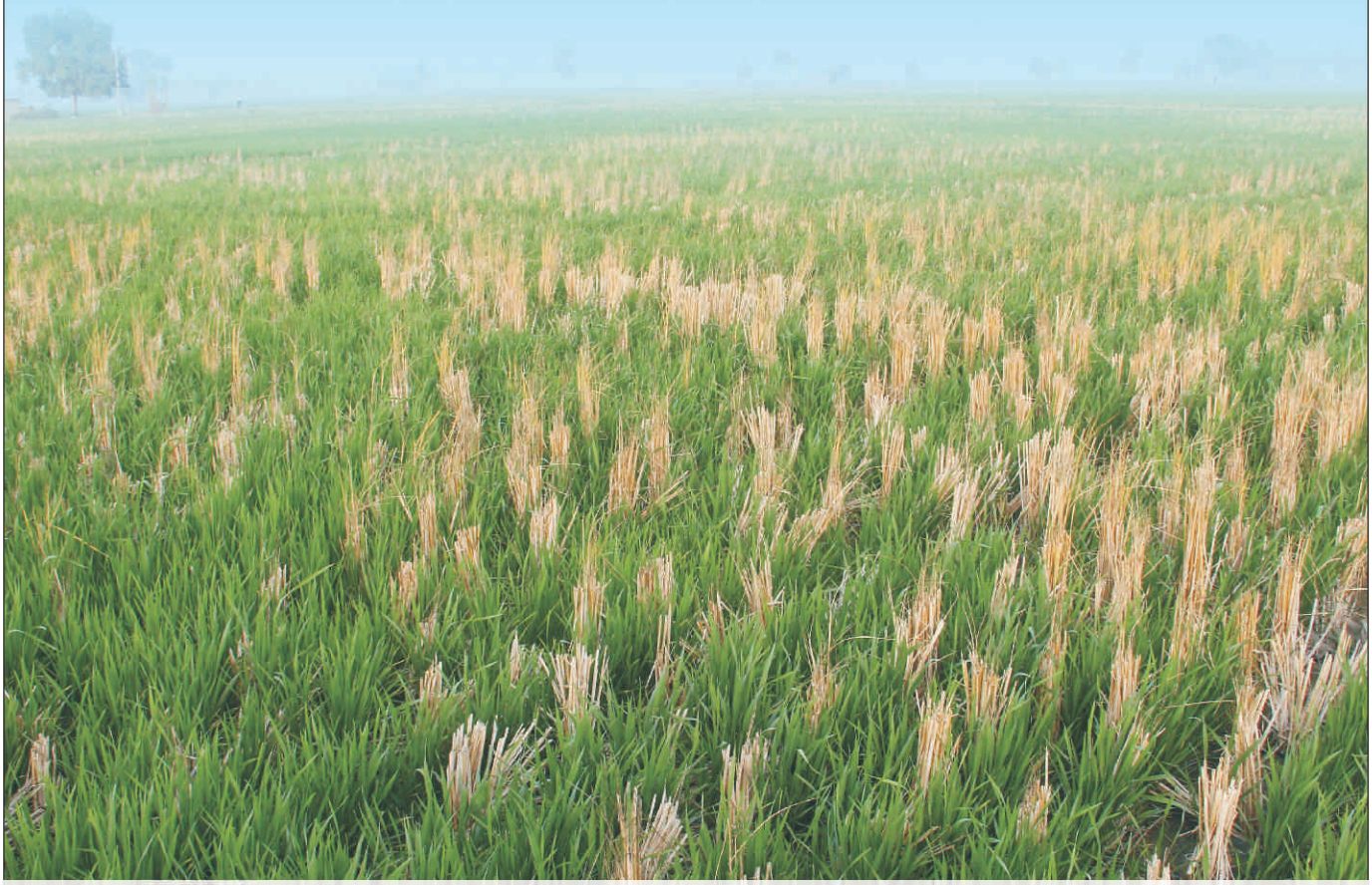
Inspiring 25 Villages of Punjab

Journey Towards Zero Residue Burning



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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

The Indo-Gangetic Plains of India, also known as the "food bowl of India", has witnessed significant increase in area and production of paddy and wheat after Green Revolution. With the advent of mechanized harvesting, crop residue utilization has emerged as a serious challenge due to adoption of easy way of getting rid of it by burning in the field. Its adverse impacts on quality of air, soil health and human health have been estimated to be considerable and thus have serious implications to the air quality and sustainability of the agriculture in these areas. Recent effort by the Government of India to facilitate farmers by subsidizing and making available different technological options for residue management is a welcome step. However, there is a need to adopt holistic and multi-pronged approaches to control residue burning. Farmers need too sensitized about the hazardous effects of residue burning and should be made aware of the available technologies; their confidence must be built around the benefits they can drive out of effective residue management. Krishi Vigyan Kendras (KVKs) are the trusted partners and the worthy friends of the farmers for advising and supporting them in such endeavors.

KVKs under ICAR-ATARI, Ludhiana have been sincerely working to develop residue management technology hubs at ground zero (village level), where the crop residue is being managed through available technologies. These villages will also serve as knowledge centres for nearby villages to adopt climate smart agricultural practices. I am delighted that the KVKs of Punjab have been able to convert more than twenty five such villages across the state to residue burning-free villages in a shot span of time. The experiences and learning from this important effort have been compiled in the form of a publication entitled "**Inspiring 25 Villages of Punjab – Journey towards Zero Residue Burning**". This document presents the efforts made by KVKs in achieving the complete respite from the menace of residue burning and now can be out-scaled to various other parts of Punjab where burning is still prevalent.

I congratulate all the KVKs whose persistent efforts in participatory mode have led to achieve zero burning in various villages. ICAR-ATARI, Ludhiana deserves appreciation for this vital initiative to spread this most desired and convincing message. Such efforts should be highlighted on a bigger canvas to motivate and encourage village *panchayats* to come forward and adopt the model of theses villages to achieve zero residue burning.

(T. MOHAPATRA)

Dated the 26th July, 2018
New Delhi

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MESSAGE

The intensifying problem of crop residue burning, particularly in the North-Western states of India, has alarmed people from all walks of life. Krishi Vigyan Kendras (KVKs) are in the forefront in sensitizing the farmers and other stakeholders about the ill effects of residue burning. KVKs organize different awareness programmes to motivate farmers to not burn the residues themselves and to demotivate others too as well as to opt for alternative residue management techniques. KVKs actively collaborated with the State Department of Agriculture and other government and non-government institutions and organizations to convince farmers to quit the practice of crop residue burning. The mass movement initiated by the KVKs at the grass root level against crop residue burning has received wider attention.

ICAR-Agricultural Technology Application Research Institute (ICAR-ATARI), Ludhiana has come out with a publication "Inspiring 25 Villages of Punjab-Journey Towards Zero Residue Burning", which will inspire to develop more such villages and the wave would reach to each corner of Punjab where stubble burning is prevalent.

I am happy to see the efforts and dedication of KVKs in transforming modern agriculture into climate resilient agriculture. I compliment the authors as well as contributors for bringing out this publication which will help in reducing crop residue burning

(A. K. Singh)

PREFACE

Over last few years, crop residue burning has emerged as one of the most serious threat not only to the sustainability of agriculture in Indo-Gangetic plain region but also to health of humans, animals and soil. Its repercussions have equally alerted the stakeholders of agriculture as well as the common citizens of the nation. Available technological options were either costly or inaccessible or were unable to provide the ease in residue management like the burning does. Resistance shown by the farmers has proven strict legal actions against the offenders to be ineffective in controlling the events of residue burning. Thus, the overall scenario depicts that the change has to be brought out in the mindset of farmers along with other measures taken to control residue burning.

ICAR-ATARI, Ludhiana bestowed its Krishi Vigyan Kendra (KVKs) the responsibility of developing model villages and role model farmers to popularize residue management technologies. The principle behind the strategy was "*a satisfied customer is the best advertisement*". KVKs organized trainings, demonstrations, farmer-scientist interface meetings, awareness rallies etc. to encourage adoption of residue management technologies and develop confidence among farming community about their performance and reliability. Focused efforts of KVKs gave fruitful results in the form of twenty five residue burning free villages. It has once again proven that the KVKs are the resource centres and knowledge hubs of agriculture at district level and the same is true when it comes to crop residue management.

It gives immense pleasure to present the bulletin titled "Inspiring 25 Villages of Punjab-Journey Towards Zero Residue Burning" which gives the accounts of the efforts of KVKs in molding the village situations to establish them as zero residue burning villages. We extend my sincere gratitude towards Dr. T. Mohapatra, Secreatary DARE and DG, ICAR, Dr. A. K. Singh, DDG (Agricultural Extension) and Dr. B. S. Dhillon, VC, PAU, Ludhiana for their guidance and constant motivation.

We are grateful to the Directors of Extension Education of PAU and TEAM KVK of Punjab for this achievement and contributors for their help in bringing out this publication. We duly acknowledge the sincere hard work put by the editorial board and scientists of ATARI for bringing this important document in usable form. We would like to specifically thank Dr. Devinder Tiwari, Dr. Ajaib Singh and Mr. Kanav Sadawarti for their assistance in bringing out this publication.

Last but not the least, We must thank the project "NICRA" for the financial support during the intervention phase. NICRA project marked the beginning of the efforts to effectively manage the crop residue and develop scientific temper among the farmers in building climate resilient agriculture. The demonstrational sites have been serving as model farms to witness the impact of scientific residue management practices.

Authors

INTRODUCTION

Natural resource degradation coupled with increasing intensity of climate variability is one of the major challenges for food security and livelihoods of millions of farm families. Among different natural resource management related challenges in heartlands of Green Revolution and the Food Bowl of country; i.e., North-West India, burning crop residues (major portion of rice and stubbles of wheat) has not only been leading to losses of nutrients, soil biodiversity but also contributing significantly to global warming as well as respiratory diseases to human beings. Punjab and Haryana are the most predominant states of the country for wheat and rice production as well as crop residue burning.

Krishi Vigyan Kendras (KVKs) of PAU, Ludhiana, Punjab, under the umbrella of Agricultural Technology Application Research Institute (ICAR-ATARI), Ludhiana, have been in the fore front in sensitizing the farmers and other stakeholders about the ill effects of residue burning. KVKs organize activities throughout the year and more specifically during the harvesting seasons of wheat and paddy crops with the objectives to create awareness about the ill effects of residue burning on environmental, soil and human health and to demonstrate available residue management technologies. KVKs conduct demonstrations, trainings, awareness camps, TV-radio talks, field visits, *kisan sammelans*, *kisan gosthis*, farmers-scientists interactions, etc. to meet stated objectives. The mass movement initiated by the ICAR-ATARI, Ludhiana at the grass root level against crop residue burning is receiving wider attention.

Genesis

ICAR-ATARI, Ludhiana, with the initiation of ICAR's National Innovations in Climate Resilient Agriculture (NICRA) project, planned to develop climate smart villages in the states of Zone-I. Thus, addressing one of the most prominent issues of agricultural sustainability i.e. crop residue burning was specifically taken up by the KVKs of Punjab and Haryana since 2013-14. Demonstrations on Happy Seeder and other residue management technologies were conducted with focused and untiring efforts. Simultaneously, capacity building programs and other extension activities were organized in a systematic fashion. Custom Hiring Centres were also established in the villages for ready

access of farmers to the farm machinery. Village Climate Risk Management Committees were formed in the villages to ensure farmers' participation in the project. Resultantly during 2016-17, all the NICRA villages of Punjab and Haryana were completely freed from residue burning and 42 nearby villages reported very less burning. Now, these villages and its farmers serve as role models for others who are still engaged in residue burning.

Mass Awareness Campaign against Residue Burning

Mass awareness campaign is operationalized since 2015 during the months of April-May (wheat harvesting) and October-November (paddy harvesting) to sensitize all the stakeholders about the seriousness of the issue and available technologies for residue management. Thus, more than 50,000 farmers and other stakeholders are contacted every year through trainings, *kisan melas*, *kisan sammelan*, *kisan goshthies*, group meetings with *panchayat* members, harvest day celebrations, *sandhya pheries*, various competitions for school and college students etc. Similarly, more than five lakh advisories & literature were released/distributed. About 22 TV talks and 27 radio talks were delivered by the KVK scientists. A team of experts from ATARI, Ludhiana and KVKs participated in the programme ''वाद संवाद (धान का धुआं)'' telecasted on 05.11.2016 on DD KISAN, in which a detailed discussion was held on the seriousness of the residue burning problem and how to effectively and efficiently manage the crop residues. Similarly, DD KISAN also aired ''विचार विमर्श पराली की इस परेशानी को तकनीकी की मदद से खुशहाली में कैसे बदला जा सकता है'' on 13.10.2017 and 16.10.2017 in which Director, ATARI and scientists from KVKs participated. KVKs also organized Harvest Field Day at the demonstration sites of wheat sown with Happy Seeder to educate and convince farmers about the multi-benefits of combo technology of Super Straw Management System (Super-SMS) and Happy Seeder. More than 10,000 farmers were mobilized in this programme. The salient experimental sites were also captured in collaboration with DD KISAN entitled as ''खेत के अवशेष खेत में''. This programme was broadcasted in two series on DD KISAN on 31st May 2018 and 1st June 2018.

School and college students were specifically targeted as potential stakeholders under the campaign. KVKs motivated students to influence their farmer parents, neighbors and

villagers to give up the practice of residue burning and adopt different residue management technologies. KVK delivered lectures in schools, organized poster making and slogan writing competitions, conducted rallies in the villages with school children during harvesting season. Many students participated in the rallies enthusiastically and raised slogans to spread awareness about the bad effects of burning residues and educated people about alternative residue management strategies through the distribution of pamphlets.

ICAR-ATARI, Ludhiana has also organized a series of 'Stakeholders' Meetings on Residue Management" to deliberate on focused issues. A "Stakeholders' Meet on Residue Management" was organized on 17th October 2017 to outline an action plan on residue management in the region. Similarly, a Stakeholder Dialogue on "Sharing Key Learnings on Sustainable and Scalable Solutions for Rice Residue Management" was organized on 15th March, 2018 by ICAR-ATARI, Ludhiana. One such workshop was held on 26th March 2016 on the issue of preparedness strategies for "Promotion of Mechanization for In-situ Management of Crop Residue" with PCs of KVKs of Punjab, Haryana & Western UP. These stakeholders meeting and dialogue were organized at certain interval to document the true feedback so as to be used as feed forward mechanism for improvement in the strategy of the campaign.

