

# Livestock Entrepreneurship for Doubling Farmer's Income



## Proceedings and Way Forward

(Interface Meet of KVKs & Animal Husbandry Department)

09 | March | 2019



भातृअनु  
ICAR

ICAR-Agricultural Technology Application Research Institute  
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## PREAMBLE

Punjab has achieved extraordinary growth in agriculture and its contribution in making the country self reliant in food is well documented and appreciated. However, the state is now facing a serious crisis in traditional farming due to saturation in agricultural productivity and shrinking land holdings which causes a serious concern to the farmers. Therefore, to diversify the agriculture farming from the monoculture of wheat-rice system, livestock sector comes first as next best alternative. The livestock sector is important remunerative enterprise which provides a regular income and employment to the rural households especially to the small and marginal. Presently, animal husbandry is making a significant contribution to the Net State Domestic Product up to 13 percent and occupies about 31.42 percent of the state agricultural economy (GoP, 2015). The state contributes roughly 2.30 per cent of the total livestock population in the country and the proportion of workers engaged in livestock sector is as 28.5 percent of the total agricultural population. The dominant species of livestock in the state includes buffalo, cattle, goat and poultry. The region holds high ruminant population intensity and milk and dairy products hold a significant share in the food basket of households. The milk production and egg production in the state have already made commendable achievement and per capita availability of milk and eggs in Punjab is highest in the country. It is mainly due to increase income, high-income elasticities, consumption of meat and milk, rapid urbanization, population growth, and changing food habits etc. Realising the potential of livestock in the state economy and to achieve the target of doubling the farmer's income, the State Animal Husbandry Department (SAH) is providing highest priority for the removal of poverty and creation of self employment opportunities to the rural masses through wide range of livestock developmental programmes and schemes. On the other hand, Krishi Vigyan Kendras (KVKs) of various districts are the front runner in dissemination of need based livestock technologies developed by various academic and research institutions to the farmer's doorsteps as well as serving as feedback system to these institutions. Thus, both the institutions are working in their own way and addressing the needs of the livestock farmers over the years with beneficial effects.



In spite of the immense importance of animal husbandry in the state economy, livestock farming has not moved out from part-time farm production to a commercial activity and most of the livestock owners are unable to tap the potential of this sector. There exist many constraints; among them one of the major factors is working of different organisations for the same goal in isolation under their own umbrella. Though, in today's scenario, no single organisation can craft effective solutions to complex



problems. This creates a powerful motivation for involvement of organizations from different departments and collaborating them for a common goal. So as to conceptualise this, an Interface Meet of Krishi Vigyan Kendras and State Animal Husbandry Department of Punjab with the following objectives was organised:

- ➔ Holistic development of the livestock sector in convergence mode
- ➔ To deliberate on various issue related to livestock development in the state
- ➔ To develop different avenues of synergy for enhancing farmer's income

The Interface was organized by ICAR-Agricultural Technology Application Research Institute (ICAR-ATARI), Ludhiana on the theme “Livestock Entrepreneurship for Doubling Farmer's Income” on 09th March, 2019 at ICAR-ATARI, PAU Campus, Ludhiana. Dr. Shiv Prasad Kimothi, ADG (Coordination) ICAR, New Delhi was the chief guest of the programme and Dr. Inderjeet Singh, Director, Department of Animal Husbandry, Govt. of Punjab was the guest of honour during the event. Experts from National Bureau of Animal Genetic Resources (NBAGR), Karnal, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana and more than eighty five delegates including Deputy Directors (AH), Senior Veterinary Officers (SVO), Veterinary Officers (VO) of Animal Husbandry Department and Subject Matter Specialists (SMS) of Krishi Vigyan Kendra (KVK) interacted to develop strategies to work in convergence mode for enhancing the farmer's income.

## WELCOME AND INTRODUCTION SESSION

The event started with a warm welcome and a brief introduction of all the participants. Dr. Pragya Bhadauria, Scientist (LPM), coordinator of the meet briefed the house about the objective and technical programme of the Interface.

