

For Office Use Only



अखिल भारतीय समन्वित अनुसंधान परियोजना- चारा फसले एवं उपयोगिता
(भारतीय कृषि अनुसंधान परिषद)

**ALL INDIA COORDINATED RESEARCH PROJECT
ON FORAGE CROPS & UTILIZATION
(Indian Council of Agricultural Research)**



कार्यवृत्त - राष्ट्रीय समूह बैठक रबी 2018
चौधरी चरण सिंह कृषि विश्वविद्यालय, हिसार
सितम्बर 7-8, 2018

**Proceedings of the National Group Meeting : Rabi 2018-19
held at**

**CCS Haryana Agricultural University, Hisar
September 7-8, 2018**

परियोजना समन्वयन इकाई,
अखिल भारतीय समन्वित अनुसंधान परियोजना- चारा फसले एवं उपयोगिता
भा. कृ. अनु. प.- भा. च. एवं चा. अनु. सं.-- झाँसी-284003 (उ.प्र.)

<http://aicrponforagecrops.res.in>

**Project Coordinating Unit
All India Coordinated Research Project on Forage Crops & Utilization
ICAR - IGFRI, Jhansi - 284003 (U.P.)**

<http://aicrponforagecrops.res.in>

AICRP ON Forage Crops and Utilization
Tech. Pub. Number- 5/2018-19

Proceedings of the National Group Meeting: Rabi 2018-19

(Held at CCS Haryana Agricultural University, Hisar during September 7-8, 2018)

This document is meant for official use only of the AICRP (FC&U) Centres, Coordinating Unit, ICAR Headquarters and Forage Scientists.

Compilation and Editing

Dr. A. K. Roy
Dr. R. K. Agrawal
Dr. N.R. Bhardwaj

Editorial Assistance

Shri H. K. Agrawal
Shri Ratnakar Patel

Published by

Project Coordinator
AICRP on Forage Crops & Utilization,
ICAR-IGFRI, Jhansi-284 003
Uttar Pradesh

Phone/Fax: 0510-2730029
Email: pcforage@gmail.com
Web site: <http://www.aicrponforagecrops.res.in>

September, 2018

PREFACE

The National Group Meet, *Rabi* 2018-19 of All India Coordinated Research Project on Forage Crops & Utilization was organized with the objectives to review the accomplishments of programme executed during *Rabi* 2017-18 at different coordinating and cooperating centers, In-House research activities, Tribal Sub-Plan and Forage Technology Demonstrations (FTDs) and also to formulate technical programme for *Rabi* 2018-19 as well as to discuss future thrust areas for fodder research. The meeting was jointly organized by Indian Council of Agricultural Research, New Delhi and CCS HAU, Hisar, during September, 7-8, 2018.

The meeting was attended by the scientists engaged in forage research working under coordinating and collaborating centers located at different SAUs, ICAR institutes and NGOs. Representatives of NDDB, Regional fodder stations of DAHD&F, Government of India, seed companies, private companies, state Department of Animal Husbandry and other related departments also participated in the programme and being important stakeholders contributed in the development and refinement of programme and strengthening linkages for future course of action. Members of electronic and print media of the region also participated in the meet.

This compilation contains brief report of National Group Meet, *Rabi* 2018-19 covering highlights on forage crop improvement, forage crop production and forage crop protection technologies generated, proceedings of different technical sessions and technical programme for the coming *Rabi* season 2018-19. The finalized technical programme on forage crop improvement, forage crop production and forage crop protection for *Rabi* 2018-19 have been given in annexure(s).

The successful conductance of the event is attributed to the joint efforts made by the ICAR/IGFRI authorities, authorities of CCS HAU, Hisar, participating scientists, Principal Investigators and staff of the Project Coordinating Unit and IGFRI, Jhansi. The team of All India Coordinating Research Project on Forage Crops & Utilization sincerely acknowledges their active involvement, suggestions and cooperation for successful organization of the meeting.

We sincerely thank the authorities at ICAR, New Delhi, particularly Dr. T. Mohapatra, Secretary, DARE and Director General, ICAR; Dr. A. K. Singh, Deputy Director General (Crop Science); Dr. R.K. Singh, Assistant Director General (FFC); Dr. Dinesh Kumar, Principal Scientist (FFC) and other members of Crop Science Division for their guidance, support and encouragement. Support received from past and present Directors of IGFRI, Jhansi and scientific, technical, administrative and supporting staff is also acknowledged. The authorities and organizing committee of CCS HAU, Hisar, are especially thanked for successful and smooth conductance of the meeting.

A.K. Roy
Project Coordinator

CONTENTS

Item	:	Details	Pages
Summarized recommendations	:	Summarized recommendations & Technologies	1-2
Technologies generated	:	Technologies generated	3-4
Inaugural Session	:	Inaugural Session	5
Technical Session-I	:	Interactive Session with Stakeholders	6
Technical Session-II	:	Breeder Seed Production	7
Technical Session-III	:	Discipline-Wise Report	8-9
Technical Session-IV	:	Formulation of Technical Programme	10-13
	:	Crop Improvement	10
	:	Crop Production	11-12
	:	Crop Protection	13
Technical Session-V	:	Review of Centre-Wise Activities	14
Technical Session-VI	:	FTD & TSP Formulation	15
Technical Session -VII	:	PGR/Breeding/Production/Protection issues	16
Technical Session-VIII	:	Scientific , Administrative and Financial Issues	17
	:	Varietal Identification Committee Meeting	18
	:	Discipline-wise Technical Programme	19-37
Annexure-A	:	Forage Crop Improvement Trials	19-26
Annexure-B	:	Forage Crop Production Trials	27-34
Annexure-C	:	Forage Crop Protection Trials	35-37
Annexure-D	:	List of Participants	38-41
Annexure-E	:	Glimpses of Media Coverage	42-43

Recommendations of the National Group Meeting Rabi 2018-19 under AICRP on FORAGE CROPS & UTILIZATION held on 07-08 September 2018 at CCS HAU, Hisar

Varieties Identified

- **Fodder oat (single cut) entry HFO-427:** Developed by CCS HAU, Hisar and identified for cultivation for the states of Telengana, Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala under irrigated condition during Rabi season. The entry has superiority in terms of green and dry fodder yield, per day productivity, seed yield, leafiness and responsiveness to fertilizers *vis a vis* national and zonal checks.
- **Fodder oat (single cut) entry JHO-2015-1:** Developed by IGFR, Jhansi and identified for cultivation for the states of Himachal Pradesh and Jammu & Kashmir under irrigated condition during Rabi season. The entry has superiority in terms of green, dry fodder yield, per day productivity, crude protein content, crude protein yield and responsiveness to fertilizers *vis a vis* national and zonal checks.
- **Berseem entry JO-05-9:** Developed by JNKVV, Jabalpur and identified for cultivation in the states of Uttarakhand, Haryana, Punjab, Uttar Pradesh, and Rajasthan under irrigated condition during Rabi season. The entry performed at par in terms of green, dry fodder yield *vis a vis* national and zonal checks. However the entry has shown superior performance for seed yield and identified considering the shortage of Berseem seed in the country.

