : 11
Major agri-activities : Livestock, Poultry and Fishries
Major seasonal crops : Rice, Maize, Arhar, Moong, Cotton, Wheat, Barley, Rapeseed, Mustard, Sunflower and Sugarcane
Major fruit crops : Guava, Grapes, Mangoes, Kinnow, Plum, Lemon, Pear, Peach and Litchi

Particulars	Blocks											Total 11
	Ludhiana	Mangat	Pakhowal	Dehlon	Jagraon	Sidhwan Bet	Sudhar	Khanna	Doraha	Samrala	Machchiwara	
Villages(No.)	82	195	64	77	54	92	53	91	59	64	137	968
Area (Ha)	34146	53556	29384	28095	40995	42711	36529	27673	24012	19029	32182	368312
Net sown area (Ha)	15957	37418	24347	22885	37095	32878	31024	21922	20836	15485	27685	287532
Irrigated area (Ha)	15957	37418	24347	22885	37095	32878	31024	21922	20836	15485	27685	287532
Area unde Paddy (Ha)	14031	31197	22480	20595	34412	30156	28880	19320	19067	13758	23570	257466
Area unde wheat (Ha)	14019	32299	21810	21072	29171	30424	28071	18296	19238	11994	23529	249923
Paddy Production (tonne)	66703	130965	110197	97991	172094	141130	142869	83153	85611	69003	101664	1208545
Wheat Production (tonne)	70403	165888	110817	101462	150902	145037	143695	95926	97594	61937	124021	1275607

S. Parmjeet Singh Grewal

Father's name	:	S. Surinder Singh
Age of farmer	:	36 yrs
Acad. qual. of farmer	:	Graduation
Mailing address	:	Powat, Machhiwara
Contact detail	:	09592954956
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	12 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015 and is being used for custom hiring and own purpose. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	4
2016-17	8
2017-18	32
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Harjeet Singh

Father's name	:	S. Harbans Singh
Age of farmer	:	52 yrs
Acad. qual. of farmer	:	Diploma
Mailing address	:	Jatana, Samrala,
Contact detail	:	09780029026
Land Holding (in Acres)	:	4 acre
Paddy area (in Acres)	:	4 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1200/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Low cost of cultivation
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	45
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gurpreet Singh

Father's name	:	S. Sukhdev Singh
Age of farmer	:	41 yrs
Acad. qual. of farmer	:	12th
Mailing address	:	Goslan, Samrala,
Contact detail	:	07710740542
Land Holding (in Acres)	:	12.5 acre
Paddy area (in Acres)	:	10.5 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2016. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Weed control
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	12
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage
- No other problem faced

S. Gurmeet Singh

Father's name	:	S. Tara Singh
Age of farmer	:	49 yrs
Acad. qual. of farmer	:	Metric
Mailing address	:	Goslan, Samrala
Contact detail	:	09915923196
Land Holding (in Acres)	:	8 acre
Paddy area (in Acres)	:	7 acre

EXPERIENCES

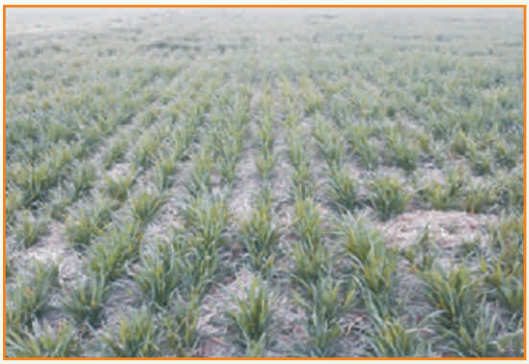
Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring and own purpose. This eco friendly technology helps in improvement of soil heath. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	45
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced



S. Parminder Singh

Father's name	:	S. Karnail Singh
Age of farmer	:	50 yrs
Acad. qual. of farmer	:	Metric
Mailing address	:	Goslan, Samrala
Contact detail	:	09464415610
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2016 and is being used for custom hiring @₹ 1000/acre. This eco friendly technology helps in improvement of soil heath over a period of time.
This has been proven beneficial in various ways as follows :

- Good crop stand shows improvement in soil health
- Weed control
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Low cost of cultivation
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	20
2017-18	32
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Kuldeep Singh

Father's name	:	S. Minder Singh
Age of farmer	:	55 yrs
Acad. qual. of farmer	:	Metric
Mailing address	:	Powat, Machhiwara
Contact detail	:	09464642667
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	11 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own purpose. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Low cost of cultivation
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	8
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage
- No other problem faced

S. Harpreet Singh

Father's name	:	S. Sukhdev Kumar
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	--
Mailing address	:	Jodhwal, Machiwara
Contact detail	:	08146479318
Land Holding (in Acres)	:	14 acre
Paddy area (in Acres)	:	14 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring and own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Weed control
- Low cost of cultivation

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	85
Including the area of wheat covered under custom hiring-out basis	

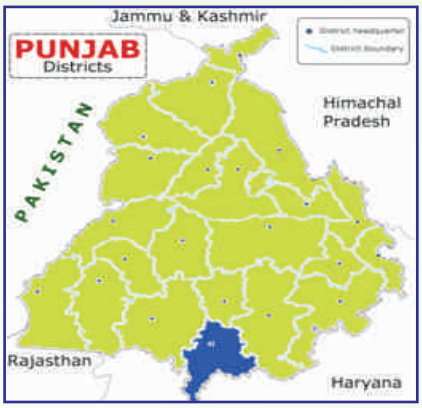
CONSTRAINTS

- No problem faced

Mansa

Contributors: Gurdeep Singh, Pritpal Singh and GPS Sodhi

Total area	:	354785 ha
Net sown area	:	181656 ha
Net Irrigated area	:	232106 ha
Cropping intensity	:	194%
No. of blocks	:	5
Major agri-activities	:	Livestock, Poultry and Fisheries
Major seasonal crops	:	Cotton, Rice, Moong, Wheat, Rapseed & Mustard and Barely
Major fruit crops	:	Kinnu, Orange, Lemon, Grapes, Guava and Peach