## TECHNICAL SESSION-I

The technical session was started with the expert lecture of National Fellow and Principal Scientist of ICAR-NBAGR, Karnal, Haryana, Dr. M. Mukesh on “Molecular Characterization of Native Cattle Breeds with Special Reference to A1/A2 Milk”. He briefly narrated the mandate of ICAR-National Bureau of Animal Genetic Resources (NBAGR) being nodal agency and premier institute for



**Dr. M. Mukesh, National Fellow and PS, NBAGR, Karnal**



characterization, conservation and utilization of the various animal genetic resources of the country. During the presentation, participants had shown a great zeal towards discussing the issues of cross-breeding v/s conservation of indigenous gene pool of livestock in the current scenario. They also thoroughly discussed about the issues related to acceptability of A1 and A2 milk among general public during the session. The discourse is followed by the second lecture on “Role of KVKs in Dissemination of Livestock Technologies in North India” by Dr. Manoj Sharma, Programme Coordinator, KVK Nawanshahr, Punjab who has given a detailed presentation on various technologies like mineral mixture, UMM blocks, silage, fodder technologies, mastitis kits developed by the State Agricultural Universities (SAUs) that has been tested in field conditions through On Farm Testing (OFT) and disseminated to the farming communities through Frontline Demonstrations (FLDs) by the KVK scientists. Later on Dr. S.S Randhawa, Professor, Veterinary Medicine GADVASU Ludhiana presented a field oriented presentation for the veterinary officials regarding the various “Breakthrough Technologies in Veterinary Medicine” encompasses the various health ailments of dairy animals including Bloat/ tympany, Traumatic Reticulo-Pericarditis (TRP) and their diagnosis through advance tools and techniques at field level which is of immense practical utility to the field veterinarians.



**Dr. Manoj Sharma**  
Programme Coordinator, KVK Nawanshahr



**Dr. S.S Randhawa**  
Professor (Veterinary Medicine), GADVASU

## TECHNICAL SESSION II

The second technical session was initiated by the lecture of Dr. Prahlad Singh, Head Veterinary Gynecology, GADVASU Ludhiana, on “Recent Reproductive Technologies in Farm Animals” comprising of the various latest technological advancement in term of Artificial Insemination (AI) its utility and constrains in field condition, Embryo Transfer Technology (ETT) and other advance breeding methods. He also presented a brief overview of ultrasonography for pregnancy diagnosis at field level. The presentation was followed by a couple of talk on “Entrepreneurship through Dairy Processing” by Dr. S. Siva Kumar, Assistant Professor, College of Dairy Science, GADVASU Ludhiana who briefed the house about the various possibilities for the farmers to take dairy farming activity as a business enterprise in the field of milk processing and value addition. The session was concluded with an informative lecture on “Conservation of Feed and Fodder Resource for Sustainable Livestock Production” covering the important aspects of hay and silage making along



with year round production of fodder crop for dairy animals by Dr. Balwinder Kumar, Programme Coordinator, KVK Tarn Taran. The lecture was well appreciated by the audience as of greater practical utility to the farmers in tackling the problem of shortage of feed and fodder in north India.