Forage Production Technologies

- For southern dry zone of Karnataka, in irrigated as well as rainfed ecosystem, planting of Signal grass variety DBRS-1 at 60 X 60 cm spacing with supplementation of nitrogen 30 Kg/ha after each cut is recommended for higher green fodder (550q/ha), dry matter (125q/ha).
- In hill zone of Himachal Pradesh and Jammu and Kashmir, cultivation of sole annual rye grass variety ATMA (HP) is recommended. It has potential to produce up to 550 q green or 125 q dry matter per hectare.
- Under sodic soils of Uttar Pradesh, Oat variety NDO-951 is recommended for growing during Rabi season for higher fodder production. The technology produced 570q green fodder and 140 q, dry matter and 10.8 q crude protein yields per hectare with 5.0q green fodder per day productivity.
- In West Bengal, application of Zinc sulphate @ 20 kg/ha along with Borax @ 10 kg/ha is recommended for seed production of oats in red and lateritic soil. The technology produced 33.6 q oat seeds, 3.41 kg crude protein.
- In Assam, oat + pea food –forage intercropping in replacement series at 3: 3 row ratio supplemented with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher green forage (747.02 q/ha), dry matter yield (50.76 q/ha), crude protein yield (8.43 q/ha).
- In Chhattisgarh, for BN Hybrid irrigation at 1.0 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1000 q/ha green fodder).
- In Manipur, Oat + chickpea food forage intercropping in a replacement series at 3:3 row ratio along with 50% N through vermincompost + 50% N through inorganic

- fertilizer is recommended for higher fodder yield and better quality fodder. The technology also promises production up to 700 q green forage equivalent yield, 85 q dry matter yield.

Forage Protection Technologies

- In Punjab and Haryana, foliar application of carbendazim @1 kg/ha after first and second cut is recommended for management of stem rot disease in Egyptian clover seed crop.
- In Maharashtra, for the management of *Spodoptera litura* in lucerne, foliar application of SNPV @ 1 ml/lit + *B. bassiana* @ 5 g/lit of water at 8 pm is recommended.
- In Maharashtra, Punjab and Haryana, foliar application of HaNPV@1 ml/lit + *B. bassiana* @ 5 g/lit of water is recommended for the management of *H. armigera* in lucerne and berseem seed crop respectively.

In addition to above specific recommendations of varieties, production and protection technologies, following general recommendations have also been made.

- Voluntary center from Dr BSKVV, Karjat should be changed to Livestock Research Farm, Nileli center of same university.
- All the centers should restrict expenditure within the approved budget only. If expenditure on salary head is exceeding the approved budget, the number of posts should be reduced at center level.
- Vacant posts in the administrative and supportive cadre especially drivers and stenographers should not be filled at any centers till further orders. It should be strictly followed that no person in higher scale be placed in AICRP on FC & U than sanctioned post. Retirement benefits should not be drawn from the ICAR – AICRP FC&U funds.
- After identification of varieties, proposal should be submitted to CVRC within three months after getting the IC number from NBPGR and finger printing of variety.
- The programme on bio-fortification in forage crops as like other grain crops should be taken up.
- Germplasm and breeding material of cereal forage crops like Maize, Oat should be screened for total sugar (Brix) and Zinc content as additional quality parameter.
- All the centers should take utmost care to produce the allocated breeder seed as it is a national commitment. The centers were also advised to communicate the status of excess breeder seed production to the PC, so that steps would be taken up for its disposal.
- All the centers should sensitize various state and central departments Agriculture / Animal husbandry /NSC/SSC/Milk federations etc. about giving breeder seed demand of newly released varieties. All the centers should take initiative and become proactive for popularizing varieties developed by their centers and increase breeder seed demand by state departments.
- Regarding Tribal –Sub-Plan, It was suggested that beneficiaries will have to be selected only in 39 districts of country under TSP as identified by the Govt. of India. However on going programme may continue at lower scale.
- All the centers are requested to follow the financial guidelines issued by ICAR/ Ministry of finance regularly.

TECHNOLOGIES GENERATED

Varieties Identified: The following varieties were identified by the VIC during National Group Meet (*Rabi* -2018-19) of AICRP (Forage Crops)

- **Fodder oat (single cut) entry HFO-427:** Developed by CCS HAU, Hisar and identified for cultivation for the states of Telengana, Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala under irrigated condition during Rabi season. The entry has superiority in terms of green and dry fodder yield, per day productivity, seed yield, leafiness and responsiveness to fertilizers *vis a vis* national and zonal checks.
- **Fodder oat (single cut) entry JHO-2015-1:** Developed by IGFRI, Jhansi and identified for cultivation for the states of Himachal Pradesh and Jammu & Kashmir under irrigated condition during Rabi season. The entry has superiority in terms of green, dry fodder yield, per day productivity, crude protein content, crude protein yield and responsiveness to fertilizers *vis a vis* national and zonal checks.
- **Berseem entry JO-05-9:** Developed by JNKVV, Jabalpur and identified for cultivation in the states of Uttarakhand, Haryana, Punjab, Uttar Pradesh, and Rajasthan under irrigated condition during Rabi season. The entry performed at par in terms of green, dry fodder yield *vis a vis* national and zonal checks. However the entry has shown superior performance for seed yield and identified considering the shortage of Berseem seed in the country.

Forage Production Technologies

- For southern dry zone of Karnataka, in irrigated as well as rainfed ecosystem, planting of Signal grass variety DBRS-1 at 60 X 60 cm spacing with supplementation of nitrogen 30 Kg/ha after each cut is recommended for higher green fodder (550q/ha), dry matter (125q/ha), net monetary returns (28030 Rs/ha) and B:C ratio of 2.07.
- In hill zone of Himachal Pradesh and Jammu and Kashmir, cultivation of sole annual rye grass variety ATMA (HP) is recommended. It has potential to produce up to 550 q green or 125 q dry matter per hectare. The technology can earn net return of Rs. 87257 with B: C ratio (1.97).
- In Hill and North West zone, sowing of sorghum and bajra hybrids in lines @ seed rate ratio of 25:75 (10 kg sorghum + 12 kg bajra hybrids) of their recommended rates has potential to produce 650 q/ha green forage or upto 130 q dry matter and 10.66 q crude protein yield /ha during Kharif season. The technology may earn net returns of Rs. 71354/ha and B:C ratio (3.41).
- Under sodic soils of Uttar Pradesh, Oat variety NDO-951 is recommended for growing during Rabi season for higher fodder production. The technology produced 570q green fodder and 140 q, dry matter and 10.8 q crude protein yields per hectare with 5.0q green fodder per day productivity. The technology resulted in net monetary return of Rs 65000 with BC ratio of 2.92.
- In West Bengal, application of Zinc sulphate @ 20 kg/ha along with Borax @ 10 kg/ha is recommended for seed production of oats in red and lateritic soil. The technology produced 33.6 q oat seeds, 3.41 kg crude protein. The net return was Rs. 56438/ha with B:C ratio of 2.75 from seed production of oats.
- In Assam, oat + pea food –forage intercropping in replacement series at 3: 3 row ratio supplemented with 50% N through vermicompost + 50% N through inorganic

- fertilizer is recommended for higher green forage (747.02 q/ha), dry matter yield (50.76 q/ha), crude protein yield (8.43 q/ha) and net return (Rs 61548/ha).
- For propagation of bajra napier hybrid, the planting of two eye budded root slips are recommended, as this ensures higher and early plant establishment and produces the higher green fodder, dry fodder, crude protein yields and remuneration.
- In Chhattisgarh, for BN Hybrid irrigation at 1.0 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1000 q/ha green fodder), net monetary return (Rs 62000) and B: C ratio (1.86).
- In Punjab, for BN Hybrid irrigation at 1.2 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1700 q/ha Green fodder), net monetary return (Rs 8500) and B: C ratio (1.83).
- In Manipur, Oat + chickpea food forage intercropping in a replacement series at 3:3 row ratio along with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher fodder yield and better quality fodder. The technology also promises production up to 700 q green forage equivalent yield, 85 q dry matter yield and net return of Rs. 78499/ha.

Forage Protection Technologies

- In Punjab and Haryana, foliar application of carbendazim @1 kg/ha after first and second cut is recommended for management of stem rot disease in Egyptian clover seed crop.
- In Maharashtra, for the management of *Spodoptera litura* in lucerne, foliar application of *SNPV* @ 1 ml/lit + *B. bassiana* @ 5 g/lit of water at 8 pm is recommended.
- In Maharashtra, Punjab and Haryana, foliar application of *HaNPV*@1 ml/lit + *B. bassiana* @ 5 g/lit of water is recommended for the management of *H. armigera* in lucerne and berseem seed crop respectively.