Strategy towards Zero-Burning Villages

ICAR-ATARI, Ludhiana with its KVKs and their host institutes formulated a strategy to stop the menace of residue burning and make villages residue burn free. The lessons learnt from NICRA experiences have helped a lot while designing the roadmap for effective residue management of villages of Punjab.

According to the strategy, large scale method and result demonstrations were conducted in the KVK farms as well as farmers' fields to impart skills in operating farm machineries like happy seeder and to show the impact of retention and incorporation of residues in the field itself. Demonstrations on Happy Seeder sown wheat were laid out in 87 villages on an area of 1692 ha during 2015-16 and in 133 villages on 2406 ha area during 2016-17. Exposure visits to nearby NICRA villages were organized for the farmers to enable them to learn from the experiences of peer farmers and witness the outcomes.

Furthermore, ICAR-ATARI, Ludhiana made it sure that there should be at least one Happy Seeder in each

KVK and now, all the KVKs in Punjab have their own Happy Seeder. KVKs were driven to focus on the clusters of 2-3 villages at a time. Every KVK conducted demonstrations on Happy Seeder sown wheat at KVK farm as well as in farmers' fields. It was also ensured that there should be no burning at the KVK farm in any case, thus KVKs have not allowed any burning on their farm and adjoining area for last five years.

KVKs were specifically given target to make one village residue burning free at a time. As a result, now, there are at least 25 villages where the extent of crop residue burning has reduced to almost nil and detail of this endeavor has been discussed in this publication.

Convergence is the Key

Collaborative efforts are must to bring about significant changes at larger scale. Diverse expertise and resource endowments enable different actors in the field to contribute their bit to the larger common objective. Considering the necessity of united endeavors to transform the way residue was being managed in villages all relevant organizations, institutions, government bodies etc. were the integral part of the strategy. Thus, ICAR-ATARI, Ludhiana, Directorate of Ext. Edu., PAU and the KVKs regularly teamed up with the scientists of PAU, Directors (Agriculture) of Governments of Punjab and Haryana, Farmer Commissions of Punjab and Haryana, State Agricultural Department of Punjab and Haryana, International institutes like CIMMYT-BISA, Cooperative Societies, Farmers Organizations, Farmers Clubs, Corporate Bodies etc. Noted environmentalists, religious leaders, opinion leaders etc. have helped in mobilizing farmers. Local machine manufacturers were involved in different programmes to address field issues.

Moreover, different print and electronic media were also roped in to highlight the seriousness of the issue of residue burning and the ways to tackle the same. All India Radio (AIR) and DD KISAN were the regular partners in highlighting the efforts being made to curb residue burning. Thus, the residue burning free villages are the product of partnership between different stakeholders and every actor, public or private, had a vital and unique role to play.

The Pathway of Residue Management

In the beginning, NICRA villages were targeted for up scaling residue management technologies so that the results can be out-scaled on large areas. NICRA villages acted as model villages and become the knowledge centres/hubs. Looking at the response from farmers, KVKs organized special programs in NICRA villages to make a dent in the activities of these villages. At first, a workshop of NICRA project was organized to finalize the technical programme of all KVKs in which emphasis was given to saturate the whole village with climate resilient technologies. The climate resilient technologies like sowing with zero tillage/happy seeder, chopper-cum-shredder etc. were emphasized to be spread in the entire village before moving on to adjoining villages in a cluster mode.

Further, special efforts were made to strengthen the Custom hiring Centres of village through Village Climate Risk Management Committee (VCRMC). Likewise, comprehensive demonstrations were planned on zero tillage and happy seeder by retaining rice residue on field. All out efforts were made to convince farmers about the effectiveness of these climate smart technologies with special reference to residue management on one hand and to educate farmers and other stakeholders through capacity development on the other hand. Action Plan for each NICRA village was executed by a multi-disciplinary team of scientists of KVKs in a participatory mode.

NICRA villages under paddy-wheat cropping system Punjab & Haryana

State	District	Name of village
Punjab	Bathinda	Kill Nihal Singh
	Faridkot	Pindi Balochan
	Fatehgarh Sahib	Badauchhi Kalan
	Ropar	Fatehgarh Viran
Haryana	Yamunanagar	Radauri

Pindi Balochan, Faridkot

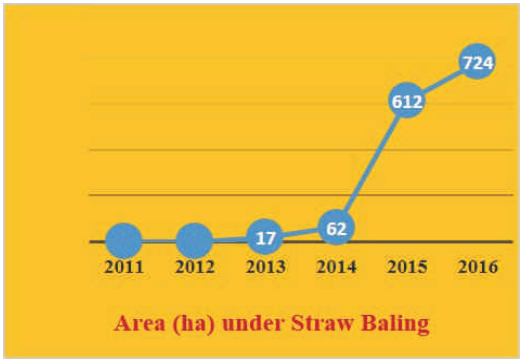
Pindi Blochan village of Faridkot has about 1050 hectare of cultivable land, out of which 711 hectares is under paddy cultivation. In 2012, demonstrations on zero tillage/happy seeder were demonstrated in about 8 hectare after harvesting of paddy.

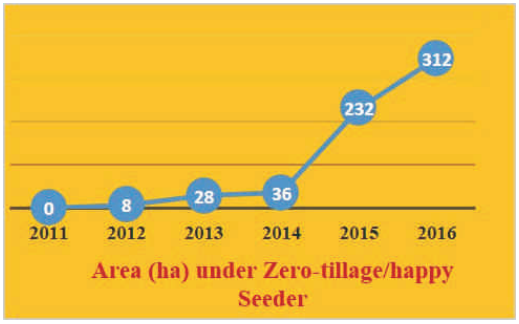
Slowly and steadily, the areas under ZT/HS increased and reached to 312 hectare in the village in 2016. Field days and other extension activities were conducted consistently in the village. Now the area under ZT/HS is further increasing, as more and more farmers are adopting this technology as shown in Fig. Similarly, demonstration of Baler was exhibited in 17 hectares in 2013 which increased to 724 hectare in 2016 as shown in Fig. During different

Brief Description of the Village:

Name of the Village	Pindi Blochan
Block	Faridkot
District	Faridkot
Total Population	1632
No. of Animals	920
Geographical Area	1320 ha
Cultivated Area	1050 ha
Total Irrigated Area	100%

capacity building programmes, farmers were made aware about the ill effects of residue burning and farmers are very well aware about the in-situ management of residue and incorporate the residue in field with the help of rotovators. In Pindi Blochan village around 230 hectares is under incorporation of residue. The machinery



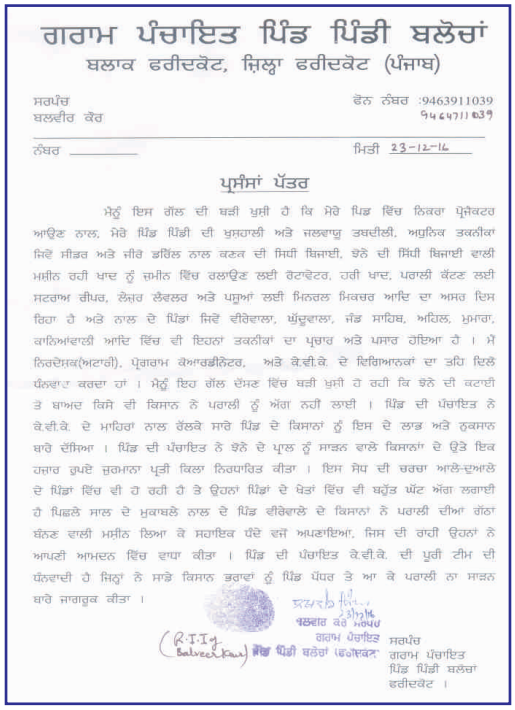


provided through NICRA project started showing good results and now some farmers have come forward to purchase their own machinery and are using these on custom hiring basis.

In 2016, the whole village came forward and declared that Pindi Blochan

Demonstration on Happy Seeder

is not burning any residue and later on Sarpanch of the village declared it burning free village as there was no burning in the village. Further, the farmers from adjoining villages are also visiting this village to observer the effect of these technologies and also following the footsteps of Pindi Blochan. Around 7 villages adjoining Pindi Blochan viz., Mehmuana, Aulakh, Sikhanwala, Bhag Thalan, Chahal, Kot Sukhiya, Mutta are



ਗਰਾਮ ਪੰਚਾਇਤ ਪਿੰਡ ਪਿੰਡੀ ਬਲੋਚਾਂ
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ਨੰਬਰ _____

ਮਿਤੀ 23-12-16

ਪ੍ਰਸੰਸਾ ਪੱਤਰ

ਮੈਨੂੰ ਇਸ ਗੱਲ ਦੀ ਬੜੀ ਖੁਸ਼ੀ ਹੈ ਕਿ ਮੇਰੇ ਪਿੰਡ ਵਿੱਚ ਨਿਕਰਾ ਪ੍ਰੋਜੈਕਟਰ ਆਉਣ ਨਾਲ, ਮੇਰੇ ਪਿੰਡ ਪਿੰਡੀ ਦੀ ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ, ਅਧੁਨਿਕ ਤਕਨੀਕਾਂ ਜਿਵੇਂ ਸੀਡਰ ਅਤੇ ਜੀਰੋ ਡਰਿੱਲ ਨਾਲ ਕਣਕ ਦੀ ਸਿੱਧੀ ਬਿਜਾਈ, ਝੋਨੇ ਦੀ ਸਿੱਧੀ ਬਿਜਾਈ ਵਾਲੀ ਮਸ਼ੀਨ ਰਹੀ ਖਾਦ ਨੂੰ ਜ਼ਮੀਨ ਵਿੱਚ ਰਲਾਉਣ ਲਈ ਰੋਟਾਵੇਟਰ, ਹਰੀ ਖਾਦ, ਪਰਾਲੀ ਕੱਟਣ ਲਈ ਸਟਰਾਅ ਰੀਪਰ, ਲੇਜ਼ਰ ਲੈਵਲਰ ਅਤੇ ਪਸ਼ੂਆਂ ਲਈ ਮਿਨਰਲ ਮਿਕਚਰ ਆਦਿ ਦਾ ਅਸਰ ਦਿਸ ਰਿਹਾ ਹੈ ਅਤੇ ਨਾਲ ਦੇ ਪਿੰਡਾਂ ਜਿਵੇਂ ਵੀਰੇਵਾਲਾ, ਬੁੱਦੂਵਾਲਾ, ਜੰਡ ਸਾਹਿਬ, ਅਹਿਲ, ਮੁਮਾਰਾ, ਕਾਨਿਆਂਵਾਲੀ ਆਦਿ ਵਿੱਚ ਵੀ ਇਹਨਾਂ ਤਕਨੀਕਾਂ ਦਾ ਪ੍ਰਚਾਰ ਅਤੇ ਪਸਾਰ ਹੋਇਆ ਹੈ । ਮੈਂ ਨਿਰਦੇਸ਼ਕ(ਅਟਾਰੀ), ਪ੍ਰੋਗਰਾਮ ਕੋਆਰਡੀਨੇਟਰ, ਅਤੇ ਕੇ.ਵੀ.ਕੇ. ਦੇ ਵਿਗਿਆਨਕਾਂ ਦਾ ਤਹਿ ਦਿਲੋਂ ਧੰਨਵਾਦ ਕਰਦਾ ਹਾਂ । ਮੈਨੂੰ ਇਹ ਗੱਲ ਦੱਸਣ ਵਿੱਚ ਬੜੀ ਖੁਸ਼ੀ ਹੋ ਰਹੀ ਕਿ ਝੋਨੇ ਦੀ ਕਟਾਈ ਤੇ ਬਾਅਦ ਕਿਸੇ ਵੀ ਕਿਸਾਨ ਨੇ ਪਰਾਲੀ ਨੂੰ ਅੱਗ ਨਹੀਂ ਲਾਈ । ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਨੇ ਕੇ.ਵੀ.ਕੇ. ਦੇ ਮਾਹਿਰਾਂ ਨਾਲ ਰੱਲਕੇ ਸਾਰੇ ਪਿੰਡ ਦੇ ਕਿਸਾਨਾਂ ਨੂੰ ਇਸ ਦੇ ਲਾਭ ਅਤੇ ਨੁਕਸਾਨ ਬਾਰੇ ਦੱਸਿਆ । ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਨੇ ਝੋਨੇ ਦੇ ਪਾਲ ਨੂੰ ਸਾੜਨ ਵਾਲੇ ਕਿਸਾਨਾਂ ਦੇ ਉਤੇ ਇਕ ਹਜ਼ਾਰ ਰੁਪਏ ਜੁਰਮਾਨਾ ਪ੍ਰਤੀ ਕਿਲਾ ਨਿਰਧਾਰਿਤ ਕੀਤਾ । ਇਸ ਸੋਚ ਦੀ ਚਰਚਾ ਆਲੇ-ਦੁਆਲੇ ਦੇ ਪਿੰਡਾਂ ਵਿੱਚ ਵੀ ਹੋ ਰਹੀ ਹੈ ਤੇ ਉਹਨਾਂ ਪਿੰਡਾਂ ਦੇ ਖੇਤਾਂ ਵਿੱਚ ਵੀ ਬਹੁੱਤ ਘੱਟ ਅੱਗ ਲਗਾਈ ਹੈ ਪਿਛਲੇ ਸਾਲ ਦੇ ਮੁਕਾਬਲੇ ਨਾਲ ਦੇ ਪਿੰਡ ਵੀਰੇਵਾਲੇ ਦੇ ਕਿਸਾਨਾਂ ਨੇ ਪਰਾਲੀ ਦੀਆਂ ਗੱਠਾਂ ਬੰਨਣ ਵਾਲੀ ਮਸ਼ੀਨ ਲਿਆ ਕੇ ਸਹਾਇਕ ਧੰਦੇ ਵਜੋਂ ਅਪਣਾਇਆ, ਜਿਸ ਦੀ ਰਾਹੀ ਉਹਨਾਂ ਨੇ ਆਪਣੀ ਆਮਦਨ ਵਿੱਚ ਵਾਧਾ ਕੀਤਾ । ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਕੇ.ਵੀ.ਕੇ. ਦੀ ਪੂਰੀ ਟੀਮ ਦੀ ਧੰਨਵਾਦੀ ਹੈ ਜਿਨ੍ਹਾਂ ਨੇ ਸਾਡੇ ਕਿਸਾਨ ਭਰਾਵਾਂ ਨੂੰ ਪਿੰਡ ਪੱਧਰ ਤੇ ਆ ਕੇ ਪਰਾਲੀ ਨਾ ਸਾੜਨ ਬਾਰੇ ਜਾਗਰੂਕ ਕੀਤਾ ।

ਸਰਪੰਚ
ਗਰਾਮ ਪੰਚਾਇਤ
ਪਿੰਡ ਪਿੰਡੀ ਬਲੋਚਾਂ
ਫਰੀਦਕੋਟ ।

Certificate of appreciation by Sarpanch

also using ZT/HS for sowing of the wheat in standing residue. Moreover, KVK, Faridkot is also demonstrating these technologies in these villages and the area under ZT/HS is increasing day by day. During field days organized by KVK, farmers from these villages are also invited for interaction and sharing the experiences of these trails. Now, farmers to farmers extension is taking place and more and more villages are convinced about the beneficial uses of climate resilient technologies.