Dr. Prahlad Singh, GADVASU, Ludhiana



Dr. S. Siva Kumar, GADVASU, Ludhiana



Dr. Balwinder Kumar, KVK Tarn Taran

## INAUGURAL SESSION

The inaugural session began with the introductory remarks of Dr. Rajbir Singh, Director, ICAR-ATARI, Zone-I, Ludhiana. He welcomed the participants and gave a brief overview and mandate of the *Interface*. He further added that the purpose behind this event was to gather the important stakeholders of livestock development to a common platform in order to work in synergistic way. As agriculture remains the livelihood for more than 50 per cent of the state population and majority of the farmers have no alternate option but to continue agriculture farming. However, the agriculture sector in Punjab has reached a stage where its growth can only be sustained by subsidiary occupation or diversification of the enterprise. In present situation, relying on the growth of agriculture for doubling the farmer's income as envisaged by the Hon'ble Prime Minister of India by 2022 is not going to yield any positive outcome. Enhancing farmers' income can only be possible by integrating agriculture with animal husbandry. He further added that livestock, has untapped potential for income and employment generation for small and marginal farmers. He motivated the participants to actively participate by giving strong and practical recommendations which will pave way to clear cut roadmap to move forward in collaborative manner. He also urged the Department of Animal Husbandry, Punjab and Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana to join hands with Krishi Vigyan Kendras (KVKs) in overall development of the livestock sector. He defined the timeline of the discussion and invited the participants with their frank views.

After the inaugural address, Dr. H.K. Verma, Director Extension Education, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana narrated significant achievements of GADVASU, Ludhiana in the field of veterinary education, research and extension. He also informed the house about various latest technologies and interventions in the field of animal research which would serve useful for the unemployed youth and marginal farmers of the state who are interested in setting up their own business in livestock sector with limited resource and finance. He deliberated that, there is vast scope of small animal farming w.r.t pig, poultry and goat and even fisheries for resource-poor farmers and outlined the various avenues of livestock entrepreneurship for doubling farmer's income.



He also detailed about the services provided by GADVASU in the form of improved germplasm of Sahiwal cows, Murrah buffaloes, Beetal goats, Yorkshire pigs, Poultry and capacity building of farmers especially to the farm women at free of cost. In his talk he mentioned that in Punjab while the contribution of agriculture in total GDP is decreasing; on the contrary livestock is increasing. He emphasised that Buffalo should be promoted as “Black Gold” for uplifting the farmer's income and can be profitably used for milk, meat, hide etc. Scope of mozzarella cheese also opens market for entrepreneurship through buffalo rearing.



**Crop and Livestock GDP over Time in Punjab** (In Crores)

Year	Total Agr. GDP including Fisheries	Crop GDP	% share of Crop GDP	Livestock and Fisheries GDP	% share of Livestock and Fisheries GDP
1985-81	2422.2	1696.42	70.03	727.08	30.03
1990-91	8253.47	6116.01	74.10	2137.66	25.90
2000-01	26826.32	18791.21	70.42	7994.11	29.60
2010-11	42685.2	44673.37	88.88	19221.53	30.14
2015-16	82694.82	59672.92	64.10	23424.89	35.90

Livestock sector is important subsector of Punjab agriculture. Percentage share of Livestock & Fisheries GDP is continuously increasing.

Dr. H.K. Verma, DEE, GADVASU, Ludhiana

### OPEN DISCUSSION

After successful execution of all the sessions, an elaborated open discussion was organised between the participating stakeholders regarding various issues and prospects in the sector along with their potential solutions. Various queries and issues were raised by the field veterinarians of Punjab, Subject Matter Specialists (SMS) of the KVKs and officials from GADVASU, which were promptly taken care by the experts and panellists.

### Deliberation by Krishi Vigyan Kendras & State Agricultural University

Dr. Ajay Singh, SMS, KVK Fatehgarh Sahib discussed that relying and motivating farmers for enhanced livestock production of various animal species alone will not ensure doubling farmers' income. We have to move forward beyond production, towards linking farmers to the market of big cities to harness the full potential of their produce. Meeting market demands requires a shift in mindset from “Farm to fork” to “Fork to Farm” approach so that farmer themselves get visibility among the consumers. Secondly, market- intelligence must be made available to the primary producers using innovative partnerships with other line departments.