INAUGURAL SESSION

The National Group Meeting of the All India Coordinated Research Project on Forage Crops and Utilization was inaugurated on 07th September, 2018 at CCS Haryana Agricultural University, Hisar.

Dr. O. P. Chaudhary, Joint Secretary (NLM), DADF, Ministry of Agriculture and Farmers Welfare, Government of India; Dr. R. K. Singh, Assistant Director General (CC & FFC), ICAR; Dr. Khem Chand, Director, ICAR-IGFRI, Jhansi and other dignitaries graced the occasion.

Dr. K.S. Grewal, Dean College of Agriculture, CCS HAU welcomed the delegates and presented in brief achievements of University particularly in the forage crops. He informed about the significant contribution and success of HAU varieties particularly in *Rabi* fodder crops like Oat and Berseem in increasing the fodder availability in the country.

Dr. A. K. Roy, Project Coordinator, AICRP on Forage Crops and Utilization presented the brief introduction of AICRP Forage project, Salient achievements during XII plan period and summary of activities carried out in Rabi 2017-18 and results.

Dr. D. B. Yadav, Project Director, CCS HAU, Hisar highlighted the need of suitable technologies for farming community.

Dr. Khem Chand, Director, ICAR-IGFRI, Jhansi stressed on transfer of viable technologies related to fodder crops and highlighted the contribution made by IGFRI for the farmers and livestock keepers and efforts to bridge the demand and supply gap of forage availability.

Dr. R. K. Singh, ADG (CC & FFC), ICAR, highlighted the gaps in forage research and stressed upon the need of high yielding varieties with good nutritional quality and disease pest resistance. He raised the issue of huge import of Berseem seeds and emphasized to develop technologies for increasing Berseem seed availability. He called upon the need to improve the forage resources involving all the stakeholders.

Dr. O. P. Chaudhary, Joint Secretary (NLM), DADF, Ministry of Agriculture and Farmers Welfare, Government of India presented scenario of feed and fodder in the country and need to overcome the shortage of fodder. He informed about various programmes of DADF, GOI on these fronts and advocated the need of strengthening collaborations between different organizations and stakeholders.

Various publications were released during the occasion. Certificates of appreciation were awarded to AICRP forage crops centres; PJTSAU, Hyderabad and SKUAST- K, Srinagar. The teams of scientists associated in developing varieties notified during the period were also honoured.

The meeting was attended by forage scientists from coordinating and voluntary centres, representatives of NDDDB, NSC, DADF, Directors of Regional Fodder Station, GOI; private companies, progressive farmers, dairy owners etc.

TECHNICAL SESSION-I

INTERACTIVE SESSION WITH STAKEHOLDERS

Chairman	:	Dr. R.K. Singh, ADG (CC & FFC),ICAR
Co-Chairman	:	Dr. Khem Chand, Director IGFRI, Jhansi
Rapporteur	:	Dr. Uma, Assistant Agronomist

The session started with welcome address by the Project Coordinator by inviting different stakeholders like farmers, livestock keepers, dairy personal, representatives of private companies, representative involved in feed and fodder development and animal husbandry and farmers to discuss on various problems and possible solutions related to fodder production. Many stake holders from different adjoining villages of Hisar, Haryana participated in this session. Followings are the important deliberation points.

- Sh. Kapoor Singh, village Kirtan pointed out that HJ-8 variety of Oats gives very good yields of fodder at their field but seed of this variety is not available in sufficient quantity for sowing. It was pointed out that the seeds in limited quantity are available but the farmers should also produce the seed of the variety at their own fields for continuing the cultivation and becoming self dependent for seed requirement. Necessary training or guidance will be provided by CCS HAU.
- Sh. Sajjan Singh, a dairy owner told that both the varieties HB-1 and HB-2 of Berseem are very good in fodder production. He was advised to leave nearly one fourth of his field area just before Holi or end of March for seed production and rest of the field can be utilized for fodder production.
- Sh. Shamsher Singh (Sirsa) informed that he is producing seed of Guar, variety released by HAU, Hisar and getting good profit. He was also advised to involve other farmers in the programme.
- Mr. Mohammad Riyaz from Alamdar seed Pvt. Ltd. told that they are having 3500 contract farmers with 4000 acres area for producing forage seeds mainly Lucerne seed. He invited farmers to join him in forage seed production. Chairman congratulated Mr. Riyaz seed production project and also asked to take seed production of Berseem.
- Mr. Kamal Gupta from Stargene Hybrid Seed Company put forth requirement of parental lines seed of Sorghum varieties for multiplication. It was suggested to him to tie up with IIMR Hyderabad for procuring seed of parental line.
- NSC representative informed the farmers that they are producing seed of Maize, Bajra, Oats, Cowpea and Guar at their farms located in Rajasthan, Hisar and Karnataka. NSC was advised to take lead role in Berseem seed production as we are importing a lot of Berseem seed at the cost of our precious foreign exchange. Chairman Dr. R.K. Singh pointed out that it is serious issue and NSC should take up Berseem seed production to save foreign exchange.
- Dr. Vijay Yadav from IGFRI informed that IGRI is ready to supply the seed of IGFRI varieties of the crops recommended for Haryana State.
- Mr. Avinash Chauhan from NDDDB stressed for the need of a common platform of all the seed producing companies for availability of seed. So that the farmer can get information regarding the availability of different Seed in respective States. Dr. Roy advised him to contact with ICAR/IGFRI/AICRP.

The session ended with vote of thanks to the chair.

TECHNICAL SESSION - II

BREEDER SEED PRODUCTION

Chairman	:	Dr. R. K. Singh, ADG (CC & FFC), ICAR
BSP Report	:	Dr. A. K. Roy, Project Coordinator, AICRP on FC&U, IGFRI
Rapporteurs	:	Dr. R. K. Agrawal and Dr. Kalyan Jana

At the outset, the Chairman welcomed all the participants. Dr. A. K. Roy, PC presented the status of Breeder Seed Production in forage crops for production year *Rabi* 2017-18; indent year *Rabi* 2018-19.

Breeder Seed Production for production year *Rabi* 2017-18; indent year *Rabi* 2018-19

In *Rabi* 2017-18, the indent for Breeder Seed Production was received from DAC, GOI for 30 varieties in four forage crops *viz.* Oat (16), Berseem (10), Lucerne (03) and Gobhi-Sarson (01). The quantity allocated was 704.66 q which was 43.5% higher than the previous year. Breeder seed production was assigned to thirteen Breeder Seed producing centers of the different SAUs/ NGO/ ICAR institutes.

In Berseem, the production was 50.1q (4.96 q surplus) against the allocated quantity of 45.14 q. In Oat, the production was 468.8q (185.8 q deficit) against the allocation of 654.6 q. In Lucerne, the production was 4.02 q against the allocation of 4.9 q, leading to deficit of 0.88 q. In Gobhi Sarson, the production was 0.02 q against the allocation of 0.02 q. The overall breeder seed production was 522.94 q against the indent of 704.66 q. However after taking into account the seed surplus of previous year, the net deficit was 90.82 q.

Allocation for production year 2018-19; Indent year 2019-20

The breeder seed indent for 27 varieties in 3 fodder crops was received for a total quantity of 350.96 q. It included 7.40 q for Lucerne (3 varieties), 40.51 q for Berseem (12 varieties), 303.05 q for oat (12 varieties). The production was assigned to 8 centers located in SAUs/ ICAR institutes/NGOs.

Many centers raised the issue of non-lifting of breeder seed by different organizations. It was informed that the now the position has improved. However in case of non-lifting of seeds, centers were advised to inform PC and DAC for prompt action.