Contributors:
Rakesh Kumar, Jagdish Grover, Gurdarshan Singh and Sukhwinder Singh

Killi Nihal Singh Wala, Bathinda

Killi Nihal Singhwala village of Bathinda has around 810 hectare of cultivable land out of which 755 hectares in under paddy. Traditionally, farmers in this village were burning residue after harvest of paddy; however, some farmers were incorporating the

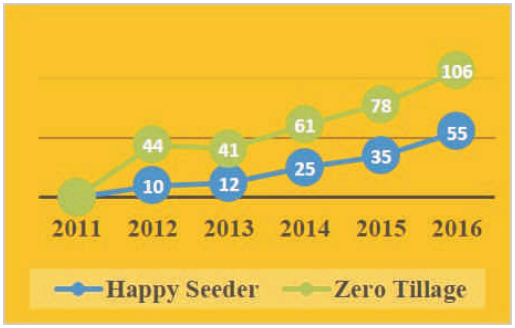
residue in soil and cultivate wheat and some other crops. Efforts were made to demonstrate the technologies which can be adopted by farmers and technologies of happy seeder and balers were demonstrated in the villages. In 2012, demonstrations on happy seeder were conducted in about 10 ha after harvesting of paddy. In some of the trails, the yield of wheat was at par with traditional method, however, in some demonstrations, the production was 4-7% higher in happy seeder sown wheat.

Demonstration on Happy Seeder

Field days and other capacity development programmes were conducted and many farmers were convinced with the positive results of happy seeder but availability of Happy seeder is the major constraint in

Brief Description of the Village:

Name of the Village	Killi Nihal Singh Wala
Block	Bathinda
District	Bathinda
Total Population	4400
No. of Animals	470
Geographical Area	905 ha
Cultivated Area	810 ha
Total Irrigated Area	100%

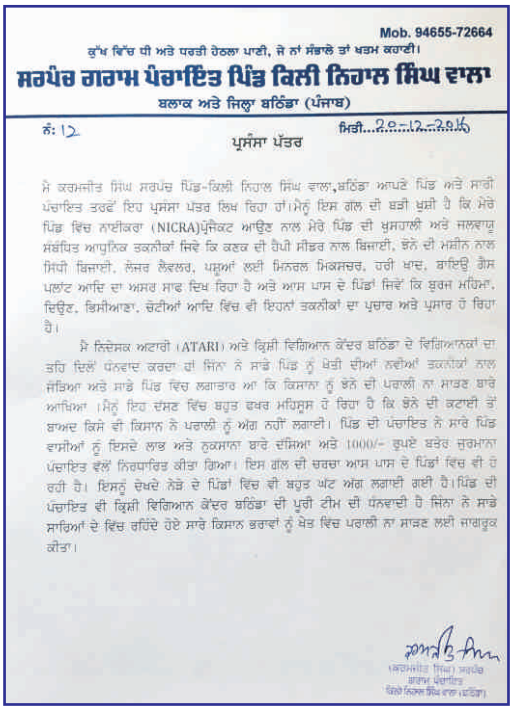


increasing the area under this technology. Looking into the benefits, the area in successive years reached to more than 55 hectares in 2016.

Demonstration on Baler-cum-knotter

Similarly, area under zero till drill increased to more than 106 ha. Demonstration of Baler cum knotter and chopper cum spreader were demonstrated in 45 and 10 hectares

respectively which increased to 105 and 95 ha in 2016 as presented in Figure. Earlier, few farmers (22 ha area) of Killi Nihalsingh Wala were incorporating the residue with the help of disc ploughs or rotavators which now has increased to more than 125 ha.



Mob. 94655-72664

ਕੁੱਖ ਵਿੱਚ ਧੀ ਅਤੇ ਧਰਤੀ ਹੇਠਲਾ ਪਾਣੀ, ਜੇ ਨਾਂ ਸੰਭਾਲੇ ਤਾਂ ਖਤਮ ਕਰਾਣੀ।

ਸਰਪੰਚ ਗਰਾਮ ਪੰਚਾਇਤ ਪਿੰਡ ਕਿਲੀ ਨਿਹਾਲ ਸਿੰਘ ਵਾਲਾ

ਬਲਾਕ ਅਤੇ ਜਿਲ੍ਹਾ ਬਠਿੰਡਾ (ਪੰਜਾਬ)

ਨੰ: 12 ਮਿਤੀ...20-12-2015

ਪ੍ਰਸੰਸਾ ਪੱਤਰ

ਮੈ ਕਰਮਜੀਤ ਸਿੰਘ ਸਰਪੰਚ ਪਿੰਡ-ਕਿਲੀ ਨਿਹਾਲ ਸਿੰਘ ਵਾਲਾ,ਬਠਿੰਡਾ ਆਪਣੇ ਪਿੰਡ ਅਤੇ ਸਾਰੀ ਪੰਚਾਇਤ ਤਰਫੋਂ ਇਹ ਪ੍ਰਸੰਸਾ ਪੱਤਰ ਲਿਖ ਰਿਹਾ ਹਾਂ।ਮੈਨੂੰ ਇਸ ਗੱਲ ਦੀ ਬੜੀ ਖੁਸ਼ੀ ਹੈ ਕਿ ਮੇਰੇ ਪਿੰਡ ਵਿਚ ਨਾਈਕਰਾ (NICRA)ਪ੍ਰੋਜੈਕਟ ਆਉਣ ਨਾਲ ਮੇਰੇ ਪਿੰਡ ਦੀ ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਜਲਵਾਯੂ ਸੰਬੰਧਿਤ ਆਧੁਨਿਕ ਤਕਨੀਕਾਂ ਜਿਵੇ ਕਿ ਕਣਕ ਦੀ ਹੈਪੀ ਸੀਡਰ ਨਾਲ ਬਿਜਾਈ, ਝੋਨੇ ਦੀ ਮਸ਼ੀਨ ਨਾਲ ਸਿੱਧੀ ਬਿਜਾਈ, ਲੇਜਰ ਲੈਵਲਰ, ਪਸ਼ੂਆਂ ਲਈ ਮਿਨਰਲ ਮਿਕਸਚਰ, ਹਰੀ ਖਾਦ, ਬਾਇਉ ਗੈਸ ਪਲਾਂਟ ਆਦਿ ਦਾ ਅਸਰ ਸਾਫ ਦਿਖ ਰਿਹਾ ਹੈ ਅਤੇ ਆਸ ਪਾਸ ਦੇ ਪਿੰਡਾਂ ਜਿਵੇਂ ਕਿ ਬੁਰਜ ਮਹਿਮਾ, ਦਿਉਣ, ਭਿਸੀਆਣਾ, ਚੋਟੀਆਂ ਆਦਿ ਵਿੱਚ ਵੀ ਇਹਨਾਂ ਤਕਨੀਕਾਂ ਦਾ ਪ੍ਰਚਾਰ ਅਤੇ ਪ੍ਰਸਾਰ ਹੋ ਰਿਹਾ ਹੈ।

ਮੈ ਨਿਦੇਸਕ ਅਟਾਰੀ (ATARI) ਅਤੇ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਬਠਿੰਡਾ ਦੇ ਵਿਗਿਆਨਕਾਂ ਦਾ ਤਹਿ ਦਿਲੋਂ ਧੰਨਵਾਦ ਕਰਦਾ ਹਾਂ ਜਿੰਨਾ ਨੇ ਸਾਡੇ ਪਿੰਡ ਨੂੰ ਖੇਤੀ ਦੀਆਂ ਨਵੀਆਂ ਤਕਨੀਕਾਂ ਨਾਲ ਜੋੜਿਆ ਅਤੇ ਸਾਡੇ ਪਿੰਡ ਵਿਚ ਲਗਾਤਾਰ ਆ ਕਿ ਕਿਸਾਨਾ ਨੂੰ ਝੋਨੇ ਦੀ ਪਰਾਲੀ ਨਾ ਸਾੜਣ ਬਾਰੇ ਆਖਿਆ । ਮੈਨੂੰ ਇਹ ਦੱਸਣ ਵਿੱਚ ਬਹੁਤ ਫਖਰ ਮਹਿਸੂਸ ਹੋ ਰਿਹਾ ਹੈ ਕਿ ਝੋਨੇ ਦੀ ਕਟਾਈ ਤੋਂ ਬਅਦ ਕਿਸੇ ਵੀ ਕਿਸਾਨ ਨੇ ਪਰਾਲੀ ਨੂੰ ਅੱਗ ਨਹੀਂ ਲਗਾਈ। ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਨੇ ਸਾਰੇ ਪਿੰਡ ਵਾਸੀਆਂ ਨੂੰ ਇਸਦੇ ਲਾਭ ਅਤੇ ਨੁਕਸਾਨ ਬਾਰੇ ਦੱਸਿਆ ਅਤੇ 1000/- ਰੁਪਏ ਬਤੌਰ ਜੁਰਮਾਨਾ ਪੰਚਾਇਤ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਕੀਤਾ ਗਿਆ। ਇਸ ਗੱਲ ਦੀ ਚਰਚਾ ਆਸ ਪਾਸ ਦੇ ਪਿੰਡਾਂ ਵਿਚ ਵੀ ਹੋ ਰਹੀ ਹੈ। ਇਸਨੂੰ ਦੇਖਦੇ ਨੇੜੇ ਦੇ ਪਿੰਡਾਂ ਵਿਚ ਵੀ ਬਹੁਤ ਘੱਟ ਅੱਗ ਲਗਾਈ ਗਈ ਹੈ।ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਵੀ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਬਠਿੰਡਾ ਦੀ ਪੂਰੀ ਟੀਮ ਦੀ ਧੰਨਵਾਦੀ ਹੈ ਜਿੰਨਾ ਨੇ ਸਾਡੇ ਸਾਰਿਆਂ ਦੇ ਵਿੱਚ ਰਹਿੰਦੇ ਹੋਏ ਸਾਰੇ ਕਿਸਾਨ ਭਰਾਵਾਂ ਨੂੰ ਖੇਤ ਵਿੱਚ ਪਰਾਲੀ ਨਾ ਸਾੜਣ ਲਈ ਜਾਗਰੂਕ ਕੀਤਾ।

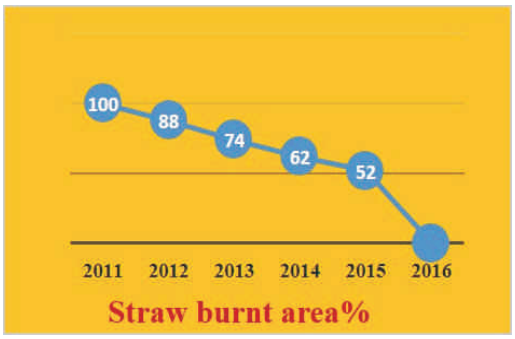
(ਕਰਮਜੀਤ ਸਿੰਘ) ਸਰਪੰਚ
ਗਰਾਮ ਪੰਚਾਇਤ
ਕਿਲੀ ਨਿਹਾਲ ਸਿੰਘ ਵਾਲਾ (ਬਠਿੰਡਾ)

Certificate of appreciation by Sarpanch

During various extension programmes conducted by KVK, Bathinda, many farmers from adjoining villages attended these programmes and were influenced by methods used by farmers of this village. On request of farmers of adjoining villages, KVK, Bathinda has also laid some method

Scientists explaining working of chopper-cum-shredder

Demonstration on Chopper



demonstrations in nearby villages like Naruana, Jai Singh Wala, Kot Shamir, Katar Singh Wala and many farmers are coming forward to adopt these technologies. In 2016, the sarpanch of village Killi Nihal Singhwala declared that village will not burn any residue and penalty will be imposed if anybody is indulged in burning residue. Consequently, farmers in the village didn't burn residue and efforts were made to use the residue in one or other form.

Contributors:
Jitender Singh Brar
Gurmeet Singh Dhillon
Parkash Singh Sidhu

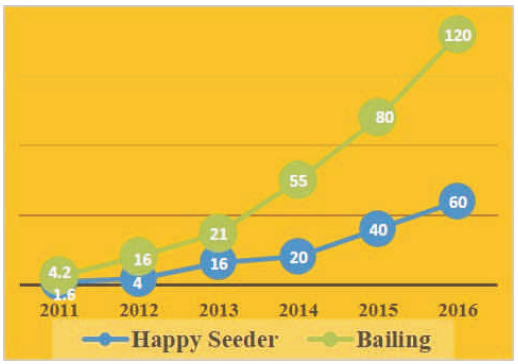
Badauchhi Kalan, Fatehgarh Sahib

Badauchhi Kalan village of Fatehgarh Sahib District of Punjab has 952 ha of cultivable land out of which 755 hectares is under paddy. Traditionally, farmers in this village were burning residue after harvest of paddy, however, some farmers were incorporating the residue in soil and cultivate wheat and some other crops. Efforts were made to demonstrate the technologies which can be adopted by farmers and technologies of happy seeder and balers were demonstrated in the villages.