Particulars	Blocks					Total
	Mansa	Jhunir	Bhikhi	Sardugarh	Budhlada	5
Villages (No.)	42	42	33	40	87	244
Area (Ha) #	28376	35310	26354	64923	199822	354785
Net sown area (Ha) Kharif	40781	25796	32100	23958	59021	181656
Rabbi	40903	25824	32120	24815	59838	181656
Irrigated area (Ha)	100%	99%	100%	100%	99%	232106
Area under Paddy (Ha)	23279	7908	27480	10461	38061	464212
Area under wheat (Ha)	37958	24062	29824	23117	55953	928424
Paddy Production (tonne) *	231949	40184	182805	71741	131926	1856848
Wheat Production (tonne) *	160818	62057	99575	113415	221421	3713696

S. Hardeep Singh

Father's name	:	S. Gurbachan Singh
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	B.A
Mailing address	:	Gharangna, Mansa, Mansa
Contact detail	:	9815443633
Land Holding (in Acres)	:	27 acre
Paddy area (in Acres)	:	21 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2012. Used for own purpose and also for on custom hiring basis. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat
- Yield same as in conventional sowing
- Saving in cost of cultivation

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	15
2015-16	20
2016-17	21
2017-18	55
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Harcharan Singh

Father's name	:	S. Kuljeet Singh
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Gharangna, Mansa
Contact detail	:	9463918966
Land Holding (in Acres)	:	17 acre
Paddy area (in Acres)	:	16 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution,
- Saving in time,
- Timely sowing of crop,
- No weed problem,
- Savings in cost of cultivation (only 5.0 diesel consumption per acre).

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	145
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Irrigation time is more in happy seeder sown wheat.
- Fear of attack of pink stem borer.

S. Nirmal Singh

Father's name	:	S. Surjit Singh
Age of farmer	:	46 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	Gharangna, Mansa
Contact detail	:	9465058846
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	8 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Advanced sowing of wheat crop,
- Less diesel consumption,
- No weed problem.
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	90
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Farmers fear of reduction in wheat yield.
- Happy seeder machine did not work in SMS fitted combine harvested fields where harvesting has taken place 5-6 days before operation of happy seeder.
- Fear of water stagnation

S. Gagandeep Singh

Father's name	:	S. Karam Singh
Age of farmer	:	10+2 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Harangna, Mansa,
Contact detail	:	9779555919
Land Holding (in Acres)	:	22+8 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2011. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Poor germination at spots pressed by combine tyres during paddy harvesting.
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	15
2015-16	20
2016-17	70
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Fear of reduction in yield
- Attack of pink stem borer
- Deserted look of the field at initial crop stage

S. Rajwinder Singh

Father's name	:	S. Gurdev Singh
Age of farmer	:	25 yrs
Acad. qual. of farmer	:	B.A
Mailing address	:	Ubha, Mansa,
Contact detail	:	8288805075
Land Holding (in Acres)	:	54 acre
Paddy area (in Acres)	:	21 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- No probem of *karand*in happy seeder sown crop.
- No need to use chemicals for weed control.
- Saving in cost of cultivation
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	150
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Jaswant Singh

Father's name	:	S. Bhoora Singh
Age of farmer	:	45 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Gharangna, Mansa,
Contact detail	:	9876550925
Land Holding (in Acres)	:	25 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Problem in during sowing in SMS fitted combine harvested fields if sowing is delayed
- Pink stem borer problem in wheat
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- It takes more time to irrigated wheat field.
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	80
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Efficiency in 5-6 acres only.

S. Darshan Singh

Father's name	:	S. Gurdev Sing
Age of farmer	:	50 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Ubha, Mansa
Contact detail	:	9780202672
Land Holding (in Acres)	:	30 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows

- Soil health has improved.
- No stress on wheat if heavy irrigation is applied.
- No need to spray weedicide.
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	Wheat area in Acres
2014-15	-
2015-16	125
2016-17	25
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Problem of pink stem borer

S. Jagjit Singh

Father's name	:	S. Gurubax Singh
Age of farmer	:	31 yrs
Acad. qual. of farmer	:	10
Mailing address	:	Burj Hari, Mansa
Contact detail	:	9041379800
Land Holding (in Acres)	:	8+10 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1300/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	70
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Jivan Singh

Father's name	:	S. Gurchet Singh
Age of farmer	:	26 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Nangal Kalan
Contact detail	:	9855114874
Land Holding (in Acres)	:	25 acre
Paddy area (in Acres)	:	18 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1000/acre. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Problem in sowing at corners of sowing plot
- No need to spray weedicide
- Improvement in soil health
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	10+45
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Pink stem borer

S. Jasvinder Singh

Father's name	:	S. Harchand Singh
Age of farmer	:	32 yrs
Acad. qual. of farmer	:	10
Mailing address	:	AkabpurKhudal, Budhlada
Contact detail	:	9463290349
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	9 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No need to spray weedicide
- Improvement in soil health
- Diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	4
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deterioration in quality of wheat straw used as fodder for animals.
- Pink stem borer

S. Uttam Singh

Father's name	:	S. Kunda Singh
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	6th
Mailing address	:	Chachor, Jhunir
Contact detail	:	9501922400
Land Holding (in Acres)	:	25 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 800/acre. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- No need to spray weedicide
- Improvement in soil health
- Crop growth is very good
- 6-7 litres diesel compared to 20-25 litres in conventional
- Lless fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	4+21
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Pink stem borer