The session ended with vote of thanks to the chair.

TECHNICAL SESSION III DISCIPLINE WISE REPORT

Chairman	:	Dr. R. K. Singh, ADG (FFC), ICAR
Co-Chairman	:	Dr. I. S. Solanki, Director of Research (BAU sabour) & Ex-ADG FFC, ICAR
Convener	:	Dr. A. K. Roy, Project Co-ordinator
Rapporteurs	:	Dr. D. K. Banyal & Dr. Usha C. Thomas

Crop Improvement: Dr. Shahid Ahmed, Principal Scientist (Plant Breeding), IGFRI, presented the results of forage breeding and quality evaluation trials conducted during *Rabi* 2018. Total 17 trials in 5 annual and 3 perennial crops at 32 locations were conducted. The summary of the trials is as follows

- **IVTB:** Five entries (PC-91, HFB-14-7, HFB-13-7, JHB-17-1, and JHB-17-2) were proposed for promotion to AVT-1 on basis of their superior performance.
- **AVTB-1:** No entry was found markedly superior than checks.
- **AVTB-2** and **AVTB (seed)-2** trials were completed.
- **IVTO (SC)-1:** Six entries (JO-05-9, OL-1896, SKO-240, HFO-718, HFO-529, NDO-1501) were proposed to be promoted to AVT-1.
- **AVTO (SC)-1:** Seven entries (SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862) were proposed for promotion to AVT-2.
- **AVTO (SC)-2** and **AVTO (SC)-2 Seed** were completed.
- **IVTO (MC):** Four entries (HFO-514, OL-1874, JO-05-304, PLP -21) were proposed to be tested in AVT-1.
- **IVTO (Dual):** Six entries (HFO-611; HFO-608; OL-1876-2; OL-1906; JO-10-506; JHO-17-4) were proposed for promotion to AVT-1.
- **AVTO -1(Dual):** None of the entries should be promoted to AVT-2 as their performances were at par or below par to checks.
- **VT Lucerne-2016** will continue in coded form in the next season.
- **AVT-1 Vicia :** All five entries will continue in AVT-2
- **AVT-1 Lolium;** All three entries will be promoted to AVT-2
- **VT Red clover** and **VT White clover** will continue as such in coded form in the next season.
- **IVT Bajra multicut summer:** Three entries were promoted to AVT-1.
- The perennial trials on **BN Hybrid, Pennisetum, Cenchrus, Setaria and Desmanthes** will continue in Kharif 2018.

Crop Production

Dr. R.K Agrawal, Principal Scientist & PI (Agronomy) presented the detailed report of 25 experiments (10 coordinated, 13 location specific and 2 AVT) conducted at 23 locations. The results of various experiments were presented and following recommendations were given:

- In irrigated as well as rainfed ecosystem of southern dry zone of Karnataka, planting of Signal grass variety DBRS-1 at 60x60 cm spacing with supplementation of nitrogen 30 Kg/ha after each cut is recommended for higher green fodder (550q/ha), dry matter (125q/ha), net monetary returns (28030 Rs/ha) and B:C ratio of 2.07.
- In hill zone of Himachal Pradesh and Jammu and Kashmir, cultivation of annual rye grass [variety ATMA (HP)] is recommended. It has potential to produce up to 550 q green or 125 q dry matter per hectare. The technology can earn net return of Rs. 87257 with B: C ratio (1.97).
- Sowing of sorghum and bajra hybrids in lines @ seed rate ratio of 25:75 (10 kg sorghum + 12 kg bajra hybrids) of their recommended rates has potential to produce 650 q/ha green forage or upto 130 q dry matter and 10.66 q crude protein yield /ha during Kharif season. The technology may earn net returns of Rs. 71354/ha and B:C ratio (3.41).

- Oat variety NDO-951 is recommended for growing during Rabi season for higher fodder production under sodic soils of Uttar Pradesh. The technology produced 570q green fodder and 140 q, dry matter and 10.8 q crude protein yields per hectare with 5.0q green fodder per day productivity. The technology resulted in net monetary return of Rs 65000 with BC ratio of 2.92.
- In West Bengal, application of Zinc Sulphate @ 20 kg/ha along with Borax @ 10 kg/ha is recommended for seed production of oats in red and lateritic soil. The technology produced 33.6 q oat seeds, 3.41 kg crude protein. The net return was Rs. 56438/ha with B:C ratio of 2.75 from seed production of oats.
- In Assam, oat + pea food-forage intercropping in replacement series at 3: 3 row ratio supplemented with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher green forage (747.02 q/ha), dry matter yield (50.76 q/ha), crude protein yield (8.43 q/ha) and net return (Rs 61548/ha).
- For propagation of bajra napier hybrid, the planting of two eye budded root slips are recommended, as this ensures higher and early plant establishment and produces the higher green fodder, dry fodder, crude protein yields and remuneration.
- In Manipur, Oat+chickpea food forage intercropping in a replacement series at 3:3 row ratio along with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher fodder yield and better quality fodder. The technology also promises production up to 700 q green forage equivalent yield, 85 q dry matter yield and net return of Rs. 78499/ha.
- In Chhattisgarh, for BN Hybrid irrigation at 1.0 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1000 q/ha green fodder), net monetary return (Rs 62000) and B: C ratio (1.86) and in Punjab, for BN Hybrid irrigation at 1.2 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1700 q/ha green fodder), net monetary return (Rs 8500) and B: C ratio (1.83).

Crop Protection: Dr. Nitish R. Bhardwaj, Scientist & PI (Crop Protection) presented the salient achievements of 11 experiments conducted at 6 locations during *Rabi* 2017-18. The detailed scenario of diseases and insect pests of forage crops were presented. The resistant entries of rabi crops were highlighted. The results of various experiments were presented and following recommendations were given

- At Ludhiana, foliar application of carbendazim @1 kg/ha after first and second cut is recommended for management of stem rot disease in Egyptian clover seed crop.
- At Rahuri, for the management of *Spodopteralitura* in lucerne, foliar application of *SNPV* @ 1 ml/lit + *B. bassiana* @ 5 g/lit of water at 8 pm is recommended.
- At Rahuri and Ludhiana, foliar application of *HaNPV*@1 ml/lit + *B. bassiana* @ 5 g/lit of water is recommended for the management of *H. armigera* in lucerne and berseem seed crop respectively.

Meeting ended with vote of thanks to the chair.

TECHNICAL SESSION-IV (CONCURRENT) FORMULATION OF TECHNICAL PROGRAMME FORAGE CROP IMPROVEMENT

Chairman : Dr. R. K. Singh, ADG (FFC), ICAR, New Delhi
Rapporteurs : Drs. P. Mahadevu and Rahul Kapoor
Finalization of trials : Dr. Shahid Ahmed, IGFRI, Jhansi

At the outset, the chairman welcomed the delegates. Dr. Shahid Ahmed, presented the highlights of breeding trials conducted during *Rabi* 2017-18 on different forage crops *viz.*, Berseem, Oats, Lucerne, Lolium, Red Clover, White Clover, Vicia for finalization of the technical programme for *Rabi* 2018-19 and summer, 2019. After thorough discussion, following breeding trials were formulated.

Berseem

- A new trial IVTB was constituted with six entries.
- AVTB-1 was constituted with five entries (PC-91, HFB-14-7, HFB-13-7, JHB-17-1, and JHB-17-2) promoted from IVTB for NEZ & CZ.

Oats

- Three new trials were constituted *viz.*, IVTO-SC (11 entries), IVTO-MC (9 entries) and IVTO-Dual (8 entries).
- AVTO-SC-1 was constituted with six entries (JO-05-9, OL-1896, SKO-240, HFO-718, HFO-529, NDO-1501) promoted from IVTO-SC.
- AVTO-SC-2 was formulated with seven entries (SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862) promoted from AVTO-SC-1.
- Same entries will be tested for their seed yield potential in AVTSC-2 (Seeds).
- AVTO – MC-1 Oat was constituted with four entries (HFO-514, OL-1874, JO-05-304, PLP -21) promoted from IVTO-MC.
- AVTO Dual -1 was constituted with six entries (HFO-611; HFO-608; OL-1876-2; OL-1906; JO-10-506; JHO-17-4) promoted from IVTO-Dual.