Name of the Village	Badauchhi Kalan
Block	Sirhind
District	Fatehgarh Sahib
Total Population	1455
No. of Animals	1050
Geographical Area	1000 ha
Cultivated Area	952 ha
Irrigated Area	100%

In 2012, demonstrations on happy seeder were demonstrated in about 1.6 hectare area. The results were very encouraging and the area under happy seeder increased to 60 hectares in 2016. Similarly, demonstrations were laid out for bailing the residue and this practice increased to about 120 Hectare in the village. Farmers are incorporating the residue in soil with the help of rotovator/ploughing in more than 290 Hectare area. Farmers are also convinced to remove the residue manually and residue is being collected and used for animal feed in more than

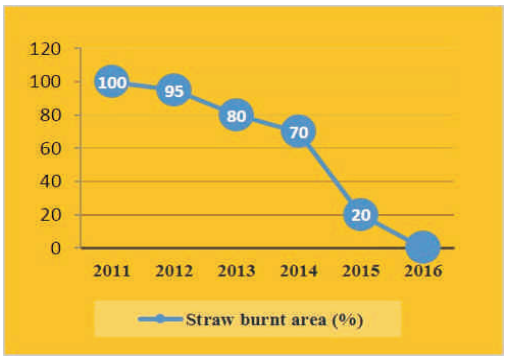
Sowing Wheat with Happy Seeder

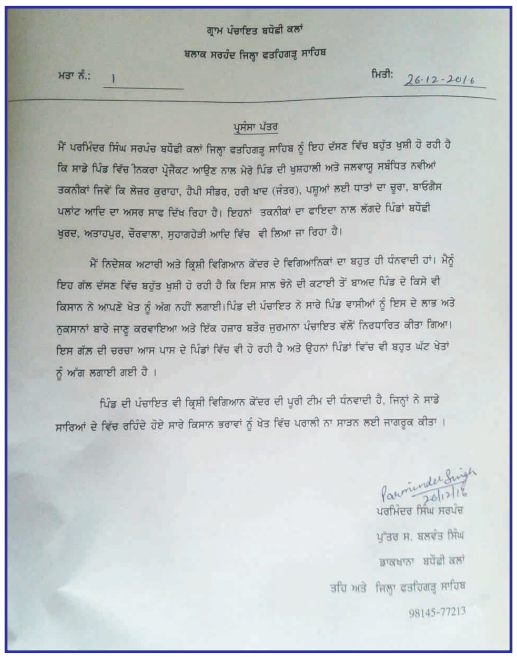


110 Hectare. Looking into the results, Sarpanch declared that there was no burning in this village during 2016. To

Germinated Wheat Sown with Happy Seeder

highlight these results of Badauchhi Kalan village, KVK, Fatehgarh is organising various awareness





ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਬਧੌਛੀ ਕਲਾਂ

ਬਲਾਕ ਸਰਹੰਦ ਜਿਲ੍ਹਾ ਫਤਹਿਗੜ੍ਹ ਸਾਹਿਬ

ਮਤਾ ਨੰ.: 1 ਮਿਤੀ: 26-12-2016

ਪ੍ਰਸੰਸਾ ਪੱਤਰ

ਮੈਂ ਪਰਮਿੰਦਰ ਸਿੰਘ ਸਰਪੰਚ ਬਧੌਛੀ ਕਲਾਂ ਜਿਲ੍ਹਾ ਫਤਹਿਗੜ੍ਹ ਸਾਹਿਬ ਨੂੰ ਇਹ ਦੱਸਣ ਵਿੱਚ ਬਹੁੱਤ ਖੁਸ਼ੀ ਹੋ ਰਹੀ ਹੈ ਕਿ ਸਾਡੇ ਪਿੰਡ ਵਿੱਚ ਜੈਕਰਾ ਪ੍ਰੋਜੈਕਟ ਆਉਣ ਨਾਲ ਮੇਰੇ ਪਿੰਡ ਦੀ ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਜਲਵਾਯੂ ਸੰਬੰਧਿਤ ਨਵੀਆਂ ਤਕਨੀਕਾਂ ਜਿਵੇਂ ਕਿ ਲੇਜ਼ਰ ਕੁਰਾਹਾ, ਹੈਪੀ ਸੀਡਰ, ਹੜੀ ਖਾਦ (ਜੱਤਰ), ਪਸ਼ੂਆਂ ਲਈ ਧਾਤਾਂ ਦਾ ਚੂਰਾ, ਬਾਓਗੈਸ ਪਲਾਂਟ ਆਦਿ ਦਾ ਅਸਰ ਸਾਫ ਦਿੱਖ ਰਿਹਾ ਹੈ। ਇਹਨਾਂ ਤਕਨੀਕਾਂ ਦਾ ਫਾਇਦਾ ਨਾਲ ਲੱਗਦੇ ਪਿੰਡਾਂ ਬਧੌਛੀ ਖੁਰਦ, ਅਤਾਹਪੁਰ, ਚੌਰਵਾਲਾ, ਸੁਹਾਗਹੇੜੀ ਆਦਿ ਵਿੱਚ ਵੀ ਲਿਆ ਜਾ ਰਿਹਾ ਹੈ।

ਮੈਂ ਨਿਦੇਸ਼ਕ ਅਟਾਰੀ ਅਤੇ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਦੇ ਵਿਗਿਆਨਿਕਾਂ ਦਾ ਬਹੁਤ ਹੀ ਧੰਨਵਾਦੀ ਹਾਂ। ਮੈਨੂੰ ਇਹ ਗੱਲ ਦੱਸਣ ਵਿੱਚ ਬਹੁੱਤ ਖੁਸ਼ੀ ਹੋ ਰਹੀ ਹੈ ਕਿ ਇਸ ਸਾਲ ਝੋਨੇ ਦੀ ਕਟਾਈ ਤੋਂ ਬਾਅਦ ਪਿੰਡ ਦੇ ਕਿਸੇ ਵੀ ਕਿਸਾਨ ਨੇ ਆਪਣੇ ਖੇਤ ਨੂੰ ਅੱਗ ਨਹੀਂ ਲਗਾਈ। ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਨੇ ਸਾਰੇ ਪਿੰਡ ਵਾਸੀਆਂ ਨੂੰ ਇਸ ਦੇ ਲਾਭ ਅਤੇ ਨੁਕਸਾਨਾਂ ਬਾਰੇ ਜਾਣੂ ਕਰਵਾਇਆ ਅਤੇ ਇੱਕ ਹਜ਼ਾਰ ਬਤੌਰ ਜੁਰਮਾਨਾ ਪੰਚਾਇਤ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਕੀਤਾ ਗਿਆ। ਇਸ ਗੱਲ ਦੀ ਚਰਚਾ ਆਸ ਪਾਸ ਦੇ ਪਿੰਡਾਂ ਵਿੱਚ ਵੀ ਹੋ ਰਹੀ ਹੈ ਅਤੇ ਉਹਨਾਂ ਪਿੰਡਾਂ ਵਿੱਚ ਵੀ ਬਹੁਤ ਘੱਟ ਖੇਤਾਂ ਨੂੰ ਅੱਗ ਲਗਾਈ ਗਈ ਹੈ।

ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਵੀ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਦੀ ਪੂਰੀ ਟੀਮ ਦੀ ਧੰਨਵਾਦੀ ਹੈ, ਜਿਨ੍ਹਾਂ ਨੇ ਸਾਡੇ ਸਾਰਿਆਂ ਦੇ ਵਿੱਚ ਰਹਿੰਦੇ ਹੋਏ ਸਾਰੇ ਕਿਸਾਨ ਭਰਾਵਾਂ ਨੂੰ ਖੇਤ ਵਿੱਚ ਪਰਾਲੀ ਨਾ ਸਾੜਨ ਲਈ ਜਾਗਰੂਕ ਕੀਤਾ।

Parminder Singh
26/12/16

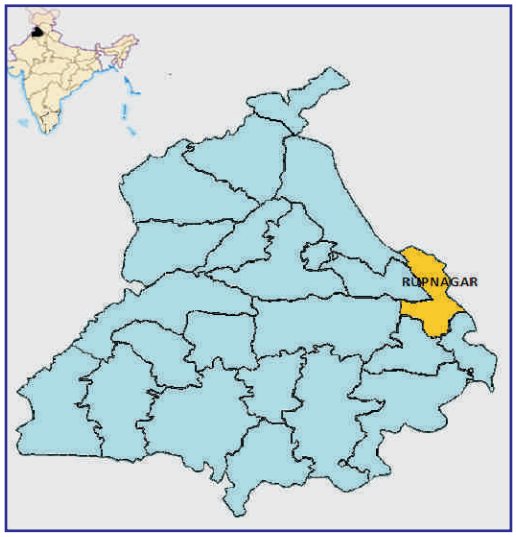
ਪਰਮਿੰਦਰ ਸਿੰਘ ਸਰਪੰਚ
ਪੁੱਤਰ ਸ. ਬਲਵੰਤ ਸਿੰਘ
ਡਾਕਖਾਨਾ ਬਧੌਛੀ ਕਲਾਂ
ਤਹਿ ਅਤੇ ਜਿਲ੍ਹਾ ਫਤਹਿਗੜ੍ਹ ਸਾਹਿਬ
98145-77213

programmes in this village and also in adjoining villages like Sadhugarh, Mmahadian, Kotla, Boran, Mandofal, Attewali, Buchre, Salana dara singh, Salana Jiwam Singh, Bronga Zer, Tooran, Bronga Buland Slani, Ghumandgarh, Mullanpur, Jalalpur, Rattanpalon, Harbanspura. These villages have also adopted these technologies for residue management

Contributors:
Vipan Kumar Rampal,
Arvind Preet Kaur
Satvir Kaur

Fatehgarh Viran, Ropar

KVK, Ropar has adopted four villages namely, Fatehgarh Viran, Rashidpur, Rampur Fasse and Mohan Majra under NICRA project. However, Fatehgarh Viran is selected for piloting the residue management whereas other villages were also covered in these interventions. In 2013, KVK, Ropar demonstrated the technologies like happy seeder for management of residue in about 5.5 hectare in Fatehgargh Viran which rose to more than 29 hectare. The average yield of Happy seeder sown wheat was 47.5 q/ha as compared to conventional method of sowing wheat (45 q/ha) which attracted the farmers to adopt this technology. KVK also introduced chopper in 2013 and area

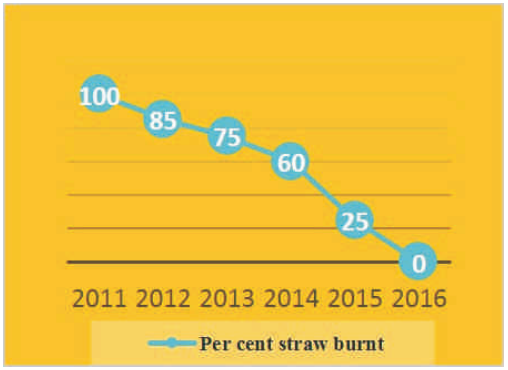


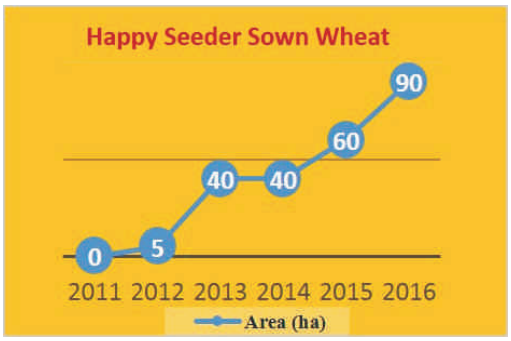
Sowing Wheat in Standing Paddy Straw

Wheat at 30 DAS

Brief Description of the Village:

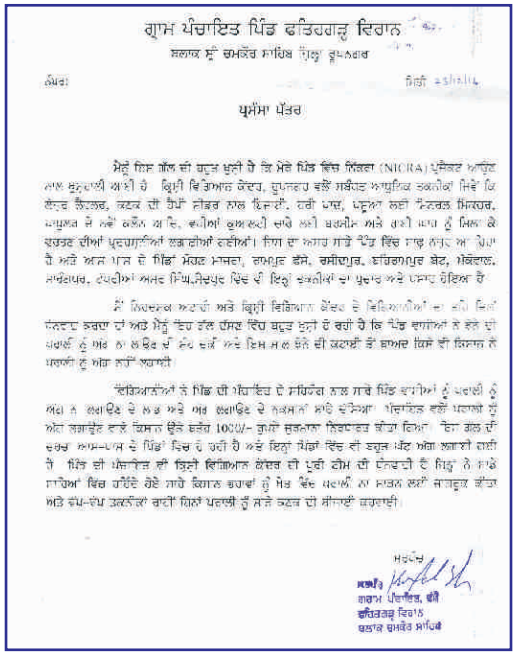
Name of the Village	Fatehgarh Viran
Block	Chamkaur Sahib
District	Ropar
Total Population	450
No. of Animals	488
Geographical Area	79
Cultivated Area	68
Total Irrigated Area	100%





under chopper has increased to 32 hectare. During awareness programme organised by KVK, farmers were convinced not to burn the residue, rather utilize it for many purposes.

Farmer-Scientist interaction



ਗ੍ਰਾਮ ਪੰਚਾਇਤ ਪਿੰਡ ਫਤਿਹਗੜ੍ਹ ਵਿਰਾਨ

ਸਲਾਨਾ ਸ੍ਰੀ ਚਮਕੌਰ ਸਾਹਿਬ ਜ਼ਿਲ੍ਹਾ ਰੂਪਨਗਰ

ਮਿਤੀ

ਪ੍ਰਸੰਸਾ ਪੱਤਰ

ਮੈਨੂੰ ਇਸ ਗੱਲ ਦੀ ਬਹੁਤ ਖੁਸ਼ੀ ਹੈ ਕਿ ਮੇਰੇ ਪਿੰਡ ਵਿੱਚ ਨਿੱਕਰਾ (NICRA) ਪ੍ਰੋਜੈਕਟ ਅਧੀਨ ਮੁਫ਼ਤਖੀ ਆਈ ਹੈ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ, ਰੂਪਨਗਰ ਵਲੋਂ ਸਬੰਧਤ ਆਧੁਨਿਕ ਤਕਨੀਕਾਂ ਜਿਵੇਂ ਕਿ ਲੇਜ਼ਰ ਲੈਵਲਰ, ਜ਼ਫ਼ਰਾ ਦੀ ਤੈਪੀ ਜੋਡਰ ਨਾਲ ਡਿਜ਼ਾਈ, ਹੈਪੀ ਸੀਡਰ, ਪਰਾਲੀ ਪ੍ਰਬੰਧਨ ਲਈ ਸੈਲਫ ਮੋਵਰ, ਮਾਧੁਸਤ ਜੋ ਨਵੇਂ ਕਲੋਨ ਜ਼ਾ ਕਿ, ਕਪੀਆਂ ਕੁਆਲਟੀ ਖਾਰੇ ਅਤੇ ਬਰਸੀਮ ਅਤੇ ਰਵੀ ਘਾਹ ਨੂੰ ਮਿਲਾ ਕੇ ਚੁਰਤਰ ਦੀਆਂ ਪ੍ਰਦਰਸ਼ਨੀਆਂ ਲਗਵਾਈਆਂ ਹਨੀਆਂ। ਇਸ ਦਾ ਨਤੀਜਾ ਸਾਡੇ ਪਿੰਡ ਵਿੱਚ ਸਾਲ ਨਾਲ ਹੋਇਆ ਹੈ ਅਤੇ ਅਸ ਪਾਸ ਦੇ ਪਿੰਡਾਂ ਮੋਹਣ ਮਾਜਰਾ, ਰਸੀਦਪੁਰ, ਸਰੰਗਪੁਰ ਫੱਸੇ, ਰਸੀਦਪੁਰ, ਭਰਿਰਾਪੁਰ ਬੇਟ, ਮੋਕੋਵਾਲ, ਸਾਲਾਹਪੁਰ, ਦੱਦਹੇੜੀ ਅਮਰ ਸਿੰਘ,ਨੇਹਪੁਰ ਢਿੱਲ ਦੀ ਕਿਸ਼ੀ ਵਰਕਰੀਆਂ ਦਾ ਪ੍ਰਚਾਰ ਅਤੇ ਪਸਾਰ ਹੋਇਆ ਹੈ