S. Satnam Singh

Father's name	: S. Bhupinder Singh
Age of farmer	: 26 yrs
Acad. qual. of farmer	: B.A.
Mailing address	: NangalKhurd,
Contact detail	: 9876441531
Land Holding (in Acres)	: 15 acre
Paddy area (in Acres)	: 6 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1200/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- No need to spray weedicide
- Crop stand is very good

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	6+50
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gurdial Singh

Father's name	:	S. Mohinder Singh
Age of farmer	:	60 yrs
Acad. qual. of farmer	:	B.A.
Mailing address	:	Dullowal, Mansa
Contact detail	:	9872036026
Land Holding (in Acres)	:	105 acre
Paddy area (in Acres)	:	105 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time.
This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- No need to spray weedicide
- Improvement in soil health
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	105
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Sukhdev Singh

Father's name	:	S. Labh Singh
Age of farmer	:	57 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Dariapur Kalan, Budhlada
Contact detail	:	9876127487
Land Holding (in Acres)	:	70 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	95
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Baru Singh

Father's name	:	S. Jaswant Singh
Age of farmer	:	38 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Ubha, Mansa
Contact detail	:	9876302963
Land Holding (in Acres)	:	40 acre
Paddy area (in Acres)	:	25 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Cost reduction
- Reduction of fertilizer use, wheat yield
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	50
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deterioration in quality of wheat straw
- Pink stem borer attack in wheat
- After irrigation crop shows stress

S. Gurkirpal Singh

Father's name	:	S. Gurcharan Singh
Age of farmer	:	43 yrs
Acad. qual. of farmer	:	10+12
Mailing address	:	Allike, Sardulgarh,
Contact detail	:	94172-
Land Holding (in Acres)	:	28 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Sowing should be delayed than normal sowing to get good results
- Reduction in use of fertilizers
- No need to spray weedicide
- Improvement in soil health
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	35
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Pink stem borer

S. Gurmeet Singh

Father's name	:	S. Nazar Singh
Age of farmer	:	43 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	Dullowal, Mansa
Contact detail	:	9417481645
Land Holding (in Acres)	:	60 acre
Paddy area (in Acres)	:	42 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- No need to spray weedicide
- Improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

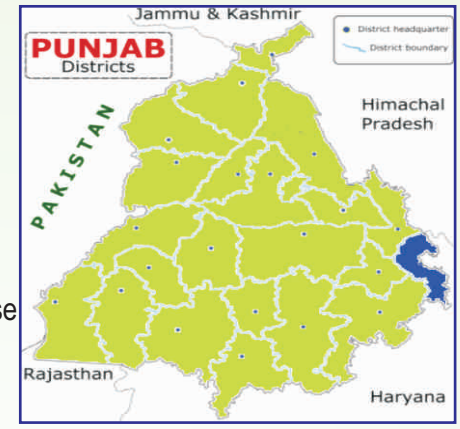
CONSTRAINTS

- Deterioration in quality of wheat straw used as fodder for animals.

S.A.S. Nagar (Mohali)

Contributors: Yashwant Singh and Priyanka Suryavanhi

Total area	:	118900 ha
Net sown area	:	75000 ha
Net Irrigated area	:	69688 ha
Cropping intensity	:	157%
No. of blocks	:	3
Major agri-activities	:	Potato, Onion, Cauliflower and Tomatoes
Major seasonal crops	:	Wheat, Paddy, Maize, Oil Seeds, Sugarcane and Pulse
Major fruit crops	:	Guava, Mangoes, Kinnow, Pear, Peach and Banana



Particulars	Blocks			Total
	Kharar	Derabassi	Majri	3
Villages (No.)	139	111	116	366
Area (Ha)	31646	28055	26752	86453
Net sown area (Ha)	22610	18065	13090	53765
Irrigated area (Ha)	20781	13714	10925	45420
Area under Paddy (Ha)	9916	11805	4042	25763
Area under wheat (Ha)	18349	14739	9984	43072
Paddy Production (tonne)	9916	11805	4042	25763
Wheat Production (tonne)	18349	14739	9984	43072

S. Major Singh

Father's name	:	S. Rulda Singh
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	8th
Mailing address	:	Mehroli village
Contact detail	:	9592596174
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	8 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1200/acre. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	11
2015-16	10
2016-17	10
2017-18	10
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Nikka Singh

Father's name	:	S. Gurdev Singh
Age of farmer	:	35 yrs
Acad. qual. of farmer	:	12th
Mailing address	:	Tewar village,
Contact detail	:	9876820261
Land Holding (in Acres)	:	3 acre
Paddy area (in Acres)	:	1 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1400/acre. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional\
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	3
2015-16	3
2016-17	3
2017-18	3
Including the area of wheat covered under custom hiring-out basis	

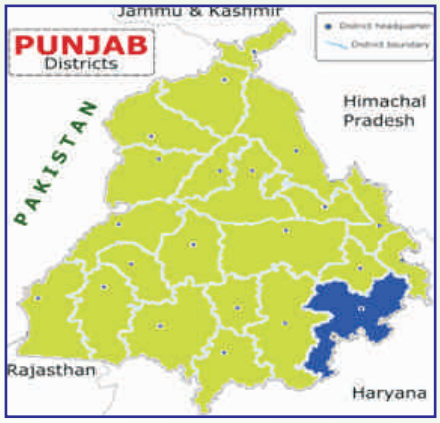
CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

Patiala

Contributors: Jasvinder Singh and Parminder Singh

Total area	:	332400 ha
Net sown area	:	259000 ha
Net Irrigated area	:	257000 ha
Cropping intensity	:	198%
No. of blocks	:	8
Major agri-activities	:	Livestock, Poultry and Fisheries
Emerging agri-activities	:	: Agiculture, dairy farming, floriculture, fish farming and protected horticulture
Major seasonal crops	:	Paddy, Maize, Sugarcane, Wheat, Cotton, Ground Nutt, Barley, Peas and Sunflower
Major fruit crops		Kinnow, Orange, Malta, Lemon, Mangoes, Guava and Pear