Dr. A.P.S Dhaliwal, SMS, KVK Bathinda stated that despite being one of the leading milk producing states in India with highest per capita availability of milk, still the farmers are not getting enough profit due to lack of pricing model for milk rates which varies with the degree of Fat, SNF, region, season, and market. At present, the milk prices are fixed by private players, middle man, individual traders and vendors rather than government. There should be a state price policy for milk and other livestock products as adopted by some of the states of south India in order to enhance income of the livestock rearers. Similarly, there is lack of interest in milk processing among the milk producers. The



organized dairy sector handles only about 18 per cent of the milk, majority of which is either marketed as pasteurised milk and milk powder whereas only a small quantity is utilized for making high-end dairy products such as butter, paneer, cheese, baby food, ice cream etc. A systematic planning and development of various segments of input delivery, procurement of livestock produce, processing, value addition, marketing and extension services is needed to be take care of this issue.



**Dr. Ajay Singh, KVK Fatehgarh Sahib**



**Dr. A.P.S Dhaliwal, KVK Bathinda**

Dr. Satbir Singh, SMS, KVK Sangrur raised the issue of non acceptance of pig farms near human dwellings. He further emphasized that there should be clear cut guidelines for opening animal farms especially pig farms and regulatory frameworks to analyze and manage associated risks with the livestock farms w.r.t zoonosis, biosecurity, food safety etc. Also environmental issues should be suitably outlined by the government, so that same may be communicated to the livestock owners during the training programmes.



**Dr. Satbir Singh, KVK Sangrur**



**Dr. P.S. Tanwa, KVK Barnala**

Dr. P.S Tanwar, Associate Director, KVK Barnala, deliberated that the KVKs trained the farmers in various types of livestock farming, but still many of the beneficiaries are not able to open their farms due to multiplicity of factors. The major constraint is the availability of bank loan to the farmers especially with small-sized land holdings. Credit to animal husbandry has not been treated at par with crop loan even though animals generate a continuous stream of output. The facility of the Kisan Credit Cards (KCC) has also not been extended to the livestock farmers. Timely availability of adequate credit is essential for promotion of this sector. Although, availability of cooperative credit has increased overtime for members of the cooperative societies, but still appreciable number of farmers are dependent on non-institutional sources. Similarly, appropriate incentives should be offered by the government to encourage farmers to adopt livestock farming, especially for dairying at a desired scale.



### Deliberation by Animal Husbandry Department

Dr. Kewal Arora, VO, Mumara, Faridkot raised the queries related to clear-cut recommendation for cross breeding and Artificial Insemination (AI) for genetic improvement of various livestock species and conservation of native germplasm. He pointed out that again we are moving back from cross breeding to conservation of indigenous genetic resources which will hamper cross-breeding programmes in general. Similarly, the awareness regarding acceptability of A1 and A2 milk among the general public is an important concern w.r.t to promotion of cross-breeds by the department. So we will have to collectively decide that in which direction to move ahead i.e. towards indigenous or cross breed germplasm.

Dr. Subhash Chander, VO, Begu Mahu, Ferozpur suggested that any institution involved in training should call proposals for need based trainings or institution-wise Training Need Assessment (TNA) should be done in order to find out the actual training needs of the officials, so that the training institution will frame out their training calendar on practical basis rather than theoretical basis. This will immensely help out the trainees for improving their field performance.

Dr. Surinder Kapoor, SVO, Ferozpur stated, that at present milk testing is a paid service offered by Department of A.H and Dairy Development Board to the farmers. Looking at the necessity of quality milk production, it should be promoted among the primary milk producers by providing them the free milk testing facilities at Department of A.H and the facilities may be introduced at KVKs also.

Dr. Kamaljit Singh, VO, Barnala raised the issue of immense need of state-of-art modern meat processing plant especially for pork and mutton, as it is the biggest hurdle for flourishing these enterprises at a larger scale for meeting the demand within or outside the country.



Veterinary Officers from department of Animal Husbandry interacting with the house

Dr. Jagsir Singh, VO, Bathinda spoke that due to indiscriminate breeding our indigenous germplasm suffered genetic erosion. Now it is realized that our native animals though less productive yet possess certain favorable genetic attributes like tolerance to diverse climatic stress, superior conversion ability for poor quality forages and crop residues and better resistance to many tropical diseases. It was therefore; felt that native breeds should be protected from further degradation by educating farmers through various platforms.