ਮੈਂ ਕਿਸਾਨਾਂ ਅਤੇ ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਦੇ ਵਿਗਿਆਨੀਆਂ ਦਾ ਵੀ ਜਿਨ੍ਹਾਂ ਧੰਨਵਾਦ ਕਰਦਾ ਹਾਂ ਅਤੇ ਮੈਨੂੰ ਦਿਲ ਦੀਲ ਖੁਸ਼ੀ ਵਿੱਚ ਬਹੁਤ ਖੁਸ਼ੀ ਹੋ ਰਹੀ ਹੈ ਕਿ ਪਿੰਡ ਵਾਸੀਆਂ ਨੇ ਵੀ ਇਸ ਪਰਾਲੀ ਨੂੰ ਅੱਗ ਨਾ ਲਾਉਣ ਦੀ ਸੌਂਹ ਖਾਈ ਅਤੇ ਇਸ ਸੰਮ ਉੱਤੇ ਵੀ ਕਹਾਣੀ ਤੋਂ ਬਾਅਦ ਕਿਸੇ ਵੀ ਕਿਸਾਨ ਨੇ ਖੇਤ ਨੂੰ ਅੱਗ ਨਹੀਂ ਲਗਾਈ

ਵਿਗਿਆਨੀਆਂ ਨੇ ਪਿੰਡ ਦੀ ਪੰਚਾਇਤ ਦੇ ਸਹਿਯੋਗ ਨਾਲ ਸਾਰੇ ਪਿੰਡ ਵਾਸੀਆਂ ਨੂੰ ਪਰਾਲੀ ਨੂੰ ਅੱਗ ਨਾ ਲਗਾਉਣ ਦੇ ਲਾਭ ਅਤੇ ਅੱਗ ਲਗਾਉਣ ਦੇ ਨੁਕਸਾਨ ਬਾਰੇ ਦੱਸਿਆ ਪੰਚਾਇਤ ਵਲੋਂ ਪਰਾਲੀ ਨੂੰ ਅੱਗ ਲਗਾਉਣ ਵਾਲੇ ਕਿਸਾਨ ਉੱਤੇ ਵਰੰਗ 1000/- ਰੁਪਏ ਜੁਰਮਾਨਾ ਨਿਰਧਾਰਤ ਕੀਤਾ ਗਿਆ ਵੈਸਾ ਕੀਤ ਦੀ ਵਜ਼ਾ ਨਾਲ-ਨਾਲ ਦੇ ਪਿੰਡਾਂ ਵਿਚ ਹੈ ਹੀ ਹੈ ਅਤੇ ਇਸ ਸੋਚਣ ਵਿੱਚ ਵੀ ਬਹੁਤ ਘੱਟ ਅੱਗ ਲਗਾਈ ਗਈ ਹੈ ਇਸ ਦੀ ਪੈਲਾਨੋਜ਼ ਦੀ ਖ਼ਿਲਾਫ਼ ਵਿਗਿਆਨ ਕੇਂਦਰ ਦੀ ਪੂਰੀ ਟੀਮ ਦੀ ਧੰਨਵਾਦੀ ਹੈ ਜਿਨ੍ਹਾਂ ਨੇ ਸਾਡੇ ਸਾਰੇਆਂ ਵਿਚ ਹਾਜ਼ਿਰ ਹੋਏ ਸਾਰੇ ਕਿਸਾਨ ਭਰਾਵਾਂ ਨੂੰ ਮੇਜ਼ ਵਿੱਚ ਪਰਾਲੀ ਨਾ ਸਾਭਣ ਲਈ ਜਾਗਰੂਕ ਕੀਤਾ ਅਤੇ ਵੱਖ-ਵੱਖ ਤਕਨੀਕਾਂ ਰਾਹੀਂ ਜਿਨਾਂ ਪਰਾਲੀ ਨੂੰ ਸਾਡੇ ਕਣਕ ਦੀ ਸੰਭਾਲੀ ਕਰਵਾਈ।

ਸਰਪੰਚ
ਗ੍ਰਾਮ ਪੰਚਾਇਤ, ਫ਼ੀ
ਫਤਿਹਗੜ੍ਹ ਵਿਰਾਨ
ਬਲਾਕ ਚਮਕੌਰ ਸਾਹਿਬ

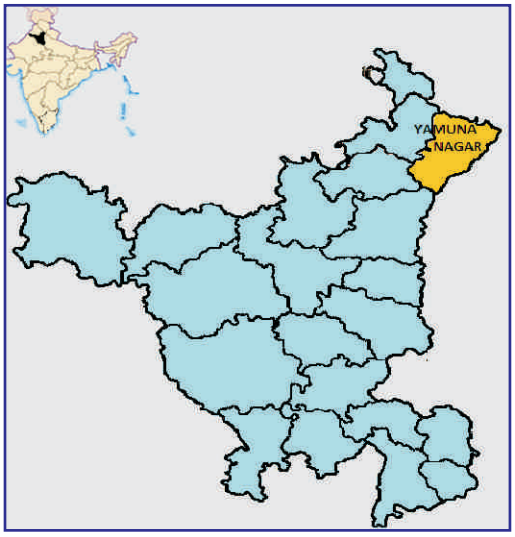
Consequently, farmers collected rice residue and stored it for other purposes.

In 2016, there was not a single event of residue burning in Fatehgarh Viran. Krishi Vigyan Kendra, Ropar is actively engaged in dissemination of technologies in adjoining 13 villages like Rampur Fasse, Mohan Majra, Rasidpur, Salahpur, Sarangpur, Taprian, Amar Singh,Dalla, Makowal, Katlor, Fasse Mand, Khokharan and farmers are convinced with these technological interventions.

Contributors:
Harinder Singh, Sanjeev Ahuja, and Opinder Singh

Radauri, Yamunanagar

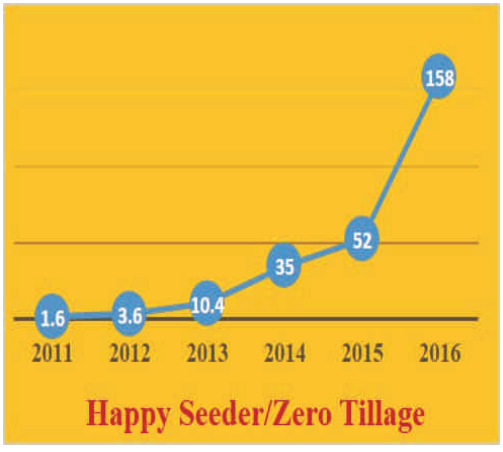
Radauri village of Yamunanagar in Haryana is having 279 hectare of cultivable land out of which 260 hectare is under paddy. In 2012, demonstrations on zero tillage and happy seeder were demonstrated in about 1.6 and 2.0 hectare respectively. The area under happy seeder rose to 20 hectare in 2014 whereas area under zero till increased to 15 hectare in the same year. KVK, Yamunanagar organized various extension programs to popularize these



Method Demonstration on Happy Seeder

Brief Description of the Village:

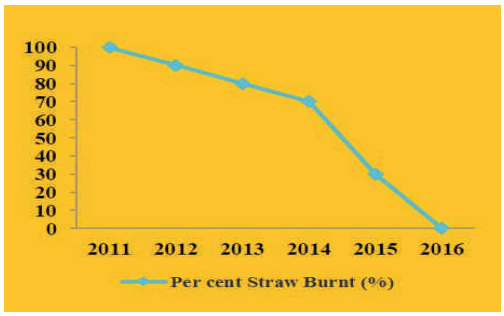
Name of the Village	Radauri
Block	Radaur
District	Yamunanagar
Total Population	1562
No. of Animals	727
Cultivated Area	279 ha
Total Irrigated Area	100%

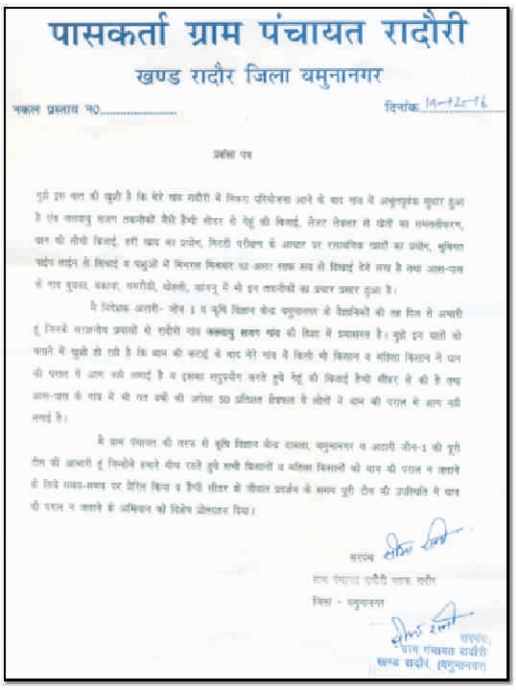


technologies and many farmers took keen interest in the technologies demonstrated. Now, the area has increased to 108 hectare under happy seeder and 50 hectare under zero till. The results are quite impressive and the main player of this success is Sarpanch Smt. Seema Rani of the village who took keen interest in dissemination of these technologies and now the whole village is converted under resource conservation technologies.

Sowing Wheat in Paddy Residue

In 2016, Smt. Seema Rani declared that there will be no burning in her village and fine will be imposed if any farmer will burn the residue. Consequently, Radauri village was





पासकर्ता ग्राम पंचायत रादौरी

खण्ड रादौर जिला यमुनानगर

declared as residue burning free village with the full support of sarpanch in 2016. Her success story has also been showcased in DD KISAN channel where Smt. Seema Rami was interviewed. KVK, Yamunanagar is also all out efforts in demonstrations on climate resilient technologies in adjoining 20 villages like Kharwan, Radauri, Balachor, Bhagwanpur, Bhilpura, Rampur Khadar, Tugalpur, Bakana, Dhloi, Kalesra, Plaka, Damla, Silli, Kanjnu, Chhota Bans, Kartarpur, Chamauri, Bubka and Mandhar. The responses of these technologies are very encouraging and more and more area is coming under HS/ZT.

KVKs efforts in demonstrating the Climate Resilient Technologies: During the year 2011 to 2016, KVKs of Punjab and Haryana (Bathinda, Fatehgarh Sahib, Faridkot, Ropar and Yamunanagar) demonstrated these technologies in these villages. Under this intervention, technologies exhibited were sowing of wheat with happy seeder/zero till drill in residual moisture; demonstration of spreaders, balers etc. The on-farm demonstrations of location specific these technologies were undertaken in participatory mode with active involvement of farmers and village Panchayat.

Highlights

- 4-13% increase in yield
- Saving of Rs.200-4000/ha
- Very less lodging compared to conventional wheat
- No burning, so environmental friendly

i) Demonstration of Happy seeder/zero till machines: To address the issue of residue burning in a holistic way, sowing wheat with Happy seeder in rice residue (standing or loose) was demonstrated in NICRA villages where combine harvesters were used for harvesting of rice. However, areas where manual harvesting of rice is practiced, wheat is sown with zero till drill. Both the practices have shown good results in terms of saving in labour costs, water and advancement in planting date to escape terminal heat stress.

In Killi Nihal Singhwala village of Bathinda, demonstration of sowing

Table: Performance of demonstrations on happy seeder sown wheat

Technology demonstrated (Happy Seeder in wheat)	No. of farmers	Area (ha)	Demo Yield (q/ha)	Check Yield (q/ha)	% increase	Demo BCR
Wheat (WH-1105) (Bathinda)	32	24.8	50.0	48.7	2.67	2.06
Wheat (HD-2967) (Fatehgarh Sahib)	50	20.0	50.63	44.8	13.01	2.3
Wheat (HD-2967) (Ropar)	15	50.0	51.89	48.5	7.00	3.27
Wheat (HD-2967) (Yamunanagar)	62	35	49.80	47.9	4.00	3.23

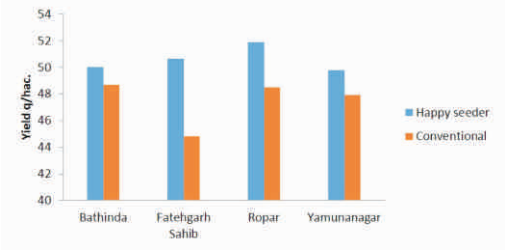


Fig.1 Comparative yields of wheat sown using happy seeder technology and conventional method.

wheat (WH-1105) with happy seeder in 32 farmers' field covering 24.8 hectare area in 2015-16 with yield advantage as 50.0q/hectare compared to conventional (48.7q/ha) practice and allowed integration of paddy straw into the soil improving soil moisture. In Badhauchhi Kalan village of Fatehgarh Sahib, demonstration of wheat (HD-2967) sowing with happy seeder on 50 farmers' fields in 20 hectare area during 2015-16 provided an alternative for rice residue management and also resulted in yield by 50.63q/ha compared to

Field Day on Happy Seeder Sown Wheat

conventional tillage practice (44.8q/ha). In Rasidpur village of Ropar , sowing of wheat (HD-1105) with happy seeder was demonstrated on 15 farmers' fields in 50 hectare area with resulted yield as 51.89q/ha compared to farmers practice of conventional tillage (48.5q/ha). Further, crop lodging damage due to unseasonal rainfall (40

Experts Inspecting Wheat Sown with Happy Seeder

mm) during March, 2015 was lower in happy seeder sown wheat field. In addition, incidence of yellow rust was more in lodged crop than in happy seeder sown wheat crop. In Radauri village of Yamunanagar, happy seeder sown wheat (HD-2967) was demonstrated in 35 hectare area covering 62 farmers, with resulted yield as 49.80q/ha as compared to conventional tillage sown wheat (47.9 q/ha).

ii) Demonstration of Baler cum knotter: KVK Faridkot and Bathinda demonstrated baler- cum-knotter technology on the fields of 95 farmers in 638.8 hectare area. The machine collects the paddy straw which is lying in rows and save manual efforts. Hence, use of baler cum knotter was demonstrated on 20 hectare during 2011-12 for paddy straw management in the village. Initially the farmers were not responding well but after the motivation by the KVK staff, the farmers are now ready to use this machine. The capacity of this baler to bale the paddy straw is 5-7 acres/day and about 20 to 30 q of straw can be baled from one acre area.