Lucerne

- Perennial trial on Lucerne *i.e.*, VTL-2016 will be continued in the coded form.

Lolium (Rye grass)

- AVT-2 Trial *Lolium* will be constituted with 3 entries.
- Same entries will also be tested for AVT-2 *Lolium* seed.

Vicia

- All 5 entries of AVT-1 *Vicia* will be advanced to AVT-2.
- Same entries will also be tested for AVT-2 *Vicia* seed.

Red clover and White clover

- Trial on Red clover and White clover will be continued in the coded form.

Multicut bajra

- A new trial IVT Bajra (MC) will be conducted with effect from summer, 2018 onwards.
- Three entries were promoted to AVT-1 from IVT Bajra multicut.

- The perennial trials on **BN Hybrid, Pennisetum, Cenchrus, Setaria and Desmanthes** will continue in Kharif 2018.

TECHNICAL SESSION-IV (CONCURRENT)
FORMULATION OF TECHNICAL PROGRAMME
FORAGE CROP PRODUCTION

Chairman	:	Dr. Samunder Singh, HOD, CCS, HAU, Hisar
Finalization of Trials	:	Dr. R. K Agrawal, P.I. Crop Production, AICRP Forage Crops
Rapporteurs	:	Drs. Santosh Jha & R. Joseph Koireng

The session was chaired by Dr. Samunder Singh HOD, CCS, Haryana Agricultural University, Hisar and coordinated by Dr. R. K Agrawal, P.I. Crop Production, AICRP Forage Crops. During the session, different aspects of forage crops production were discussed thoroughly. Five new proposals were discussed in the session on nutrient management, seed production and weed management in different *Rabi* crops. Dr. R.K. Agrawal suggested submitting two way tables necessary while submitting report for AVT Trials. After thorough discussion and suggestions the following experiments were formulated. Three AVT trials were also formulated.

New constituted experiments

- Nutrient management for productivity enhancement in dual purpose Oats (Kalyani, Jorhat, Imphal, Faizabad, Jabalpur, Anand).
- Studies on effect of varieties and cutting management on productivity, quality and seed production of berseem (Pantnagar & Ranchi)
- Influence of cutting stages and chemical spray on pod maturity of fodder cowpea (IGFRI, SRRS, Dharwad)
- Effect of intercropping on seed setting and seed yield in lucerne. (Bikaner)
- Feasibility studies of growing different oat cultivars as fodder crop on hilly terraces of Nagaland (Medziphema)
- One AVT Based trials each on single cut oat, vicia and rye grass was formulated
- Previously approved experiments will continue as per the programme.

Trials concluded: The following nine trials were concluded

1. PS-14-AST-3: Response of Congo-signal grass (*Brachiaria ruziziensis* Cv. DBRS 1) to planting geometry and N levels Irrigated and Rainfed (Mandya and Dharwad)
2. R-14-AST-1-: Studies on the Production Potential feasibility of annual rye grass genotypes with berseem under varying seeding rate in Hill Zone (Palampur, Srinagar)
3. K-15-AST-13 C. Biomass yield, crude protein yield and economics of multicut sorghum and pearl millet hybrids mixture under varying seed rates and methods of sowing (Ludhiana and Palampur)
4. K-15 AST-7L: Screening of genotypes of fodder oat under sodic soil (NDUA&T, Faizabad)
5. R-15-AST-5 Effect of zinc sulphate and borax on seed production potentiality of oats under lateritic soil of West Bengal (Sriniketan, West Bengal)
6. R-15-AST-2: Productivity of oat - pea intercropping system as influenced by integrated nutrient management (Jorhat)
7. K-15-AST-2L: Performance of bajra napier hybrids as influenced by nature of vegetative propagules (Dharwad)
8. R-15-AST-1: Productivity of oat - chickpea intercropping system as influenced by integrated nutrient management (Imphal)
9. PS-14-AST-1: Effect of straw mulch on the water requirement, weeds and productivity of BN hybrid (Ludhiana and Raipur).

Recommendations

- In irrigated as well as rainfed ecosystem of southern dry zone of Karnataka planting of Signal grass variety DBRS-1 at 60 X 60 cm spacing with supplementation of nitrogen 30 Kg/ha after each cut is recommended for higher green fodder (550q/ha), dry matter (125q/ha), net monetary returns (28030 Rs/ha) and B:C ratio of 2.07.

- In hill zone of Himachal Pradesh and Jammu and Kashmir, cultivation of sole annual rye grass variety ATMA (HP) is recommended. It has potential to produce up to 550 q green or 125 q dry matter per hectare. The technology can earn net return of Rs. 87257 with B: C ratio (1.97).
- Sowing of sorghum and bajra hybrids in lines @ seed rate ratio of 25:75 (10 kg sorghum + 12 kg bajra hybrids) of their recommended rates has potential to produce 650 q/ha green forage or upto 130 q dry matter and 10.66 q crude protein yield /ha during Kharif season. The technology may earn net returns of Rs. 71354/ha and B:C ratio (3.41).
- Oat variety NDO-951 is recommended for growing during Rabi season for higher fodder production under sodic soils of Uttar Pradesh. The technology produced 570q green fodder and 140 q, dry matter and 10.8 q crude protein yields per hectare with 5.0q green fodder per day productivity. The technology resulted in net monetary return of Rs 65000 with BC ratio of 2.92.
- In West Bengal, application of Zinc sulphate @ 20 kg/ha along with Borax @ 10 kg/ha is recommended for seed production of oats in red and lateritic soil. The technology produced 33.6 q oat seeds, 3.41 kg crude protein. The net return was Rs. 56438/ha with B:C ratio of 2.75 from seed production of oats.
- In Assam, oat + pea food –forage intercropping in replacement series at 3: 3 row ratio supplemented with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher green forage (747.02 q/ha), dry matter yield (50.76 q/ha), crude protein yield (8.43 q/ha) and net return (Rs 61548/ha).
- For propagation of bajra napier hybrid, the planting of two eye budded root slips are recommended, as this ensures higher and early plant establishment and produces the higher green fodder, dry fodder, crude protein yields and remuneration.
- In Chhattisgarh, for BN Hybrid irrigation at 1.0 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1000 q/ha green fodder), net monetary return (Rs 62000) and B: C ratio (1.86).
- In Punjab, for BN Hybrid irrigation at 1.2 IW/CPE ratio with application of 10 t/ha straw mulch is recommended. It recorded higher productivity (1700 q/ha Green fodder), net monetary return (Rs 8500) and B: C ratio (1.83).
- In Manipur, Oat + chickpea food forage intercropping in a replacement series at 3:3 row ratio along with 50% N through vermicompost + 50% N through inorganic fertilizer is recommended for higher fodder yield and better quality fodder. The technology also promises production up to 700 q green forage equivalent yield, 85 q dry matter yield and net return of Rs. 78499/ha.

General points

- In trial R-16-AST-4: Effect of stubble management and planting density on establishment and productivity of forage lathyrus under zero tillage condition in rice fallows, it was suggested to change from Lathyrus crop to Oat, as due to heavy winter rainfall during the early copping period the lathyrus is most affected in the region
- It is advised to calculate the B:C ratio on the basis of gross return only.
- In AVT and other trials, data on all parameters as mentioned in proceeding should be sent.
- The two teams are being constituted to develop multilocation trials to be started from Kharif 2018. The teams will develop the technical programme which will be discussed well in advance and finalized in forthcoming Kharif group meeting.