Dr. Jagmohan Singh, VO, Ajnala suggested that failure stories of the livestock farmers should also be documented in line with success stories, so that the emerging livestock entrepreneurs may take lessons from them for running their business successfully.





Veterinary Officers from department of Animal Husbandry interacting with the house

## RELEASE OF PUBLICATION

In Punjab, among various livestock enterprises, pig farming is flourishing as a remunerative occupation among the farmers due to faster economic return with little investments. In this context, ICAR-ATARI, Ludhiana published a technical bulletin entitled “Pig Farming-Promising Agri-Business in Punjab” encompasses comprehensive information of piggery along with the case studies of role model farmers engaged in pig farming from Punjab. The same was also released during this occasion. The chief guest congratulated ICAR-ATARI, Ludhiana for bringing out this publication which would enhance the awareness of piggery among various stakeholders and will inspire many more budding entrepreneurs for replication.



## REMARKS BY THE GUEST OF HONOUR

Dr. Inderjeet Singh, Director, Animal Husbandry Department, GoP appreciated the efforts of ICAR-ATARI, Ludhiana for this interface meet and assured the full support of department to the KVKs in all the extension activities. He added that we all are working for the same cause in our own cocoons, but by these platforms, we can join our hand to work at grass root level in convergence. He also emphasized that Animal Husbandry has potential to overcome the suicidal tendency among farmers of Punjab. At present, the contribution of livestock sector in total agricultural GDP of Punjab is 36% which we have to raise up to 50% by our collaborative efforts. Moreover, the system has to follow two ways learning process. So we have to learn from the indigenous knowledge of the farmers and boost them with the proven technologies of the research system via KVKs and State Department to uplift their income. He also informed the house that the department has also started block level milking competition in order to identify the quality germplasm of dairy animals among the farming community. He also suggested that in order to identify quality germplasm we have to consider many aspects irrespective of phenotypic or production characteristic like in goats we have to give more emphasis on kidding percentage rather than milk yield. To enhance entrepreneurship among



livestock farmers, processing outlets or free sale counters will be promoted in promising districts of Punjab. He also suggested overcoming the non availability of loan to the livestock farmers, banks officials should also be invited as recourse person during the training programmes to make them acquaintance with the real situation of the farmers.

### **REMARKS BY THE CHIEF GUEST**

The chief guest, Dr. Shiv Prasad Kimothi, ADG(TC), ICAR, New Delhi in his presidential address spoke that the desired goals will be fulfilled only by integrating various farming systems. Among livestock, farmers can also opt for Fisheries, Poultry, Piggery and Goat farming for diversification. Simultaneously, processing is the need of the hour and value addition of livestock products ensures better profitability in these professions. The entire system has to give more focus on processing and marketing along with production. He also informed the house that Technology Business Incubators (TBI) established at various organisations are playing key roles in promoting entrepreneurial culture and providing support to the start up among the beginners. In his speech he also raised the important issue of fodder scarcity which is one of the major hindranc for economic livestock production as feed cost causes major chunk of expenditure, for this we have to promote fodder conservation methods such as hay and silage in a big way. He also quoted the example of Baba Ramdev who has also started manufacturing silage. He urged the participants to fully harness the ICT tools such as WhatsApp, voice messages, Facebook etc in order to reach the unreached farmers. He appreciated the efforts of ICAR-ATARI, Ludhiana in controlling the air pollution through effective management of paddy straw and encouraged the house to work in such a missionary level to uplift the farmer's income through animal husbandry.