Highlights

- Earning Rs. 1000-1500 /acre
- Early vacation of field ensured timely sowing of wheat
- No burning

B. Capacity development of farmers and other stakeholders for residue management and out scaling of climate resilient technologies in NICRA villages: In order to generate mass awareness about the impact of climate resilient technologies, large numbers of extension activities were organized by KVKs under NICRA at KVKs farms and in the NICRA villages. A total of 495 extension programmes were organized in which 9081 farmers including 2588 farm women participated during 2015-16.

Under extension activities, 96 method demonstrations on different technologies were organized, in which 1877 farmers and farm women participated. Thirty one (31) field days on enhancing knowledge of different crops were conducted benefitting 1309 farmers and 166 farm women. One forty six (146) awareness camps on different facets of climate resilient technologies were organized, in which 2940 farmers and 1069 farm women participated. Likewise, ten (10) exposure visits of 543 farmers and 96 farm women were conducted during 2016-17. A total of 135 agro advisories were issued benefitting 2000 farmers and farm women. Twenty seven (27) group discussions, involving 291 farm women and 429 farmers, were organized to discuss the problems related to climate resilient practices benefitting in soil health management, fertilizer doses, plant protection measures, integrated nutrient and insect pest management etc.

Contributors:
B. R. Kamboj and R. H. Taya

Kanoi, Sangrur

Block: Sangrur

District: Sangrur

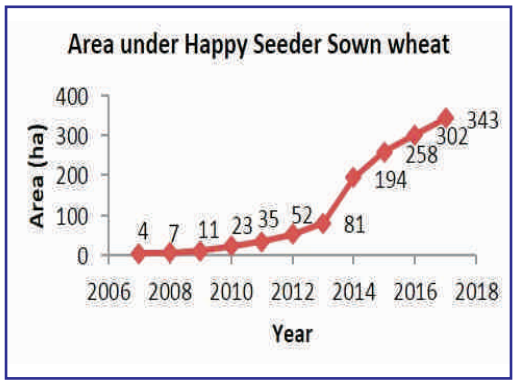
- Area under cultivation is 480 ha
- Paddy and wheat are the dominant crop grown
- Paddy residues were burnt completely or partially

KVK Interventions:

- Effort started in 2007-08, when demonstrations on wheat sown with Happy Seeder were conducted on 4 ha area
- Field days, trainings and other extension activities were simultaneously organized
- Sh. Jagdeep Singh, a farmer, was inspired to start a Custom Hiring Centre
- KVK & State Agri. Dept. worked untiringly in convergence mode

Results:

- Around 132 ha area is under incorporation of residue using rotavator/plough
- Paddy residue in about 343 ha area is retained as mulch in field as wheat is sown with happy seeder
- Farmers from adjoining villages viz., Longowal, Sahoke, Taranji Khera and Ugrahan have also started using happy seeder for wheat sowing.



Harvest Field day on Happy seeder sown wheat

Farmer-scientist showing paddy residue in wheat crop

Contributors : Satbir Singh and Mandeep Singh

Kotla, Hoshiarpur

Block: Mahilpur

District: Hoshiarpur

- Area under cultivation is 440 ha
- Paddy and wheat are the major crops grown
- Wheat residue used as animal feed but paddy straw was being burnt

KVK Interventions:

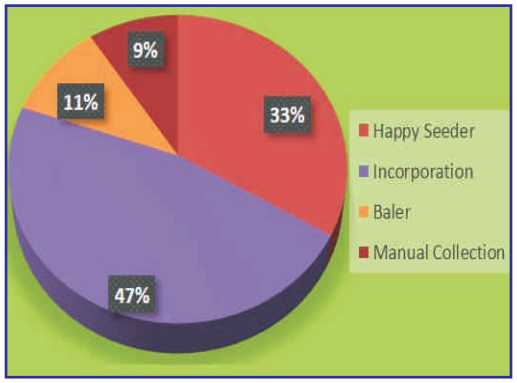
- Farmers were made aware about bad effects of residue burning through campaigns
- Frontline demonstrations were conducted on 20 ha to showcase latest residue management technologies
- Farmers were motivated to practice residue management by retention and mulching
- KVK converged efforts with State Dept. of Agri. to effectively manage the paddy residue in a participatory mode
- Learnings are shared among scientists and farmers regularly

Results:

- About half of the residue is incorporated and 1/3 residue is managed by retention and sowing wheat with Happy Seeder

Happy Seeder sowing at S. Ravinder Singh fields

Happy Seeder sown wheat at S. Ravinder Singh fields



Adopted techniques of residue management

Contributors : Ajaib Singh and Maninder Singh Bons

Todarpur, Hoshiarpur

Block: Mahilpur

District: Hoshiarpur

- Area under cultivation is 833 ha
- Paddy and wheat are the dominant crops
- Paddy stubble burning was a common phenomenon

KVK Interventions:

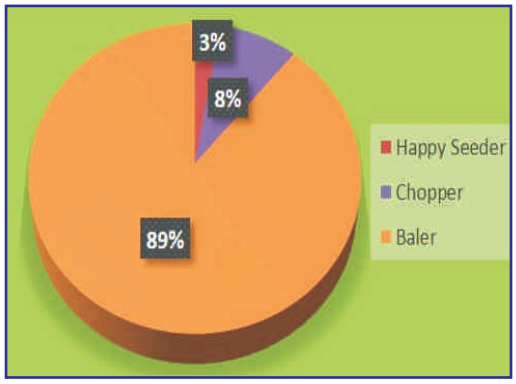
- Since 2013, the KVK has been conducting awareness programmes and demonstrations
- Baler was introduced and brought to practice since 2015 and Happy Seeder is being demonstrated since 2013
- Paddy straw chopper was also demonstrated and made popular
- Joint efforts of KVK & State Agri. Dept. convinced farmers to earn from residue instead of burning

Results:

- Almost 90% residue is baled and sold @Rs.1.35/kg to a biomass plant in Binjon village which is just 8km away
- Few farmers have purchased their own balers to run them on hiring basis
- Thus, farmers are earning from the residue instead of burning

Demonstration on baler

Germinated wheat crop sown with Happy Seeder at S. Sandeep Singh fields



Adopted techniques of residue management

Contributors : Ajaib Singh and Maninder Singh Bons

Bangla Rai, Tarn Taran

Block: **Patti**

District: **Tarn Taran**

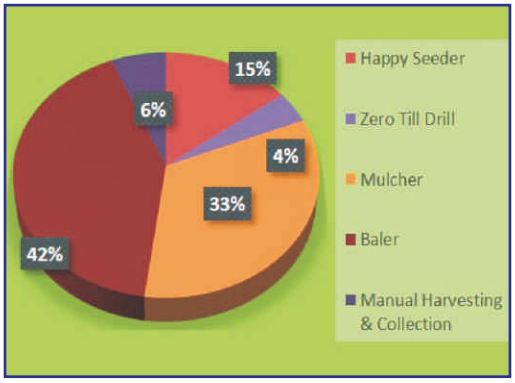
- Total cultivated area is 270 ha
- Rice-wheat is dominant cropping system is 240 ha
- Before 2017, residue was burnt in the fields

KVK Interventions:

- Awareness campaign on residue management
- Demonstration on paddy straw management technologies such happy seeder, chopper, MB plough etc.
- Training cum awareness programmes on residue management technologies.

Results:

- Nearly 2/5 residue baled and 1/3 incorporated in the soil



Adoption of different residue management techniques

Progressive farmer and scientist showing paddy residue in wheat field

Harvest Filed Day

Interaction of farmers with experts

Contributors : Balwinder Kumar, Navjot Singh and Anil Kumar

Ageti, Patiala

Block: **Nabha**

District: **Patiala**

- Area under cultivation is 365 ha
- Area under Rice wheat cropping system is 330 ha
- Before 2015, the farmers were use to burn paddy straw residue

KVK Interventions:

- Introduction of happy seeder technology 2015 onwards
- Introduction of baler technology 2016 onwards
- Aggressive campaign against paddy straw burning
- Training and awareness programme on crop residue management
- State Agri. Dept. was regularly involved during extension activities.

Results:

Areas under residue management with happy seeder is 283.23 ha and under baler is 48.56 ha

Recording by DD Kisan

Awakening Farm Women for Residue Management

Sensitizing farmers against residue burning

Happy Seeder Sown Wheat at 40 DAS

Contributors : Jasvinder Singh and Parminder Singh

Kaler Majri, Patiala

Block: **Nabha**

District: **Patiala**

- Area under cultivation is 202 ha
- Area under paddy wheat cropping system is 170 ha
- Before 2015 more than 80% of the crop residue was burnt in the fields by the farmers

KVK Interventions:

- KVK Patiala adopted the village during 2015
- Demonstration on happy seeder and baler were conducted in the adopted village
- Field Days, Kisan Goshthies, campaign against paddy straw burning
- Looking into the KVK experience, Department of Agriculture came forward to make the village residue burning free
- Special efforts were made by Dept. of Agri. to provide machines to the farmers

Results:

- Areas under happy seeder technology is 32.37 ha, under baler is 109.26 ha and under incorporation by using disc harrow , MB plough is 28.33 ha

Glimpse of Harvest field day

Farmers-scientists visit happy seeder sown wheat field

Discussion with farmer in Gurudwara

Contributors : Jasvinder Singh and Parminder Singh

Bhuller Bet, Kapurthala

Block: **Bhilwan**

District: **Kapurthala**

- Area under cultivation is 275 ha
- Area under Paddy-Wheat is 222 ha (81%)

KVK Interventions:

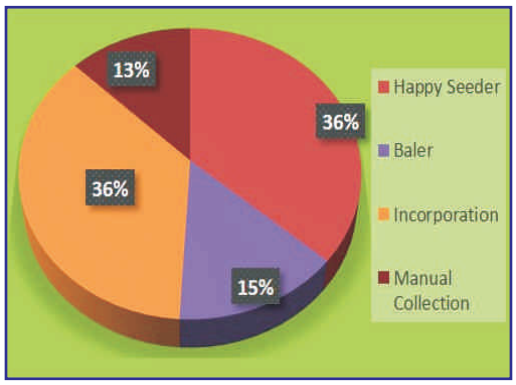
- Demonstrations on Happy Seeder and training cum awareness programmes on crop residue management
- Regular meetings with panchayat members were organized
- Harvest Field Days were organized to convince farmers about effectiveness of the residue management technologies

Results:

- Nearly 1/3 residue is managed by incorporation and 1/3 by retention and wheat sown with Happy Seeder

Demonstration on working of Happy Seeder

Harvest Field Day



Residue management through different technologies

Progressive farmers honored for managing residue

Contributors : Bindu and Jugraj Singh

Boolpur, Kapurthala

Block: **Sultanpur Lodhi**

District: **Kapurthala**

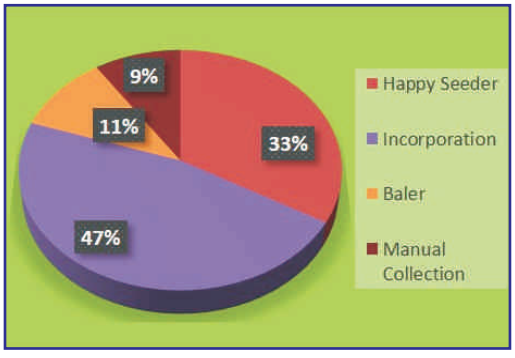
- Area under cultivation is 240 ha
- Area under paddy-wheat system is 96 ha
- Potato is another major crop of the region

KVK Interventions:

- Campaign on paddy straw management were organized in the village
- Demonstration on paddy straw management machinery such as happy seeder, baler, zero tillage, MB plough, chopper etc. were organized
- Diagnostic visits and scientist-farmer interphase were also organized
- Motivational interface with village panchyat members organized

Results:

- Around half of the residue is managed by incorporation and 1/3 by happy seeder



Adoption of different CRM technologies

Demonstration on Happy seeder in paddy straw mulch

Diagnostic visit to happy seeder sown wheat plot

Field day on happy seeder sown wheat

Contributors : Bindu and Jugraj Singh

Dalla, Jalandhar

Block: **Phillaur**

District: **Jalandhar**

- Area of village is 211 ha
- Paddy is the dominant crop of the village
- Paddy straw management is a prominent issue for the local farmers

KVK Interventions:

- Field days and other extension activities were conducted consistently
- Demonstrations on Baler were conducted in 10 ha during 2016
- Awareness camps, training, etc. were regularly organized

Results:

- About 22 % farmers (potato growers) manage paddy straw using stubble shaver/rake/baler/incorporation technique
- Nearly 14 percent farmers incorporate paddy straw using chopper and wet mixing technique
- Around 20 percent farmers have harvested paddy with Combine with Super SMS and sown wheat with Happy Seeder
- Similarly, about 39 percent farmers incorporate paddy straw with disc harrow/cultivator/rotavator

Demonstration on Baler

Noted environmentalist Padma Shri Sh. Balbir Singh Seechewal flagged Mobile van for spreading awareness on residue management

Demonstration on Happy seeder for wheat sowing

Contributors : Kuldeep Singh, Rupinder Chandel and Arpandeep Kaur

Hardo Sheikh, Jalandhar

Block: **Phillaur**

District: **Jalandhar**

- Area under cultivation is about 220 ha
- Paddy-wheat cropping pattern is dominant
- Residue management is a common problem faced by the farmers

KVK Interventions:

- Various Trainings were conducted on paddy straw management machinery
- Campaign against residue burning sensitized farmers about the seriousness of the issue
- Harvest field days were organized to showcase results of Happy Seeder sown wheat
- Regular meetings with panchyat members conducted

Results:

- The area under crop residue incorporation increased from 80 ha in 2016 to 120 ha in 2017
- The farmers prefer harvesting of paddy with combine with super SMS technology and sowing wheat with happy seeder
- Many farmers are growing early maturing varieties of paddy, which allows better residue management