Particulars	Blocks								Total
	Patran	Samana	Nabha	Patiala	Sanaur	Bhunerheri	Ghanaur	Rajpura	8
Villages (No.)	57	80	171	108	105	148	128	115	912

S. Ajaib Singh

Father's name	:	S. Malkit Singh
Age of farmer	:	52 yrs
Acad. qual. of farmer	:	10th
Mailing address	:	VillageMusandpurpatti
Contact detail	:	9815404130
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	50 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	30
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Sukhwinder Singh

Father's name	:	S. Iqbal Singh
Age of farmer	:	57 yrs
Acad. qual. of farmer	:	8th
Mailing address	:	VPO Shutrana, Tehsil Patran
Contact detail	:	9217810377
Land Holding (in Acres)	:	22 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1700/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand
- Less pollution because of no residue burning
- Happy seeder sown wheat performed well in-spiteof untimely rainfall
- Reduction in production cost in happy seeder sown wheat (uses 6-7 litres diesel compared to 20-25 litres in conventional)
- Decreased fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	Wheat area in Acres
2014-15	-
2015-16	-
2016-17	-
2017-18	20
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Gursewak Singh

Father's name	:	S. Gian Singh
Age of farmer	:	39 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	VPO Malewal, Block Nabha
Contact detail	:	9815563205
Land Holding (in Acres)	:	17 acre
Paddy area (in Acres)	:	12 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1550/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Lower dose of fertilizer
- Comparable wheat yield than conventional method
- Less weed incidence in happy seeder sown wheat
- Good crop stand shows improvement in soil health
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less production cost

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	12
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Jarnail Singh

Father's name	:	S. Chatan Singh
Age of farmer	:	60 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	VPO Dedhna Block Nabha
Contact detail	:	9888848980
Land Holding (in Acres)	:	2 acre
Paddy area (in Acres)	:	2 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	12
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Parvinder Singh

Father's name	:	S. Matvana Preetam Singh
Age of farmer	:	38 yrs
Acad. qual. of farmer	:	higher secondary
Mailing address	:	VPO Gajewas Block Samana
Contact detail	:	9463042107
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	-

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1650/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Lower dose of fertilizer
- Comparable wheat yield than conventional method
- Less weed incidence in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	2
2017-18	18
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Hardeep Singh

Father's name	:	S. Tehal Singh
Age of farmer	:	7 yrs
Acad. qual. of farmer	:	Higher Secondary
Mailing address	:	VPO Binaheri Block Nabha
Contact detail	:	779892013
Land Holding (in Acres)	:	.5 acre
Paddy area (in Acres)	:	2 acre (land on lease)

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1700/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Better alternate to residue burning
- Environment friendly: Reduces air pollution & better soil management
- Better crop yield
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	52
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Gurinder Singh

Father's name	:	S. Avtar Singh
Age of farmer	:	28 yrs
Acad. qual. of farmer	:	BPharma
Mailing address	:	VPO Ghaniwal Block Nabha
Contact detail	:	9876604500
Land Holding (in Acres)	:	50 acre
Paddy area (in Acres)	:	31 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	15
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Tarlochan Singh

Father's name	:	S. Jaswant Singh
Age of farmer	:	58 yrs
Acad. qual. of farmer	:	Graduate
Mailing address	:	VPO Chandumajra Block Rajpura
Contact detail	:	9814230656
Land Holding (in Acres)	:	30 acre
Paddy area (in Acres)	:	30 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Happy seeder sown wheat can withstand bad weather conditions
- Uses 6-7 litres diesel compared to 20-25 litres in conventional
- Decreased use of fertilizer
- Wheat yield will be higher or equal to conventional
- Lesser weed incidence in happy seeder sown wheat
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	15
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Jasdev Singh

Father's name	:	S. Arjan Singh
Age of farmer	:	56 yrs
Acad. qual. of farmer	:	6th
Mailing address	:	V.P.O. Ageti, Block Nabha
Contact detail	:	98148 48321
Land Holding (in Acres)	:	95 acre
Paddy area (in Acres)	:	83 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1500/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows

- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- No residue burning
- Environment friendly: Reduces air pollution & better soil management
- Better crop yield as compared to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	55
Including the area of wheat covered under custom hiring-out basis	

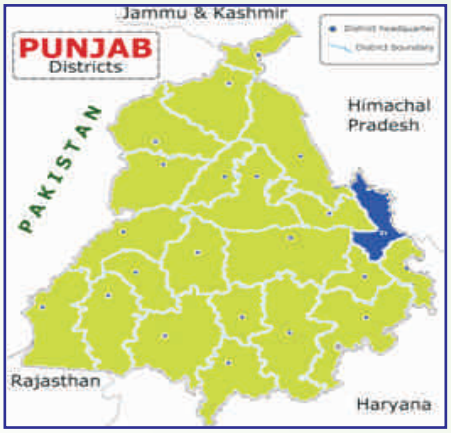
CONSTRAINTS

- No problem

Ropar

Contributors: Vipan K Rampal, Opinder Singh and Ashok Kumar

Total area	:	135849 ha
Net sown area	:	76555 ha
Net Irrigated area	:	66799 ha
Cropping intensity	:	162%
No. of blocks	:	5
Major agri-activities	:	Livestock and Fisheries
Major seasonal crops	:	Wheat, Paddy, Maize, Potatoes, Sugarcane, Barley, Cotton and Cauliflower
Major fruit crops	:	Mangoes, Guava, *Kinnow* and *Ber*