**Dr. Shiv Prasad Kimothi**  
ADG, (TC), ICAR- New Delhi



**Dr. Inderjeet Singh**  
Director, Dept. of A.H, GoP



### CONCLUDING REMARKS

Concluding the Interface, Dr. Rajbir Singh, Director, ICAR-ATARI, Zone-1, Ludhiana emphasised the gathering to work synergistically in order to develop climate-resilient and nutri-sensitive villages through “Tandurust Punjab”. He also suggested the identification of such districts of Punjab which are specific in certain aspects of fodder, animal resources etc to convert them into hubs. Further, strengthening and modernization of milk processing facilities is need of the hour to handle the increased milk production as well as to provide a remunerative price to the producers. Similarly, processing of livestock products requires special machinery and equipments which are unaffordable to the small scale farmers. These equipments can be made available to them by promoting custom hiring centre at KVK or A.H departments. He also narrated that small ruminants and pig farming has a potential for good economic returns to the small and marginal farmers to take up on a commercial scale, therefore efforts should be made in this direction. As animal husbandry activities are mainly women centric, therefore in order to empower these farm women, free of cost on-farm trainings and extension services at their door steps should be organised. Further, he narrated to organise more unified activities like kisan melas, skill development trainings, animal health camps etc to incline more and more farmers towards livestock farming. He also drew attention towards increasing the visibility of these activities through print and electronic media and insisted to distribute CDs and literatures to the farmers to make them aware about various avenues and technologies in livestock sector. At the end, he dwells upon the integration of all the collaborating institutions for overall development of the farming community and invited the A.H officials to visits the nearest Krishi Vigyan Kendra of their district.



**Dr. Rajbir Singh**  
**Director, ICAR-ATARI, ZONE-I**  
**LUDHIANA**

### VOTE OF THANKS

Dr. Pragya Bhadauria, scientist, ICAR-ATARI presented the vote of thanks to the dignitaries and participants for their patience listening and cooperation throughout the programme and successful completion of the event.



## KEY RECOMMENDATIONS

Livestock can play a significant role in doubling farmers' income. With a well planned synergistic approach, mutual utilization of resources and good governance in implementation, this target is achievable. The key recommendations and suggestions came out of the interface are summarized below:

### ➔ Strengthening Livestock Extension

The animal husbandry institutions needs to reorient themselves for new roles in addition to the health aspects so as to be more pro extension. Veterinary officers along with KVKs extension scientist will arrange camps and fairs to disseminate information on various aspects of livestock production and awareness regarding ongoing programmes, projects and schemes initiated by the state and central government for livestock development.

### ➔ Integrated Approach

The various institutions should work on doubling farmers' income by integration of available resources. KVKs should undertake the agro ecosystem analysis in their respective jurisdiction and suitable IFS models should be promoted in animal husbandry practices best suited for them in that climate and area.

### ➔ Strengthening Livestock Marketing

Increases in livestock production alone will not ensure doubling farmers' income. The livestock markets are under-developed, which is a significant barrier to the commercialization of livestock production. To ensure the farmers for marketing their animal produce at the best profitable rate. Market- intelligence must be made available to producers using innovative partnerships and communication technologies. Meeting market demands requires better market price realization, organizing farmers and linking them with market, marketing chain through various extension approaches.

### ➔ Enabling Pricing Structure

Animal Husbandry will be fruitful only when farmers are ensures with better selling price for livestock and their products especially for milk. Government should fixed prices (For producers and consumers) for Government Milk Schemes, Cooperative Unions and Private Dairies. The price structure should be remunerative to producers, competitive to local market prices. For milk it should be based on milk constituents i.e. FAT and SNF. Producers should be incentivised for providing clean antibiotic free milk and discourage adulteration and promote quality consequences.

### ➔ Conservation of Indigenous Genetic Resources

Under the climate change scenario, it is realized that the native Indian farm animals though less productive yet possess certain favorable genetic attributes like tolerance to diverse climatic stress, superior conversion ability for poor quality forages & crop residues and better resistance to many tropical diseases. It is therefore; felt that native breeds should be protected from further degradation. Simultaneously, breeds with special characteristic or promising genotype should be identified from field level for notification and further replication.