Field Harvest Day on Happy Seeder

Demonstration on Happy Seeder

Demonstration on combined harvester with Super SMS

Contributors : Kuldeep Singh, Rupinder Chandel and Arpandeep Kaur

Dheera Patra, Ferozepur

Block: **Ferozepur**

District: **Ferozepur**

- Area under cultivation is 762 ha
- Paddy and wheat are the dominant crops
- Paddy straw management is a prominent issue for the local farmers

KVK Interventions:

- Demonstrations on zero tillage/happy seeder were conducted on 10 ha after harvesting of paddy in 2015
- Awareness campaigns and other extension activities were conducted consistently
- Baler demonstrations were conducted in 50 hectares in 2015
- Custom Hiring system was also being introduced and few youth came forward to start their CHC

Results:

- Area under residue management by baling increased to 170 ha and by ZT/HS to 130 ha in 2016
- In 2018, the whole village came forward and decided that no one will burn crop residue here after
- The village acts united and everybody puts efforts not to burn the residue

Demonstration on Happy Seeder sown wheat

Incorporation of paddy residue

Field Day on wheat sown with Happy Seeder

Contributors : G. S. Aulakh and Vicky Singh

Gammewala, Ferozepur

Block: **Ferozepur**

District: **Ferozepur**

- Area under cultivation is 489 ha
- Paddy and wheat are the major crops
- Paddy straw management is a prominent issue for the local farmers

KVK Interventions:

- Demonstrations on zero tillage/happy seeder were conducted on 6 ha after harvesting of paddy in 2015
- Farmers were made aware about ill effects of residue burning through campaigns
- Baler was exhibited in 30 hectares in 2015
- Farm youth were motivated to start CHC with available machinery to be used residue management

Results:

- Areas under ZT/HS increased and reached to 110 ha in 2016 and Baler Demonstrations increased to 140 ha in 2017
- Farmers from three neighboring villages also started to use technologies for managing straw
- In 2018, the whole village decided not to burn crop residues in future
- Panchyat declared penalty for burning residues and this clicked the message

Demonstration of Baling

Baling of paddy residue

Interaction of farmers with KVK experts

Contributors : G. S. Aulakh and Vicky Singh

Jaffarpur, S.B.S. Nagar

Block: **Nawanshahar**

District: **S.B.S. Nagar**

- Total cultivated area 123 ha
- Area under Rice-wheat system is 110 ha

KVK Interventions:

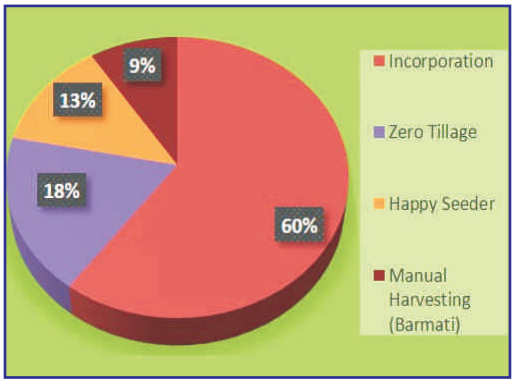
- Demonstration on Super SMS, happy seeder technology and mould board plough
- Training cum awareness programmes on paddy straw management
- Harvest field day were conducted to convince farmers about residue management technologies

Results:

- In nearly 3/5 of area residue in incorporated with MB plough/rotavator
- Around 1/3 residue is managed with ZT/HS

Demonstration on residue Incorporation

Paddy harvested with SMS



Pattern of residue management

Demonstration on chopper-shreadder

Contributors : Manpreet Jaidka and Navjot Singh Brar

Kangour, S.B.S. Nagar

Block: **Banga**

District: **S.B.S. Nagar**

- Total cultivated area is 598 ha
- Area under Rice-wheat system is 450 ha

KVK Interventions:

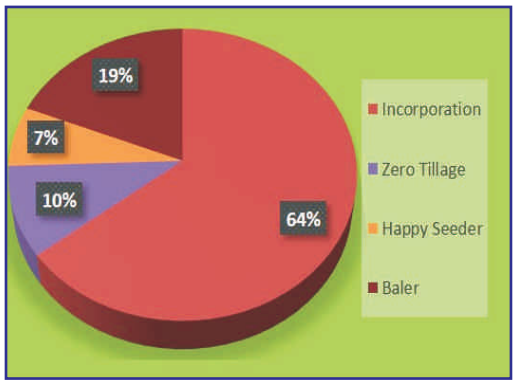
- Demonstration on Super SMS combine harvesting and happy seeder technology
- Demonstration on baler, Chopper, MB plough etc.
- Training cum awareness programmes on paddy straw management
- Interaction with panchayat members were also organized

Results:

- Nearly 2/3 residue is managed by incorporating in the soil with rotavator/plough and 1/5 by baling
- About 1/5 residue is retained and wheat is sown with ZT/HS

Demonstration on Happy Seeder

Demonstration on chopper



Adoption of different CRM technologies

Field after Harvesting with combine harvester

Contributors : Navjot Singh Brar and Manpreet Jaidka

Rampur Fasse, Ropar

Block: **Chamkaur Sahib**

District: **Ropar**

- The total cultivated area of the village is 96.4 ha
- Paddy (71 ha) and wheat (76 ha) are the major crops grown
- Maize, sugarcane and poplar are other crops grown in the village

KVK Intervention

- KVK organized awareness camps, trainings, field days etc. in the village and in nearby villages
- Farmers were continuously motivated to adopt different residue management technologies and give up burning
- Exposure visits to NICRA villages were also organized for confidence building
- Travel seminars were organized for convincing farmers about residue management technologies

Result

- Paddy residue from nearly 15 ha area is retained as wheat is sown with Happy Seeder
- Residue on about 40 ha land is incorporated using mulcher/MB plough/ rotavator
- Rest, nearby 5 ha area is under cultivation with zero tillage machine

Use of chopper-cum- spreader in harvested paddy field

Meeting with the village panchayats

Glimpse of Awareness campaign against Residue Burning

Contributors : Ashok Kumar, Ankurdeep Preety, Vipan Kumar Rampal and Aparna

Khosa Paudo, Moga

Block: **Moga II**

District: **Moga**

- Area under cultivation is 128 ha
- Rice-Wheat is dominant cropping system in an area of 120 ha

KVK Interventions:

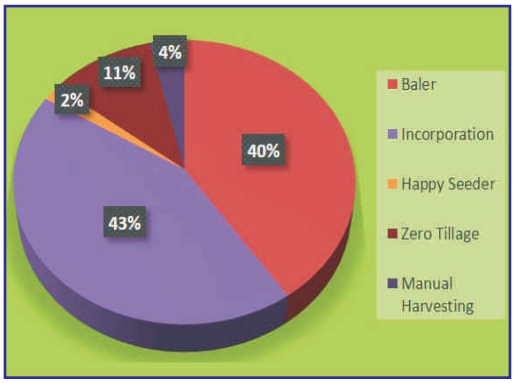
- Demonstrations on mulcher, happy seeder & baler technology were conducted in the village
- Awareness and training camps, field days on crop residue management
- Campaign against paddy straw burning
- Religious leaders were involved to mobilize farmers

Results:

- Nearly 2/5 of the residue is managed by baling and 2/5 by incorporation

Demonstration on baler

Demonstration on Mulcher



Area under different residue management technologies

Sarpanch Khosapando awarded for zero residue burning by Sant Gurmeet Singh

Contributors : Ankit Sharma and Amandeep Singh Brar

Purane Wala, Moga

Block: **Moga I**

District: **Moga**

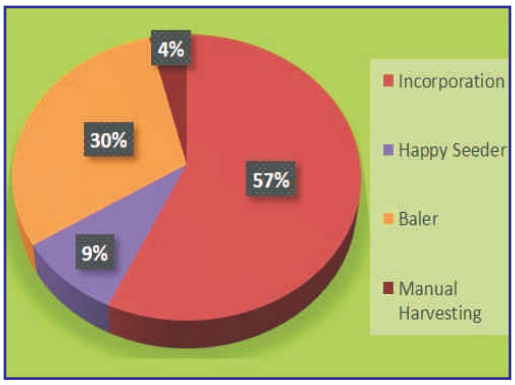
- Total cultivated area is 172 ha
- Area under Rice-wheat cropping system is 132 ha

KVK Interventions:

- Demonstration on Super SMS, Mulcher, Happy Seeder and Baler technology
- Awareness cum training programmes on paddy straw management
- Campaign, mass media coverage on paddy straw management
- Religious leaders acted as a catalyst to popularize residue management technologies by mobilizing farmers

Results:

- Around 3/5 of the residue is incorporated and 30% is baled



Management of residues

Field Day on Happy Seeder Technology

Demonstration on incorporation with Rotavator

Demonstration on Harvester with Super SMS

Contributors : Ankit Sharma and Amandeep Singh Brar

Powat, Ludhiana

Block: Machhiwara Sahib

District: Ludhiana

- Area under cultivation is 1464 ha
- Dominant Cropping system: Rice-Wheat in 814 ha
- Before 2017, more than 60% of residue was burnt in field

KVK Interventions:

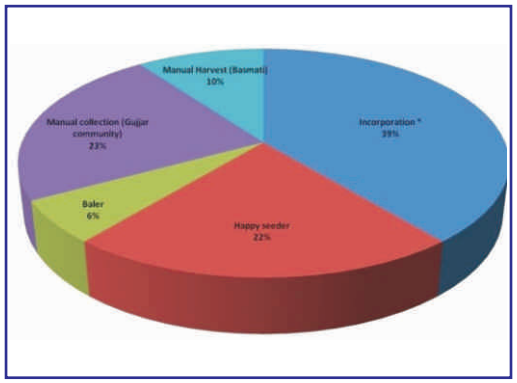
- KVK adopted this village in the year 2014
- Training cum-awareness programmes in situ-paddy straw management.
- Introduction of high yielding short duration varieties in the village. More than 95% area is under PR-121, PR-122, PR-126 & PUSA Basmati 1121 varieties
- Demonstrations on happy seeder were conducted in year 2014 in 2 acres
- Travel seminar were organized for sharing learnings of happy seeder
- Involvement of Religious institutions, Panchayats, School children etc.

Results:

- In nearly 2/5 area residue is incorporated in the field itself and 1/5 is retained by sowing wheat with happy seeder
- DD Kisan "किसान मंच" programme organized in the village

Demonstration on Happy Seeder

Field Harvest Day



Residue management in the village

Contributors : Karun Sharma, Devinder Tiwari and S.C. Sharma

Diwala, Ludhiana

Block: **Samrala**

District: **Ludhiana**

- Area under cultivation is 280 ha
- Cropping system: Rice-Wheat(dominant) 240 ha
- Before 2015, more than 90% of area under rice-wheat cropping system was burnt by the farmers.

KVK Interventions:

- KVK adopted this village in the year 2015
- Training cum-awareness programmes on in-situ paddy straw management.
- Travel seminar organized to encourage cross learning among farmers
- Demonstration of Paddy Straw Chopper cum Spreader
- Field harvest day were organized to convince farmers about the effectiveness of residue management technologies

Results:

- Combine harvesting through SMS in an area of 130 ha with 60 ha by MB Plough and 70 ha by Disc Harrow
- Mulcher and cutter-cum-spreader took place on 50 ha with 5 ha on Happy Seeder and 45 ha on MB Plough

Field Harvest Day

Demonstration on Chopper

Pledge against Residue Burning

Contributors : Karun Sharma, Devinder Tiwari and S.C. Sharma

Gosslan, Ludhiana

Block: **Samrala**

District: **Ludhiana**

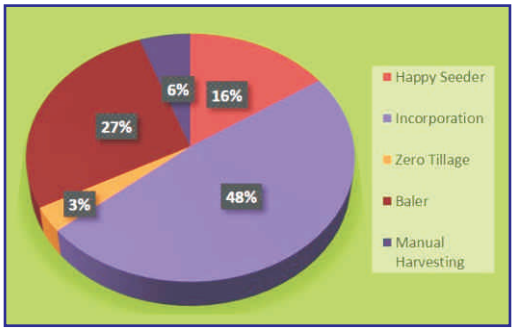
- Total cultivated area is 350 ha
- Area under Rice-wheat cropping system is 310 ha

KVK Interventions:

- KVK adopted this village during 2015
- Introduced high yielding short duration paddy varieties having very less straw load
- Demonstration on happy seeder technology, supper SMS for paddy harvest, mulcher etc.
- Massive campaign against paddy straw burning

Results:

- Nearly half of the residue is incorporated using rotavator/plough
- Around ¼ of residue is baled and 1/5 is retained on field to sow wheat with



Adoption of different CRM technologies

Wheat sown with Happy Seeder

Demonstration on Chopper


ਹੈਪੀ ਸੀਡਰ ਪ੍ਰਤੀ ਕੀਤਾ ਜਾਗਰੂਕ

ਪਿੰਡ ਪਵਾਰ 'ਚ ਹੈਪੀ ਸੀਡਰ ਨਾਲ ਕਣਕ ਦੀ ਬਿਜਾਈ ਲਈ ਪ੍ਰਦਰਸ਼ਨੀ ਪਲਾਂਟ ਲਗਾਏ

ਸਰਵਣ ਸਿੰਘ ਭੰਗਲਾਂ, ਸਮਰਾਲਾ

ਕ੍ਰਿਸ਼ੀ ਵਿਗਿਆਨ ਕੇਂਦਰ ਸਮਰਾਲਾ ਵੱਲੋਂ ਡਾ ਅੰਮ੍ਰਿਤ ਸਰਮਾ ਸਹਿਯੋਗੀ ਨਿਰਦੇਸ਼ਕ ਦੀ ਅਗਵਾਈ ਹੇਠ ਪਿੰਡ ਪਵਾਰ ਵਿਖੇ ਹੈਪੀ ਸੀਡਰ (ਫਲੈਸ ਦਿਲ) ਦੇ ਨਾਲ ਕਣਕ ਦੀ ਬਿਜਾਈ ਦੇ ਵੱਖ-ਵੱਖ ਕਿਸਾਨਾਂ ਦੇ ਪ੍ਰਦਰਸ਼ਨੀ ਪਲਾਂਟ ਲਗਾ ਕੇ ਫੋਨ ਦੀ ਪਰਾਲੀ ਦੀ ਸੁਚੱਜੀ ਵਰਤੋਂ ਲਈ ਜਾਗਰੂਕ ਕੀਤਾ ਗਿਆ।