Particulars	Blocks					Total
	Morinda	Ropar	Chamkor Sahib	Nurpur Bedi	Anandpur Sahib	
Villages (No.)	71	196	112	110	128	617
Area (ha)	13886	37493	19026	34437	31007	135849
Net sown area (Ha)	11580	18780	15116	15068	16011	76555
Irrigated area (Ha)	11532	15751	14875	12856	11785	66799
Area under Paddy (Ha)	9080	8621	12530	3850	3690	37771
Area under wheat (Ha)	10291	13313	14747	14474	15365	68190
Paddy Production (Metric tonne)	75000	55000	80000	21000	26000	257000
Wheat Production (Metric tonne)	56000	70000	79000	62000	63000	330000

S. Gurcharan Singh

Father's name	:	S.Sarwan Singh
Age of farmer	:	69 years
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Fatehpur
Contact detail	:	9417406335
Land Holding (in Acres)	:	8 acre
Paddy area (in Acres)	:	2 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	45
2016-17	90
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Hardeep Singh

Father's name	:	S. Inderjit Singh
Age of farmer	:	21 years
Acad. qual. of farmer	:	B.A.
Mailing address	:	V.P.O.Balrampur
Contact detail	:	4176-50160
Land Holding (in Acres)	:	3 acre
Paddy area (in Acres)	:	3 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 for own use. This eco friendly technology has good crop stand which shows improvement in soil health Also, less pollution takes place because of no residue burning. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6 litres diesel compared to 25 litres in conventional
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	30
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Jasvir Singh

Father's name	:	S. Gyan Singh
Age of farmer	:	42 years
Acad. qual. of farmer	:	B.A.
Mailing address	:	V.P.O. Bela, Bl
Contact detail	:	9855892933
Land Holding (in Acres)	:	70 acre
Paddy area (in Acres)	:	70acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own use and custom hiring. This eco friendly technology helps in improvement of soil heath over a period of time and there is less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat. This has been proven beneficial in various ways as follows:

- Less water requirement (maximum 2- 3 irrigations compared to 4-5 irrigations in conventional)
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less cost of production as in happy seeder sown wheat we use 5-6 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	70
2016-17	70
2017-18	70
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Little incidence of rodents noticed

S. Jashanpreet Singh

Father's name	:	S. Iqbal Singh
Age of farmer	:	21 years
Acad. qual. of farmer	:	Matric
Mailing address	:	V.P.O. Bela, Block: Chamkaur Sahib
Contact detail	:	9877088251
Land Holding (in Acres)	:	15 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1600/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	45
2016-17	90
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

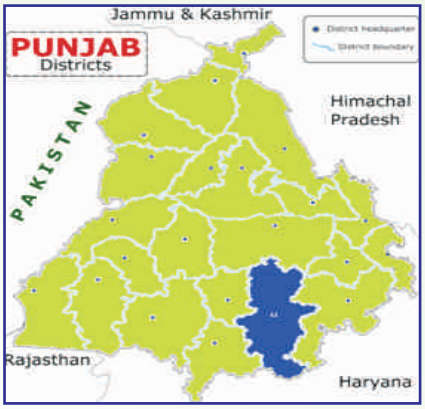
CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

Sangrur

Contributors: Mandeep Singh, Pawan Kumar, Satbir Singh and Ravinder Kaur

Total area : 361452 ha
Net sown area : 315255 ha
Net Irrigated area : 315255 ha
Cropping intensity : 198%
No. of blocks : 10
Emerging agri-activities : Potato, Onion, Tomato, Chillies, Cabbage, Cauliflower, Okra, Brinjal, Garlic, Peas and Cucurbits
Major seasonal crops : Rice, Cotton, Sugarcane, Moong, Arhar, Wheat, Barely, Gram and Mustard
Major fruit crops : Mango, Kinnow, Malta, Guava, Peach, Pear, Plum, Banana and Grapes



Particulars	Blocks										Total
	Sangrur	Bhawanigarh	Sunam	Dirba	Lehragaga	Andana	Dhuri	Sherpur	Malerkotala	Ahmedgarh	
Villages (No.)	59	69	43	44	43	42	57	40	98	94	589
Area (ha.)	44204	34255	48876	33436	39146	32445	32495	27502	36012	33081	361452
Net Sown Area (ha.)	37564	30323	42870	30137	34722	28866	27921	24414	30150	28288	315255
Irrigated Area (ha.)	37564	30323	42870	30137	34722	28866	27921	24414	30150	28288	315255
Area under Paddy (ha.)	33373	28059	37394	26984	28543	26639	25192	22398	25081	25792	279455
Area under Wheat (ha.)	34444	27541	38248	27932	32222	27052	24837	22491	25882	25582	286231
Paddy Production (Tonne)	243253	204349	278934	204560	216968	195004	181120	163482	191484	187316	2066470
Wheat Production (Tonne)	191405	153045	212544	155218	179058	150328	138019	124982	143826	142159	1590584

Sh. Mangat Ram Sharma

Father's name	:	S. Darshan Ram S
Age of farmer	:	28 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Village: Gujjran
Contact detail	:	9417232791
Land Holding (in Acres)	:	28 acre
Paddy area (in Acres)	:	26 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for self purpose. This eco friendly technology helps in improvement of soil heath. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Air pollution is reduced
- Cost of sowing decreases as compared to conventional sowing
- Good control of (*Phalaris minor*) in wheat
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	180
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Wet fields
- Farmers have fear of poor germination but actually it did not happen

S. Pal Singh Dhaliwal

Father's name	:	S. Mehar Singh Dhaliwal
Age of farmer	:	52 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Gujjran, Tehsil: Sunam
Contact detail	:	9463017266
Land Holding (in Acres)	:	40 acre
Paddy area (in Acres)	:	33 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1100/acre. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Soil health and environmental improvement
- Cost reduction (more than ₹ 1200/- acre)
- Reduction of fertilizer use
- No lodging
- Wheat yield (more than 1.0q /acre) and Weed control (75% control)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	80
2016-17	70
2017-18	200
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage
- Wet fields