## ➔ Promoting Livestock Farming as Entrepreneurial Activity

Livestock farmers needed to be transformed into entrepreneur to double the income by adopting innovative approach and technologies. More emphasis should be given for promoting new generation farmer collectives such as, Commodity Interest Groups (CIGs), Village Produce Organizations (VPOs), Farmers Producers Organizations (FPOs) and Farmer Producer Companies (FPCs), Cooperative societies and linking these groups to post-production activities that allow farmers to capture greater value and to link directly with terminal markets.

## ➔ Networking of Institutions and Knowledge Base

Veterinarian should take the lead in developing a platform for enhancing farmer's income through livestock. For this to happen, this interface recommends that all extension approaches and promising technologies should reach to the farmers door steps. The KVKs should integrate their research agenda and front line extension plans in accordance with the A.H department or vice versa.

## ➔ Capacity Building

The KVKs, SAUs, ICARs and A.H department should assume responsibility for reskilling and capacitating the manpower at all levels. The focus of capacity re-building should be on the principles of agri-business extension, in contrast to the production-centric extension practiced hitherto. Along with this, these departments also give training on new subsidiary occupation like fishery, piggery, poultry etc. to rural farmers, youth and to the women at subsidized rates or free of cost.

## ➔ Policy measures

The livestock sector not only proved to be a good source of income generation but also provides employment opportunities to the unemployed. So, appropriate policy measures should be undertaken to strengthen animal health, improving breed of animal, veterinary services, proper marketing of livestock products and providing necessary services and information for strong livestock economy of Punjab. Livestock based policy should be based on the principles of social acceptability, economic feasibility, technical viability and resource conservation ability.





**List of Participants from Various Institutions**

S.No.	Name of Participant	Designation/ Place
1.	Dr. Shiv Prasad Kimothi	ADG, (TC), ICAR- New Delhi
2.	Dr. Inderjeet Singh	Director, Animal Husbandry, Govt. of Punjab
3.	Dr. Rajbir Singh	Director, ICAR-ATARI, Ludhiana
4.	Dr. H.K. Verma	DEE, GADVASU, Ludhiana
5.	Dr. Keshava	Principal Scientist, ICAR-New Delhi
6.	Dr. M. Mukesh	National Fellow & PS NBAGR, Karnal
7.	Dr. Manoj Sharma	Programme Coordinator, KVK Nawanshahr
8.	Dr. S.S Randhawa	Professor (Veterinary Medicine), GADVASU
9.	Dr. Prahlad Singh	Head Veterinary Gynecology, GADVASU
10.	Dr. S. Siva Kumar	Assistant Professor, GADVASU
11.	Dr. Balwinder Kumar	Programme Coordinator, KVK Tarn Taran
12.	Dr. Pragya Bhadauria	Scientist (LPM), ICAR-ATARI, Ludhiana
13.	Dr. Preeti Mangain	Principal Scientist, ICAR-ATARI, Ludhiana
14.	Dr. Ashish Santosh Murai	Scientist, ICAR-ATARI, Ludhiana
15.	Dr. S.K. Kansal	Head Vet. Ext., GADVASU, Ludhiana
16.	Dr. Y.S. Jadoun	Assistant Professor, GADVASU, Ludhiana
17.	Dr. Om Prakash Malav	Assistant Professor, GADVASU, Ludhiana
18.	Dr. Amit Sharma	Assistant Professor, GADVASU, Ludhiana
19.	Dr. Bharti	Assistant Professor, GADVASU, Ludhiana
20.	Dr. P.S. Tanwar	Associate, Director, KVK Barnala
21.	Dr. Yashwant Singh	Programme Coordinator, KVK Mohali
22.	Dr. A.P.S. Dhaliwal	KVK Bathinda
23.	Dr. Bhanu Prakash Ch.	KVK Booh, Tarn Taran
24.	Dr. Ajay Singh	KVK Fatehgarh Sahib
25.	Dr. Munish Kumar	KVK Ferozepur
26.	Dr. Arunbeer Singh	KVK Hoshiarpur
27.	Dr. Tejbeer Singh	KVK Nawashahr
28.	Dr. Vikas Phulia	KVK Mohali
29.	Dr. Bharat Singh	KVK Mansa
30.	Dr. Shashi Pal	KVK Mohali
31.	Dr. Madhu Shelly	KVK Muktsar
32.	Dr. Parminder Singh	KVK Patiala
33.	Dr. Aparna	KVK Ropar
34.	Dr. Satbir Singh	KVK Sangrur
35.	Dr. Prem Kumar	KVK Jammu
36.	Dr. Vijay Kumar Sharma	KVK Kathua
37.	Dr. G.N. Jha	KVK Doda
38.	Dr. Parul Gupta	KVK Rajouri
39.	Dr. Deepali Kapoor	KVK Una
40.	Dr. Amrik Singh	Deputy Director Bathinda
41.	Dr. Sukhwinder Singh Mann	Deputy Director Barnala