ਕਿਸਾਨਾਂ ਨੂੰ ਹੈਪੀ ਸੀਡਰ ਨਾਲ ਕਣਕ ਦੀ ਬਿਜਾਈ ਬਾਰੇ ਦੱਸਦੇ ਅਧਿਕਾਰੀ।

ਜਾਣਕਾਰੀ ਦਿੰਦੇ ਤੇ ਮਿੱਟੀ ਪ੍ਰੀਖਣ ਲਈ ਦੀ ਗਿਆ ਤੇ ਉਨ੍ਹਾਂ ਦੇ ਨਾਲ ਇਸ ਤਕਨੀਕ ਬਾਰੇ

News on KVK activity

Contributors : Karun Sharma, Harshneet Singh and S.C. Sharma

Sadda Singh Wala, Mansa

Block: **Mansa**

District: **Mansa**

- Out of total 900ha area, 840 ha is under cultivation
- Major cropping systems: Rice-wheat (95% of total cultivated area, 800ha)
- Open field rice straw burning after mechanical harvesting of rice crop has been the major problem

KVK Interventions:

- KVK started extensive campaigning on residue management in 2012
- Various straw management technologies viz. baler, zero tillage, happy seeder and rotavator were demonstrated
- KVK encouraged farmers to purchase the baler-cum-rakes to be used on custom hiring basis
- Two young farmers purchased the machinery and started making bales at their own farm and on custom hiring basis

Results:

- Almost 60% paddy residue is baled and sold at biomass based power plant of 10 MW capacity (Viaton Energy Pvt. Ltd.) in the adjoining village Khokhar Khurd
- Rest of the residue is managed by zero-till drill or rotavator
- Farmers in the village have 35 rotavators and 3 zero-till drills

Campaign agianst residue burning Village-Krandi, Mansa

Sh. Latif Ahmed, SDM, Mansa monitored activities of KVK

Periodic shift in area under adoption of baler technology

Contributors : Gurdeep Singh, Pritpal Singh and G. P. S. Sodhi

The Inspirational Story of Paddy Straw Management in District Pathankot

District Pathankot, with total geographical area of 91000 ha and net sown area of 47000 ha and total area under paddy cultivation is 27000 ha during 2015-16. Earlier, a huge amount of paddy straw left in the field compelled farmers to burn it for the timely sowing of wheat. During the Mass Awareness Campaign, KVK organized different programmes to put stop to the practice of burning the paddy residue in district Pathankot. KVK also tried convincing farmers to sell their left over straw to the *Gujjar* community of this area, as their livelihood depends on milch animals. I*nterface meetings were organized among farmers and Gujjar community by KVK team and established a linkage for management of crop residue. Gujjar's* bought combine harvested paddy straw for Rs.1500-2000/- per acre; whereas, farmers fetched Rs.4000/- per acre for *basmati* and *sharbati* as these are harvested with sickles and they get more loose straw. These interface meetings were very effective in sending message

अच्छी पहल : पराली को आग लगाए बिना की गेहूं की बुआई, हैपीसीडर मशीन से पराली को खाद के रूप में किया प्रयोग

पठानकोट के किसान बने औरों के लिए प्रेरणा स्रोत

पठानकोट के खेतों में पराली इधर-उधर करते किसान।

पराली को शरेडर मशीन से दिया खाद का रूप

पराली न जलाकर लिए कई फायदे : अमोल सिह

पराली को बेच कर कमाया लाभ : गुरविंद्र सिह

विभागीय प्रयासो से दिखे बढ़िया नतीजे : डीसी

among farmers who came forward and resulted into marketing of paddy residue and fetched extra earning resulting in Win-Win situation for farmers as well as *Gujjars*.

When some farmers were unable to sell the paddy residue, the KVK and State Department of Agriculture guided them to incorporate paddy straw in their fields itself. Moreover, demonstrations on Happy Seeder sown wheat were also conducted in cluster of villages like Sultanpur, Naushehra, Nawapind to popularize residue management by retaining/mulching it in

KVK Interventions:

- Arranged Interface meeting among farmers and Gujjar community
- Demos on Happy seeder in cluster of villages
- Sensitization Programmes to highlight ill effects of residue burning
- Importance of custom hiring centres

the field. Pathankot is a district which falls in *kandi* region (sub-mountainous) of Punjab; therefore, farmers have small land holdings and they cannot afford to purchase their own happy seeders. Thus, cooperative societies and farmer organizations were also sensitized to come forward to purchase happy seeders and provide it to the farmers on custom hiring basis. Moreover, different awareness camps were

Farmers collecting paddy straw from their fields

organized to sensitize farmers about the ill effect of residue burning and technological options available for effective residue management.

The data available with Punjab Pollution Control Board (PPCB) and Remote Sensing support that residue burning was very less. Even Deputy Commissioner declared Pathankot as Residue Burning Free District.

The success story of Pathankot will teach other districts of Punjab and North-Western India a great deal

ਜ਼ਿਲ੍ਹਾ ਪਠਾਨਕੋਟ ਵਿਚ ਕਿਸਾਨਾਂ ਨੇ ਬਹੁਤ ਘੱਟ ਸਾੜੀ ਪਰਾਲੀ

ਪੰਜਾਬ ਹੀ ਨਹੀਂ ਸਗੋਂ ਪੂਰੇ ਉੱਤਰੀ ਭਾਰਤ ਵਿਚ ਝੋਨੇ ਦੀ ਕਟਾਈ ਤੋਂ ਬਾਅਦ ਪਰਾਲੀ ਨੂੰ ਸਾਡਨ ਕਾਰਨ ਜਿਥੇ ਹੁੰਦਾ ਭਾਰਨ ਆਮ ਲੋਕਾਂ ਦਾ ਸਾਹ ਘੁਟਦਾ ਫਿਰਾ, ਉਥੇ ਜ਼ਿਲ੍ਹਾ ਪਠਾਨਕੋਟ ਅਤੇ ਖੇਤੀਬਾੜੀ ਵਿਭਾਗ ਵੱਲੋਂ ਕੀਤੀਆਂ ਅਹੀਲਾਂ ਨੂੰ ਮੰਨਦੇ ਹੋਏ ਜ਼ਿਲ੍ਹਾ ਪਠਾਨਕੋਟ ਦੇ ਕਿਸਾਨਾਂ ਨੇ ਪਰਾਲੀ ਨੂੰ ਖੇਤਾਂ ਵਿਚ ਸਾਡਨ ਦੀ ਬਿਜਾਏ, ਰੂੜੀਜ ਡਾਈਚਾਰੇ ਦੇ ਲੇਕਾਂ ਨੂੰ ਵੱਚ ਕੇ, ਹੈਪੀਸੀਡਰ ਨਾਲ ਕਣਕ ਦੀ ਬਿਜਾਈ ਕਰਕੇ ਹਵਾ ਨੂੰ ਪ੍ਰਦੂਸ਼ਿਤ ਹੋਣ ਤੋਂ ਬਚਾਉਣ ਵਿਚ ਵੱਡਾ ਹਿੱਸਾ ਪਾਇਆ ਹੈ। ਇਸ ਤਰ੍ਹਾਂ ਜਿਥੇ ਵੱਡੀ ਮਾਤਰਾ ਵਿਚ ਪੈਦਾ ਹੋਣ ਵਾਲੀਆਂ ਜਹਿਰੀਲੀਆਂ ਗੈਸਾਂ ਦੇ ਦੁਸ਼ਟ ਪ੍ਰਭਾਵਾਂ ਤੋਂ ਬਚਾਅ ਹੋਇਆ ਉਥੇ ਕਿਸਾਨਾਂ ਨੂੰ ਆਰਥਿਕ ਲਾਭ ਵੀ ਹੋਇਆ। ਇਸ ਬਾਰੇ ਜ਼ਿਲ੍ਹੇ ਦੇ ਵੱਖ-ਵੱਖ ਪਿੰਡਾਂ ਦੇ ਕਿਸਾਨਾਂ ਨਾਲ ਗੱਲਬਾਤ ਕਰਕੇ ਇਹ ਗੱਲ ਸਾਹਮਣੇ ਆਈ ਕਿ ਕਿਸਾਨ ਭੋਨੇ ਦੀ ਪਰਾਲੀ ਸਾਡਨ ਕਾਰਨ ਮਿੱਟੀ ਦੀ ਸਿਹਤ, ਪਸ਼ਾਂ ਦੇ ਪ੍ਰਦੂਸ਼ਣ, ਮਨੁੱਖੀ ਸਿਹਤ, ਖੇਤੀ ਵਿਚ ਮਿੱਤਰ ਕੀੜਿਆਂ 'ਤੇ ਪੈਣ ਵਾਲੇ ਬੁਰੇ ਪ੍ਰਭਾਵਾਂ ਪ੍ਰਤੀ ਜਾਗਰੂਕ ਹੋਏ ਹਨ ਅਤੇ ਉਹ ਪਰਾਲੀ ਨੂੰ ਸਾਡਨ ਦੀ ਬਿਜਾਏ ਖੇਤਾਂ ਵਿਚ ਵਾਹ ਕੇ, ਬਾਰੇ ਦੇ ਤੌਰ 'ਤੇ ਵੱਚ ਕੇ ਜਿਥੇ ਕਮਾਦੀ ਕਰ ਰਹੇ ਹਨ, ਉਥੇ ਕੁਦਰਤੀ ਸੋਲਿਆਂ ਨੂੰ ਪ੍ਰਦੂਸ਼ਿਤ ਹੋਣ ਤੋਂ ਵੀ ਬਚਾਅ ਰਹੇ ਹਨ। ਜ਼ਿਲ੍ਹਾ ਪਠਾਨਕੋਟ ਅੱਜਦ ਕੁੱਲ ਵਿਚ ਲੱਖ ਪੰਜ ਹਜਾਰ ਪਰ

ਸ੍ਰੀ ਅਮਿਤ ਕੁਮਾਰ, ਡਿਪਟੀ ਕਮਿਸ਼ਨਰ, ਪਠਾਨਕੋਟ

ਅਜੀਤ

Press note by Deputy Commissioner Pathankot

ANJU AGNIHOTRI CHABA
JALANDHAR: DECEMBER 12

WHILE PUNJAB is at its wit's end over stubble burning, one of the kandi (semi-hilly) area districts of the state has shown the way to manage the crop residue. Pathankot district, which was carved out of Gurdaspur district some years back, has not put its fields on fire this year after harvesting paddy. According to the state agriculture department, though 1,755 FIRs have been registered against farmers this season for burning the straw after harvesting paddy, not a single FIR was registered in Pathankot district.

A letter from Pathankot Deputy Commissioner's (DC) office, dated November 29, to additional chief secretary (development) office, Punjab, Chandigarh, stated that there was no case of field fires in Pathankot after paddy harvesting this year and also no FIR was registered against any farmer.

DC's letter (a copy of which is with *The Indian Express*) also mentioned that even the pictures taken by NASA do not show any fire in Pathankot district. "The agriculture department and district administration have organised a large number of camps this year to educate farmers about the ill-effects of burning paddy straw," it said.

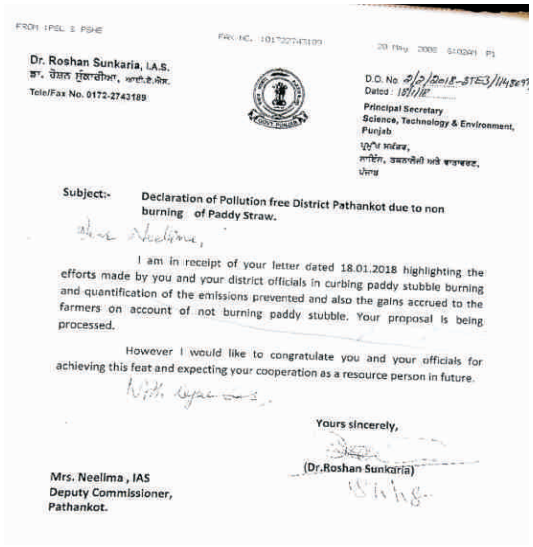
The DC has recommended that Pathankot district be declared pollution free as all its paddy crop residue has been sold to the Gujjar community (which rears a large number of cattle) at Rs 4,200 per acre that fetches nearly Rs 112 crores to the farmers of the district.

"There were 27,000 hectares under paddy in Pathankot which produced around 1.5 lakh metric tonnes of paddy straw and farmers got the benefit of around Rs 112 crore by not burning the straw. Also, they have saved the use of fertilisers and pesticides as well as crop friendly insects by not putting the fields on fire," said Pathankot agriculture department officer Dr Amrik Singh, adding that farmers were not only educated through camps but also via WhatsApp messages.

A letter from Punjab Pollution Control Board, Batala, also mentioned that no fire was reported in Pathnakot this year. Even a letter from the Senior Medical Officer, Pathnakot, dated November 28, mentioned that there was no alarming rise in pollution-related diseases in the district, especially related to the burning of paddy straw.

The agriculture department has already prepared a case in which action plan was prepared to control stubble burning and demanded Rs 1,602-crore from the Centre to provide subsidised machinery, which helps in straw management, to the farmers.

According to the state agriculture department, 1,755 FIRs have been registered against farmers this season. *Express*



FROM : PSL & PSHE

Dr. Roshan Sunkaria, I.A.S.
ਡਾ. ਰੋਸ਼ਨ ਸੁੰਕਾਰੀਆ, ਆਈ.ਏ.ਐਸ.
Tele/Fax No. 0172-2743189

D.O. No. 3/2/2018-STE3/114
Dated : 18/1/18

Principal Secretary
Science, Technology & Environment,
Punjab
ਪ੍ਰਮੁੱਖ ਸਕੱਤਰ,
ਸਾਇੰਸ, ਤਕਨਾਲੋਜੀ ਅਤੇ ਵਾਤਾਵਰਣ,
ਪੰਜਾਬ

Subject:- Declaration of Pollution free District Pathankot due to non burning of Paddy Straw.

Dear Neelima,

I am in receipt of your letter dated 18.01.2018 highlighting the efforts made by you and your district officials in curbing paddy stubble burning and quantification of the emissions prevented and also the gains accrued to the farmers on account of not burning paddy stubble. Your proposal is being processed.

However I would like to congratulate you and your officials for achieving this feat and expecting your cooperation as a resource person in future.

With best wishes.

Yours sincerely,

(Dr.Roshan Sunkaria)

Mrs. Neelima , IAS
Deputy Commissioner,
Pathankot.

The Indian EXPRESS January 19, 2018

Stubble burning: Pathankot gets a pat on the back for containing number of fires

on how to manage crop residue in a better manner. What Pathankot could achieve in terms of curbing residue burning will inspire farmers and other stakeholders to effectively manage residue and move towards sustainable agriculture.

हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

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