S. Satnam Singh Sidhu

Father's name	:	S. Major Singh Sidhu
Age of farmer	:	32 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Village: Gujjran
Contact detail	:	9815140603
Land Holding (in Acres)	:	13 acre
Paddy area (in Acres)	:	12 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for self sowing. This eco friendly technology helps in improvement of soil heath over a period of time. This has been proven beneficial in various ways as follows:

- Air pollution is reduced
- Cost of sowing decreases as compared to conventional sowing
- Good control of (*Phalaris minor*) in wheat
- Happy seeder sown wheat can withstand untimely rainfall
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	80
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Rodents
- Farmers have fear of poor germination but actually it did not happen

S. Naib Singh Sidhu

Father's name	:	S. Gurbaksh Singh Sidhu
Age of farmer	:	45 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	Village: Gujjran
Contact detail	:	9914339053
Land Holding (in Acres)	:	21 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring and self use. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Environmental improvement
- Cost reduction
- No weeds
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Grain quality same as conventional method
- Less water requirement (maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	90
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage
- Farmers have fear of poor germination

S. Gurcharan Singh Dhaliwal

Father's name	:	S. Pritam Singh Dhaliwal
Age of farmer	:	60 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Village: Gujjran, Tehsil:
Contact detail	:	9878618133
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1200/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less fertilizer use compared to conventional method
- Grain quality same as conventional method
- Environmental improvement
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Cost reduction
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	100
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Nirmal Singh Dhaliwal

Father's name	:	S. Nahar Singh Dhaliwal
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Gujjran, Tehsil: Sunam
Contact detail	:	9878744168
Land Holding (in Acres)	:	14 acre
Paddy area (in Acres)	:	14 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Environmental improvement
- Happy seeder sown wheat can withstand untimely rainfall
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Cost reduction
- Weed control

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	130
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Wet Fields
- Deserted look of the field at initial crop stage

S. Maghar Singh Sidhu

Father's name	:	S. Bachan Singh Sidhu
Age of farmer	:	65 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Village: Gujjran
Contact detail	:	9872321823
Land Holding (in Acres)	:	3 acre
Paddy area (in Acres)	:	3 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring and own use. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Soil health and environmental improvement
- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- No lodging
- Weed control (75% control)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	35
2015-16	50
2016-17	100
2017-18	175
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Jagroop Singh Dhillon

Father's name	:	S. Hari Singh Dhillon
Age of farmer	:	57 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Village: Gujjran
Contact detail	:	9872384414
Land Holding (in Acres)	:	60 acre
Paddy area (in Acres)	:	57 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for self purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- No lodging
- Weed control (75% control)
- Less water requirement (Maximum 2-3 irrigations compared to 4-5 irrigations in conventional)
- Happy seeder sown wheat can withstand untimely rainfall
- Soil health Environmental improvement

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	24
2017-18	150
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Farmers have fear of poor germination

S. Satjit Singh Sidhu

Father's name	:	S. Bant Singh Sidhu
Age of farmer	:	34 yrs
Acad. qual. of farmer	:	8th
Mailing address	:	TaranjiKhera
Contact detail	:	9915488690
Land Holding (in Acres)	:	8 acre
Paddy area (in Acres)	:	7 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring @₹ 1000/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- No lodging
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	1
2017-18	60
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Rodents

Sh. Kauhar Chand Sharma

Father's name	:	S. Kaka Ram Sharma
Age of farmer	:	32 yrs
Acad. qual. of farmer	:	10+2
Mailing address	:	Gujjran, Tehsil: Suna
Contact detail	:	8360472005
Land Holding (in Acres)	:	32.5 acre
Paddy area (in Acres)	:	32 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Grain quality same as conventional method
- Environmental improvement
- Cost reduction
- Weed control
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	70
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem faced

S. Gurmeet Singh Dhindsa

Father's name	:	S. Bawa Singh Dhindsa
Age of farmer	:	45 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	TaranjiKhera
Contact detail	:	9465526879
Land Holding (in Acres)	:	40 acre
Paddy area (in Acres)	:	35 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1000/acre. This eco friendly technology helps less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Grain quality same as conventional method
- Soil health and environmental improvement
- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- No lodging
- Weed control (75% control)

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	40
2015-16	100
2016-17	120
2017-18	140
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Santokh Singh

Father's name	:	S. Gurmail Singh
Age of farmer	:	37 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Kanoi Tehsil: Sangrur
Contact detail	:	9478402916
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	11 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring and own purpose. This eco friendly technology helps in improvement of soil heath. This has been proven beneficial in various ways as follows:

- No lodging
- Weed control (75% control)
- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	4
2016-17	8
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem as we sown rice variety PR 121
- Deserted look of the field at initial crop stage

S. Gurpreet Singh Chahal

Father's name	:	S. Chamkaur Singh Chahal
Age of farmer	:	31 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Kanoi, Sangrur
Contact detail	:	9417338989
Land Holding (in Acres)	:	30 acre
Paddy area (in Acres)	:	29 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 and is being used for custom hiring. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Soil health and environmental improvement
- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- Less fertilizer use compared to conventional method
- Wheat yield will be higher or equal to conventional

CONSTRAINTS

- No problem faced

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	5
2016-17	10
2017-18	45
Including the area of wheat covered under custom hiring-out basis	

S. Mukhtiar Singh Toor

Father's name	:	S. Ramsharan Singh Toor
Age of farmer	:	75 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Village: Kanoi
Contact detail	:	9256518935
Land Holding (in Acres)	:	8 acre
Paddy area (in Acres)	:	7 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1300/acre. This eco friendly technology helps in improvement of soil heath. This has been proven beneficial in various ways as follows:

- Cost reduction (more than ₹ 1500/- acre)
- Reduction of fertilizer use
- Reduction of fertilizer use
- More wheat yield (more than 2.0q /acre)
- No lodging
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	Wheat area in Acres
2014-15	96
2015-16	105
2016-17	110
2017-18	2.5
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Farmers have fear of poor germination

S. Malwinder Singh Brar

Father's name	:	S. Ranjit Singh Brar
Age of farmer	:	24 yrs
Acad. qual. of farmer	:	B.A.
Mailing address	:	Kanoi, Sangrur
Contact detail	:	8283851267
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	15 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring and own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- More Wheat yield
- Weed control (70% control)
- Soil health and environmental improvement
- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Cost reduction (more than ₹ 1100/- acre)
- Reduction of fertilizer use
- No lodging

CONSTRAINTS

- Rodents
- Deserted look of the field at initial crop stage

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	6
2015-16	9
2016-17	32
2017-18	86
Including the area of wheat covered under custom hiring-out basis	

S. Matwal Singh Dhaliwal

Father's name	:	S. Jagroop Singh Dhaliwal
Age of farmer	:	41 yrs
Acad. qual. of farmer	:	B.A.
Mailing address	:	Village: Gujjran
Contact detail	:	9815261359
Land Holding (in Acres)	:	32 acre
Paddy area (in Acres)	:	30 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1400/acre. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- No lodging,
- Equal Wheat yield
- Good crop stand shows improvement in soil health
- Cost reduction (more than ₹ 800/- acre)
- Reduction of fertilizer use
- Weed control (75% control)
- Soil health and environmental improvement

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	6
2015-16	35
2016-17	60
2017-18	80
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Wet fields
- Deserted look of the field at initial crop stage

S. Sukhjinder Singh Brar

Father's name	:	S. Sadhu Singh Brar
Age of farmer	:	48 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	Village: Kanoi, Sangrur
Contact detail	:	9872659301
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for own purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Less pollution because of no residue burning
- Cost reduction (more than ₹ 1200/- acre)
- Reduction of fertilizer use
- No lodging
- More wheat yield
- Weed control (80% control)
- Soil health
- Environmental improvement

Area covered by Happy Seeder

Year	Wheat area in Acres
2014-15	18
2015-16	20
2016-17	20
2017-18	37

Including the area of wheat covered under custom hiring-out basis

CONSTRAINTS

- Deserted look of the field at initial crop stage

S. Rajinder Singh Dhindsa

Father's name	:	S. Babu Singh Dhindsa
Age of farmer	:	39 yrs
Acad. qual. of farmer	:	5th
Mailing address	:	Taranji Khera
Contact detail	:	9463774780
Land Holding (in Acres)	:	12 acre
Paddy area (in Acres)	:	10 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2015 and is being used for custom hiring and self purpose. This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Cost reduction (more than ₹ 1200/- acre)
- Reduction of fertilizer use
- No lodging
- Equal wheat yield
- Weed control (60% control)
- Soil health
- Environmental improvement

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	30
2016-17	30
2017-18	32
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Wet fields
- Deserted look of the field at initial crop stage

S. Jaswinder Singh Dulat

Father's name	:	S. Harnaib Singh Dulat
Age of farmer	:	51 yrs
Acad. qual. of farmer	:	Matric
Mailing address	:	Longowal, District: Sangrur
Contact detail	:	9872417274
Land Holding (in Acres)	:	20 acre
Paddy area (in Acres)	:	20 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2014 and is being used for custom hiring @₹ 1300/acre. This eco friendly technology helps in improvement of soil heath. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Cost reduction (more than ₹ 1500/- acre)
- Water conservation (one irrigation)
- Reduction of fertilizer use
- No lodging
- Equal wheat yield
- Weed control (70% control)
- Soil health and environmental improvement

CONSTRAINTS

- Farmers have fear of poor germination

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	5
2016-17	10
2017-18	60
Including the area of wheat covered under custom hiring-out basis	

S. Nirmal Singh Dulat

Father's name	:	S. Hardev Singh Dulat
Age of farmer	:	40 yrs
Acad. qual. of farmer	:	8th
Mailing address	:	Village: Longowal, Sangrur
Contact detail	:	9464397622
Land Holding (in Acres)	:	16 acre
Paddy area (in Acres)	:	16 acre

EXPERIENCES

Purchased the Happy Seeder Machine in 2013 and is being used for custom hiring and self purpose. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Good crop stand shows improvement in soil health
- Cost reduction (more than ₹ 2500/- acre)
- Water conservation (one irrigation)
- Reduction of fertilizer use
- No lodging
- Equal wheat yield
- Weed control (no use of weedicide)
- Soil health and environmental improvement
- Happy seeder sown wheat can withstand untimely rainfall

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	12
2015-16	18
2016-17	17
2017-18	16
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Wet fields
- Deserted look of the field at initial crop stage

Tarantarn

Contributors: Balwinder Kumar, Navjot Singh and Anil Kumar

Total area	:	241573 ha
Net sown area	:	215673 ha
Net Irrigated area	:	215673 ha
Cropping intensity	:	182%
No. of blocks	:	8
Major agri-activities	:	Livestock and Fisheries
Major seasonal crops	:	Rice, Maize, Arhar, Moong and Wheat
Major fruit crops	:	Kinnow, Orange, Lemon, Mangoes, Litchi, Guava, Pear, Plum, and Peac

Particulars	Blocks								Total 8
	Tarn Taran	Naushehra Pannuan	Chohla Sahib	Gandiwind	Khadur Sahib	Patti	Valtoha	Bhikhiwind	
Villages (No.)	85	50	51	36	73	81	59	59	494
Area (Ha)	36122	29242	26725	16201	28805	35901	36607	31970	241573
Net sown area(Ha)	33915	23139	25072	15126	26019	33281	32044	27077	215673
Irrigated area (Ha)	33915	23139	25072	15126	26019	33281	32044	27077	215673
Area under Paddy (Ha)	14200	11000	8700	5774	28586	20235	18018	17814	124327
Basmati (Ha)	8526	4982	6727	6530	1496	10500	10928	7688	57377
Area under wheat (Ha)	24648	14500	20488	7317	31325	31693	28650	26350	184971
Paddy Production (tonne)	107139	82995	65642	43565	215681	152673	135946	134407	938048
Wheat Production (tonne)	118557	69745	98547	35195	150673	152443	137807	126744	889711