Team	Members	Theme
Team 1	Drs. Navin Kumar, J K Bisht, B G Shekara and Kalyan Jana	Organic Farming
Team 2	Drs. BG Shiva kumar, S K Jha and S D Shivakumar	Biofortification of fodders

The session ended with vote of thanks to the Chair.

**TECHNICAL SESSION-IV (CONCURRENT)
FORMULATION OF TECHNICAL PROGRAMME
FORAGE CROP PROTECTION**

Chairman	:	Dr. Surjeet Singh, Head, Dept of Plant Protection, CCS HAU, Hisar
Rapporteurs	:	Drs. Ashlesha and A.B. Tambe
Finalization of trials	:	Dr. N. R. Bhardwaj

Crop Protection Scientists of the Forage group discussed in detail the results of the last *Rabi* season along with the ongoing technical programme. Scientists appraised the Chairman, regarding the results of last *Rabi* season along with the technical programme of *Rabi* 2018-19. The Chairman appreciated the work done and gave valuable suggestions for its improvement. Based on the discussion and suggestions, the following recommendations emerged.

- The trials PPT-1 and PPT-2 will continue as they are of continuous in nature.
- PPT-17, PPT-26 and PPT-31 will also continue in the *Rabi* 2018-19.
- Two trials *viz.*, PPT-20 and PPT-21 will be validated on large plots as new trial
 - PPT-32 (Validation of best treatment of trial entitled “Management of soil borne and powdery mildew diseases in red clover seed crop” from Palampur centre) and
 - PPT-33 (Validation of best treatment of trial entitled “Management of foliar diseases of oat” from Ludhiana and Bhubaneswar centers) respectively.

Trials concluded

Trials PPT-27, PPT-28 and PPT-29 were validated on large area and following recommendations emerged:

- At Ludhiana, foliar application of carbendazim @1 kg/ha after first and second cut is recommended for management of stem rot disease in Egyptian clover seed crop.
- At Rahuri, for the management of *Spodoptera litura* in lucerne, foliar application of *SNPV* @ 1 ml/lit + *B. bassiana* @ 5 g/lit of water at 8 pm is recommended.
- At Rahuri and Ludhiana, foliar application of *HaNPV*@1 ml/lit + *B. bassiana* @ 5 g/lit of water is recommended for the management of *H. armigera* in lucerne and berseem seed crop respectively.

New trial formulated

- One new trial *i.e.*, PPT-34 (Integrated disease management in berseem) was formulated and finalized for Jhansi, Ludhiana, Palampur and Bhubaneswar.

The meeting ended with vote of thanks to the Chair

TECHNICAL SESSION –V REVIEW OF CENTER WISE ACTIVITIES

Chairman	:	Dr. I. S. Solanki, Director of Research, BAU, Sabour & Ex ADG FFC)
Co- Chairman	:	Dr. J. P. Yadvendra, Ex QRT member, IGFR
Convener	:	Dr. A. K. Roy, Project Coordinator, AICRP on FC & U, IGFR
Rapporteurs	:	Dr. Rajan Katoch and Dr. R. C. Bairwa

At the outset of the chairman welcomed the participants and requested them to present only important activities. He exhorted the scientists to accentuate on the technologies which could be well adopted by the farmers.

In general following observations were made

- The Palampur center was commended for identification of molecular markers for powdery mildew in oats. They were advised to validate the identified markers so that screening of selected germplasm and progenies can be taken up.
- It was suggested to initiate National Programme in Lucerne with common technical programme of collaborating centers. If necessary the extra funding for the Lucerne breeding programme could be extended from PC unit.
- It was suggested for all the centers to submit projects under RKVY scheme with consultation and information to PC.
- All the centers were advised to take up allocated breeder seed programme as it is a national commitment. It was also suggested that the released variety should reach the maximum number of farmers to turn that variety as a mega variety.
- It was also suggested for the quick action for notification of state released varieties and after completion of trials, proposals should come to VIC for identification.
- All the centers should submit the variety proposals within three months to CVRC after its identification in VIC.
- It was suggested that generated technologies/ varieties should be commercialized through agencies including private companies by following institutional norms.

The session ended with vote of thanks to chair.

TECHNICAL SESSION VI FTD & TSP FORMULATION

Chairman	:	Dr. I. S. Solanki, Director of Research, BAU, Sabour & Ex ADG FFC)
Convener	:	Dr. A. K. Roy, Project Coordinator, AICRP on FC & U, IGFR
Rapporteurs	:	Dr. R. K. Agrawal and S. D. Sivakumar

At the outset, the chairman welcomed all the participants. Dr. R. K. Agrawal presented the status of FTD's allotted to AICRP (FC) centres for Rabi 2018-19. A total of 535 FTD's were allotted to 21 AICRP centres for Rabi crops. It included 70 FTDs to berseem, 70 to lucerne, 250 to oat (Single cut), 60 to oat (Multicut), 05 to cowpea, 70 to other crops viz., laythrus, rye grass, guinea grass, tall fescue, hedge lucerne etc.

The following decisions were taken after the discussion:

- All the centres should send result of the demonstrations along with beneficiaries details.
- Farmers should not be repeated for the same crop and variety in subsequent years.
- The data regarding GFY and seed yield etc. should be recorded and analyzed before reporting. The report along with good photograph should be sent for compilation.

Crop-wise FTDs to be conducted during Rabi 2018-19

S N	Centre	Berseem	Lucerne	Oat (SC)	Oat (MC)	Cowpea	Other crops	Total
1.	AAU, Jorhat			20				20
2.	OUAT, Bhubaneswar			25			Rye grass: 25	50
3.	BCKV, Kalyani	05		10			Lathyrus: 10	25
4.	BAU, Ranchi	10		30				40
5.	NDUAT, Faizabad			10				10
6.	JNKVV, Jabalpur	10		05				15
7.	AAU, Anand		10	5				15
8.	BAIF, Urulikanchan		05	15				20
9.	MPKV, Rahuri	10		10				20
10.	SKRAU, Bikaner		10	15				25
11.	PAU, Ludhiana			20	20			40
12.	CCS HAU, Hisar	20		10	10			40
13.	GBPUAT, Pantnagar	10		10			Berseem + oat IC : 10	30
14.	TNAU, Coimbatore		05			05	Guinea grass: 05	15
15.	PJTSAU, Hyderabad		10	05			Hedge lucerne: 10	25
16.	ZRS, UAS (B), Mandya		30	20				50
17.	CSK HPKV, Palampur				15		Tall Fescue: 05	20
18.	KAU, Vellayani						BNH: 15	15
19.	IGKV, Raipur	05			05			20
20.	CAU, Imphal			10	10			10
21.	SKUA&T, Srinagar			30				30
Total		70	70	250	60	05	70	535

Tribal Sub Plan

- It was suggested that beneficiaries will have to be selected only in 39 districts of country under TSP as identified by the Govt. of India. However on going programme may continue at lower scale.
- The centres should submit plan and budget required within a week. TSP progress report should be submitted every month by the centres in the given proforma

The session ended with vote of thanks to the chair.

TECHNICAL SESSION VII

PGR/BREEDING/PRODUCTION/PROTECTION ISSUES

Chairman	:	Dr. I. S. Solanki, Ex ADG (FFC) and Director Research, BAU, Sabour
Co-Chairman	:	Dr. A. K. Roy, PC, AICRP on Forage Crops & Utilisation
Rapporteurs	:	Drs. Santosh Jha & P. S. Takawale

- Dr. P. P. Singh, Director, Regional Fodder Station, Hisar, DAHDF, GOI presented detailed activities regarding seed production, extension and other programme carried out at eight regional fodder stations across the country. He emphasized the need of one common platform for availability of fodder seed at various sources across the country.
- Representative from NSC stressed upon availability of breeder seed in required quantity.
- Dr. Raina from NBPGR Regional Station, Srinagar discussed about the genetic resources, registration of new accessions and also the available germplasm with this station.
- Dr. Aditya Sharma from ADVANTA stated the need of testing center for multi cut bajra and sorghum in Punjab and Haryana.
- Dr. A. K. Mishra, IGFRI explained the opportunities in silage making sector. He emphasized for development of varieties of Maize, Oat and BN Hybrid with high total sugar (Brix) content.
- The Project Coordinator informed about the common platform is being prepared at IGFRI website for availability of forage crop seed at various sources.