42.	Dr. Jagmohan Singh	VO Ajnala
43.	Dr. Subhash Chander	VO Begu Mahu (Ferozepur)
44.	Dr. Ganpat Singh	VO Bhagalpur Jagran (Mansa)
45.	Dr. Jagsir Singh	VO Bhagiwander (Bathinda)
46.	Dr. Rajesh Kumar	VO Chetanpura (Amritsar)
47.	Dr. Jiwanjot Kaur Dhaliwal	VO Jaragarh
48.	Dr. Kuldeep Sohal	VO Jaulan Kalan (Mohali)
49.	Dr. Jasdeep Singh	VO Jaura (Tarn Taran)
50.	Dr. Navjot Kaur	VO Khalwara(Kapurthala)
51.	Dr. Kamaljeet Singh	VO Lohgarh (Barnala)
52.	Dr. Munish Goyal	VO Mann Singh Wala (SAS Nagar)
53.	Dr. Habib	VO Miani
54.	Dr. Bikramjeet Singh	VO Nandpur Kesho (Patiala)
55.	Dr. Surjeet Singh	VO Pakhi Kalan (Faridkot)
56.	Dr. Pardeep Singh Bhullar	VO Rania (Moga)
57.	Dr. Jagjeet Singh	VO Shahbazpur (Tarn Taran)
58.	Dr. Shamsher Pal Singh Bajwa	VO Sri Hargobindpur (Gurdaspur)
59.	Dr. Amarpreet Singh	VO CVH (Andhiwala)
60.	Dr. Ramesh Kumar	VO CVH (Ferozepur)
61.	Dr. Jagmohan Singh	VO CVH (Ajnala)
62.	Dr. Dat Ram	VO CVH Phillaur (Jalandhar)
63.	Dr. Rajesh Kumar	VO CVH Chetanpur
64.	Dr. Lovepreet Singh	VO CVH Chimnewala
65.	Dr. Sandeep Pal Singh Bhullar	VO CVH Chugiana
66.	Dr. Jaswinder Singh	VO CVH Dakala (Patiala)
67.	Dr. Rajni Garg	VO CVH Dakha
68.	Dr. Rakesh Kumar	VO CVH Dhanaula (Barnala)
69.	Dr. Ramandeep	VO CVH Dher (Ropar)
70.	Dr. Anmol Mehrook	VO CVH Ghallu
71.	Dr. Jatinder Singh	VO CVH Hodla Kalan
72.	Dr. Neelam Grover	VO CVH Jodhan
73.	Dr. Navdeep Singh	VO CVH Karora (SAS Nagar)
74.	Dr. Gaurav Sharma	VO CVH Kotli Than Singh (Jalandhar)
75.	Dr. Kewal Arora	VO CVH Mumara (Faridkot)
76.	Dr. Jasdev Singh	VO CVH Phambra
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