S. Gurbachan Singh

Father's name	:	S. Kehar Singh
Age of farmer	:	53
Acad. qual. of farmer	:	Graduate
Mailing address	:	Village Burj Deva Singh,
Contact detail	:	9855808365
Land Holding (in Acres)	:	40
Paddy area (in Acres)	:	35

EXPERIENCES

Purchase happy seeder machine in 2008 (Using happy seeder since 2004). It results in improve in soil health and is environmental friendly. It decrease the problem of *Phlaris minor* in wheat due to surface mulch of paddy straw and also helps in water conservation.

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	24
2015-16	26
2016-17	25
2017-18	27
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Baljit Singh

Father's name	:	S. Tara Singh
Age of farmer	:	52
Acad. qual. of farmer	:	Matric
Mailing address	:	Village Bangla Rai, Tehsil Patti
Contact detail	:	7087085682
Land Holding (in Acres)	:	65
Paddy area (in Acres)	:	60

EXPERIENCES

Purchased the Happy Seeder Machine in 2017. Used for own purpose. This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Less weeds especially gullidanda (*Phalaris minor*) in happy seeder sown wheat
- Saving in cost of cultivation

CONSTRAINTS

- No problem

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	145
Including the area of wheat covered under custom hiring-out basis	

S. Daljit Singh

Father's name	:	S. Jagir Singh
Age of farmer	:	49
Acad. qual. of farmer	:	Matric
Mailing address	:	Village Burj Deva Singh,
Contact detail	:	9915900039
Land Holding (in Acres)	:	30
Paddy area (in Acres)	:	28

EXPERIENCES

Purchase happy seeder machine in 2016 (Using happy seeder since 2004). It results in improve in soil health and is environmental friendly. It decrease the problem of *Phlaris minor* in wheat due to surface mulch of paddy straw and also helps in water conservation.

- Improvement in soil health as compared to conventional method
- No residue burning
- Wheat yield will be higher or equal to conventional
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat
- Less water requirement
- Less cost of production as in happy seeder sown wheat we use 6-7 litres diesel compared to 20-25 litres in conventional
- Less fertilizer use compared to conventional method

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	25
2015-16	24
2016-17	25
2017-18	27
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

S. Sukhpal Singh

Father's name	:	S. Balvir Singh
Age of farmer	:	38
Acad. qual. of farmer	:	10+2
Mailing address	:	Village Booh Havelian,
Contact detail	:	9464019003
Land Holding (in Acres)	:	100
Paddy area (in Acres)	:	80

EXPERIENCES

Purchased the Happy Seeder Machine in 2017 This eco friendly technology helps in improvement of soil heath over a period of time and there is less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution because of no residue burning
- Happy seeder sown wheat performed well in-spiteof untimely rainfall
- Reduction in production cost in happy seeder sown wheat (uses 6-7 litres diesel compared to 20-25 litres in conventional)
- Less weeds especially *gullidanda* (*Phalaris minor*) in happy seeder sown wheat

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	40
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- Less germination in some patches in field

S. Sher Singh

Father's name	:	S. Jagtar Singh
Age of farmer	:	62
Acad. qual. of farmer	:	8th
Mailing address	:	Village Kot Budda
Contact detail	:	9915911101
Land Holding (in Acres)	:	20
Paddy area (in Acres)	:	18

EXPERIENCES

Using machine of other farmers on custom hiring basis.This eco friendly technology helps in less growth of weeds due to surface mulch of paddy residue on the soil. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Complete control of *Phalaris minor* in happy seeder sown wheat
- Saving in cost of cultivation
- Results in timely sowing of crop under adverse weather conditions

CONSTRAINTS

- No problem

Area covered by Happy Seeder	
Year	Wheat area in Acres
2014-15	-
2015-16	-
2016-17	-
2017-18	18
Including the area of wheat covered under custom hiring-out basis	

S. Jorawar Singh

Father's name	:	S. Lakha Singh
Age of farmer	:	30
Acad. qual. of farmer	:	10+2
Mailing address	:	Village Dubli,
Contact detail	:	9463225009
Land Holding (in Acres)	:	10
Paddy area (in Acres)	:	07

EXPERIENCES

Using machine of other farmers on custom hiring. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Complete control of *Phalaris minor* in happy seeder sown wheat
- Saving in cost of cultivation
- Results in timely sowing of crop under adverse weather conditions

CONSTRAINTS

- No problem

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	3
Including the area of wheat covered under custom hiring-out basis	

S. Gurmukh Singh

Father's name	:	S. Sohan Singh
Age of farmer	:	49
Acad. qual. of farmer	:	Primary
Mailing address	:	Village Booh Havelian,
Contact detail	:	9463134114
Land Holding (in Acres)	:	10
Paddy area (in Acres)	:	14

EXPERIENCES

Using machine of other farmers on custom hiring basis. This has been proven beneficial in various ways as follows:

- Less pollution
- Saving in time
- Timely sowing of crop
- No weed problem
- Complete control of *Phalaris minor* in happy seeder sown wheat
- Saving in cost of cultivation
- Results in timely sowing of crop under adverse weather conditions

Area covered by Happy Seeder	
Year	**Wheat area in Acres**
2014-15	-
2015-16	-
2016-17	-
2017-18	5.5
Including the area of wheat covered under custom hiring-out basis	

CONSTRAINTS

- No problem

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