Following suggestions emerged after discussion

- After identification of varieties, proposal should be submitted to CVRC within three months after getting the IC number from NBPGR and finger printing of variety.
- The NBPGR Regional Station, Srinagar was advised to collaborate with SUKAST and IGFRI, RRS, Srinagar for area specific explorations.
- Initiate the programme on bio-fortification in forage crops as like other grain crops.
- Identify two to three centers for screening of germplasm and breeding material of cereal forage crops for total sugar (Brix) and Zinc content as additional quality parameter.
- The germplasm collected and maintained by different centers should be submitted to NBPGR along with all the passport data to get IC No. Germplasm should be freely shared among the centers after completing all formalities.
- All centers must put emphasis on popularizing the technologies and publish the results in good journals and avoid publishing in on-line journals which are of poor NAAS rating and value..
- All centers should contribute entries in the coordinated trial. It was observed that a few centers are not contributing any entry in the trials, these centers were advised to strengthen their crop improvement activities.

The session ended with vote of thanks to the Chairman and Co-Chairman.

TECHNICAL SESSION VIII

SCIENTIFIC, ADMINISTRATIVE AND FINANCIAL ISSUES

Chairman : Dr. I. S. Solanki, Ex ADG (FFC) and Director Research, BAU, Sabour
Co-Chairman : Dr. A. K. Roy, PC, AICRP on Forage Crops & Utilization
Rapporteurs : Prof. A. H. Sonone

At the outset the chairman and Co-chairman welcomed all delegates and invitees attending the meeting.

- Bihar Agricultural University, Sabour should be made a voluntary center.
- Voluntary center from Dr BSKVV, Karjat should be changed to Livestock Research Farm, Nileli center of same university.
- The posts sanctioned in the project for 3 years 2017-18 to 2019-20 as per SFC approval has already been communicated along with budget approved under different heads like salary, TA, Research contingencies. It was pointed out that it is not possible to change the posts during the SFC period.
- All the centers should restrict expenditure within the approved budget only. If expenditure on salary head is exceeding the approved budget, the number of posts should be reduced at center level.
- Vacant posts in the administrative and supportive cadre especially drivers and stenographers should not be filled at any centers till further orders.
- Salary of staff engaged on contractual basis should be drawn from recurring contingency and not from salary head.
- It should be strictly followed that no person in higher scale be placed in AICRP on FC & U than sanctioned post.
- Retirement benefits should not be drawn from the ICAR – AICRP FC&U funds.
- It was noted that a few centers have not submitted AUC till now. It was emphasized that AUC must be submitted immediately.
- Centers should take initiative in getting funds from external sources also in form of consultancy, licensing etc. from government and private firms following their institutional norms and completing all formalities.
- The fund is now being released under PFMS system. The centers should monitor the fund release and its utilization. From next financial year onwards, EAT module (**Expenditure-Advance-Transfer modules**) for fund utilization will be in operation. All the centers are requested to follow the financial guidelines issued by ICAR/ Ministry of finance regularly.

The session ended with vote of thanks to the Chairman and Co-Chairman.

Proceedings of Varietal Identification Committee Meeting

The meeting of Varietal Identification Committee of AICRP on Forage Crops and Utilization was held under the chairmanship of Dr. R. K. Singh, Assistant Director General, (CC & FFC), ICAR on 07th September, 2018 at CCS HAU, Hisar.

The following four proposals were put up before the committee. The committee deliberated in detail and decisions taken are given as under.

Fodder oat (single cut) entry HFO-427: The proposal was submitted by CCS HAU, Hisar for identification for South Zone of the country. The committee noted superiority of the entry in terms of green and dry fodder yield, per day productivity, seed yield, leafiness and responsiveness to fertilizers *vis a vis* national and zonal checks. The committee identified the entry for cultivation for the states of Telengana, Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala under irrigated condition during Rabi season.

Fodder oat (single cut) entry JHO-2015-1: The proposal was submitted by IGFRI, Jhansi for identification for Hill Zone of the country. The committee noted superiority of the entry in terms of green, dry fodder yield, per day productivity, crude protein content, crude protein yield and responsiveness to fertilizers *vis a vis* national and zonal checks. The committee identified the entry for cultivation for the states of Himachal Pradesh and Jammu & Kashmir under irrigated condition during Rabi season.

Berseem entry JO-05-9: The proposal was submitted by JNKVV, Jabalpur for identification for North West Zone of the country. The committee noted that the entry performed at par in terms of green, dry fodder yield *vis a vis* national and zonal checks. However the entry has shown superior performance for seed yield. Considering the shortage of Berseem seed in the country, the committee identified the entry for cultivation for the states of Uttarakhand, Haryana, Punjab, Uttar Pradesh, and Rajasthan under irrigated condition during Rabi season.

Fodder Pearl millet entry RBB-6: The proposal was submitted by SKRAU, Bikaner for identification for North West Zone of the country. The committee noted that the entry did not perform well as compared to checks for green fodder yield and other traits. The committee did not recommend for its identification.

AICRP ON FORAGE CROPS & UTILIZATION FINALIZED TECHNICAL PROGRAMME FORAGE BREEDING TRIALS - RABI 2018-19

1. IVT Berseem: Initial Varietal Trial in Berseem

Number of entries	6 + 1 (NC) + 1 (ZC)
Contributors	JB -06-11, BM-12, JHB-18-1, JHB 18-2, HFB-15-3, HFB-15-5
National checks	Wardan
Zonal checks	BL-22 (HZ), Bundel Berseem-2 (CZ & NWZ), Bundel Berseem-3 (NEZ)
Design	RBD with 3 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 3 m length)
Seed rate	22 g per plot (approx. 25 Kg/ha)
Seed requirement	2.0 Kg/entry and national check ; BL-22 (HZ) – 0.5 kg ; Bundel Berseem-2 (CZ & NWZ) -1.0 kg ; Bundel Berseem-3 (NEZ) – 0.5 kg
Fertilizer	N-20 Kg, P ₂ O ₅ 80 Kg/ha
Locations (21)	HZ - Palampur, Srinagar, Rajouri, Almora ; NWZ -Pantnagar, Bikaner, Hisar, Ludhiana, Udaipur, Meerut ; NEZ -Kalyani, Ranchi, Faizabad, Bhubaneswar, Pusa, Sabour CZ - Jhansi, Rahuri, Jabalpur, Urulikanchan, Raipur

2. AVT-1 Berseem: First Advance Varietal Trial in Berseem

Number of entries	5 + 1 (NC) + 1 (ZC)
Entries name	PC-91, HFB-14-7, HFB-13-7, JHB-17-1, JHB-17-2 for HZ, NWZ, NEZ
National checks	Wardan
Zonal checks	BL-22 (HZ); Bundel Berseem -2 (NWZ); Bundel Berseem-3 (NEZ);
Design	RBD with 3 replications
Plot size	3.0 x 4.0 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 3 m length)
Seed rate	30 g per plot (approx. 25 Kg/ha)
Seed requirement	2.0 Kg/entry & NC ; BL-22 (HZ) – 0.5 kg Bundel Berseem-2 (NWZ) -1.0 kg ; Bundel Berseem-3 (NEZ) – 0.5 kg
Fertilizer	N-20 Kg, P ₂ O ₅ 80 Kg/ha
Locations (15)	HZ - Palampur, Srinagar, Rajouri ; NWZ -Pantnagar, Bikaner, Hisar, Ludhiana, Udaipur, Meerut, Jalore; NEZ -Kalyani, Ranchi, Faizabad, Bhubaneswar, Pusa

3. IVT Oat (SC) Initial Varietal Trial in Oat (Single cut)

Number of entries	11 + 2 (NC) + 1 (ZC)
Contributors	JO-06-23, RO-11-1-2, RO-11-1-3, OL_1876-1, OL 1874-1, JHO 18-1, UPO-18-1, NDO-18-2, HFO-806, HFO-818, SKO-241
National checks	Kent & OS-6
Zonal check	OS-403 (NWZ, NEZ, SZ), SKO-96 (HZ), RO-11-1 (CZ)
Design	RBD with 3 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row 25 cm (each plot accommodating 12 rows of 3 m length)
Seed rate	90 g per plot (approx. 100 Kg/ha)
Seed requirement	9.0 Kg/entry from each contributor & NC ; 1.5 kg for SKO_96 (HZ ZC) ; 3.0 Kg for RO-11-1 (ZC CZ) ; 6.0 kg for OS_403 (ZC NWZ, NEZ, SZ)
Fertilizer	N- 80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (29)	HZ -Palampur, Srinagar, Rajouri NWZ -Bikaner, Hisar, Ludhiana, Pantnagar, Udaipur, Meerut NEZ -Jorhat, Kalyani, Bhubaneswar, Ranchi, Pusa, Faizabad, Imphal CZ -Jhansi, Rahuri, Urulikanchan, Palgarh, Anand, Jabalpur, Raipur, Dhari SZ -Hyderabad, Tirupati/ Guntur, Mandya, Coimbatore (Ooty), Mattupetty

4. AVT Oat (SC)-1 First Advanced Varietal Trial in Oat (Single cut)

Number of entries	6 + 2 (NC) +1 (ZC)
Entries name	JO-05-9, OL-1896, SKO-240, HFO-718, HFO-529, NDO-1501
National checks	Kent and OS-6
Zonal checks	ZC: 4 (SKO-96_HZ; RO-11-1_NWZ,_NEZ, JHO 2009-1_CZ, JHO-2010-1_SZ)
Design	RBD with 3 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row-25 cm (each plot accommodating 12 rows of 4 m length)
Seed rate	120 g per plot (approx. 100 Kg/ha)
Seed requirement	11.0 Kg/entry from each contributor & NC ; 1.5 kg for SKO-96 (HZ) ; 5.0 kg for RO-11-1 (NWZ, NEZ) ; 3.0 kg for JHO-2009-1 (CZ) ; 2.5 kg for JHO-2010-1 (SZ)
Fertilizer	N- 80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (27)	HZ -Palampur, Srinagar, Rajouri NWZ -Bikaner, Hisar, Ludhiana, Pantnagar, Udaipur, NEZ -Jorhat, Kalyani, Bhubaneswar, Ranchi, Pusa, Faizabad, Imphal CZ -Jhansi, Rahuri, Urulikanchan, Palgarh, Anand, Jabalpur, Raipur SZ -Hyderabad, Tirupati/ Guntur, Mandya, Coimbatore (Ooty), Mattupetty

5. AVT Oat (SC)-2 Second Advanced Varietal Trial in Oats (Single cut)

Number of entries	7+ 2 (NC) +1 (ZC)
Entries name	SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862
National checks	Kent & OS-6
Zonal check	SKO-90 (HZ), OL-125 (NWZ), JHO-99-2 (NEZ), JHO-2000-4 (SZ), JHO-822 (CZ)
Design	RBD with 3 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row-25 cm (each plot accommodating 12 rows of 4 m length)
Seed rate	120 g per plot (approx. 100 Kg/ha)
Seed requirement	11.0 Kg/entry from each contributor & NC ; SKO-90 (HZ) - 1.5 kg ; OL-125 (NWZ) - 2.0 kg ; JHO-99-2 (NEZ) – 3.0 kg JHO-2000-4 (SZ) -2.0 kg; JHO-822 (CZ) – 3.0 kg
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (27)	HZ -Palampur, Srinagar, Rajouri NWZ -Bikaner, Hisar, Ludhiana, Pantnagar, Udaipur, NEZ -Jorhat, Kalyani, Bhubaneswar, Ranchi, Pusa, Faizabad, Imphal CZ -Jhansi, Rahuri, Urulikanchan, Palgarh, Anand, Jabalpur, Raipur SZ -Hyderabad, Tirupati/ Guntur, Mandya, Coimbatore (Ooty), Mattupetty

6. AVT Oat (SC)-2 (Seed) Second Advanced Varietal Trial in Oats (SC) for Seed

Number of entries	7 + 2 (NC) +1 (ZC)
Entries name	SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862
National checks	Kent and OS-6
Zonal check	SKO-90 (HZ), OL-125 (NWZ), JHO-99-2 (NEZ), JHO-2000-4 (SZ), JHO-822 (CZ)
Design	RBD with 3 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row-25 cm (each plot accommodating 12 rows of 4 m length)
Seed rate	100 g per plot (approx. 80 Kg/ha)
Seed requirement	5.0 Kg/entry from each contributor & NC & 1.5 Kg for each zonal check
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (13)	HZ -Palampur, Srinagar; SZ -Hyderabad, Mandya; NEZ - Ranchi, Pusa, Imphal NWZ - Hisar, Ludhiana, Pantnagar; CZ - Rahuri, Anand, Jabalpur ;

**6A. AVT Oat (SC)-2 (agron) Second Advanced Varietal Trial in Oats (SC) for agronomy
R-18-AST -1: Effect of N levels on forage yield of promising entries of oat (AVT-2 SC)**

**Objective: To study the effect of nitrogen levels and promising entries on yield and quality of oat
Treatment details:**

Main plot:

(A) Entries : 7+ 2 (NC) +1 (ZC) (Entries-7, NC (2) and ZC (1))

Entries (7) : SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862

National checks: (2): Kent, OS-6

Zonal checks (1): SKO-90 (HZ), OL-125 (NWZ), JHO-99-2 (NEZ), JHO-2000-4 (SZ)

Sub-plot: (B) N- levels: 4 (30 ,60 90, and 120 kg N /ha) (Split application of nitrogen)

Year : Rabi 2018-19

Design : Split plot

Replications : Three

Plot size : 4 m x 3 m

Seed rate : 120 g/plot (100 kg/ha)

Spacing : R x R-25 cm

Treatments : Combinations: 10 X 4=40

Total plots : 10X4X3=120

Fertilizer : P₂O₅-40 Kg/ha basal

Locations : 11

Seed requirement : 1.44 kg/entry or national check/location

entry or national check : 16 Kg/entry from each contributor, 16.0 Kg/NC

Zonal checks: OL125(NWZ)- 3.0 kg, JHO-2000-4 (SZ)-3.0 kg, JHO-822 (CZ)-3.0 kg, JHO-99-2 (NEZ)-4.5 kg
SKO-90 (HZ)-3.0 kg

Observations to be recorded:

- Tiller number /m row length at harvest
- Growth parameters (Plant height (cm) and leaf: stem ratio)
- Green fodder, dry fodder yields (q/ha)
- Crude protein content (%) and CP yield (q/ha)
- Per day productivity (Green fodder, dry fodder)

Seed requirement: Testing entry/national check: 16 Kg

Locations (11)	
HZ-2	Palampur, Srinagar
NWZ-2	Hisar, Ludhiana
NEZ-3	Imphal, Ranchi, Kalyani
CZ-2	Urulikanchan, Jabalpur
SZ-2	Mandya, Hyderabad

7. IVTO (MC) Initial Varietal Trial in Oat (Multi cut)

Number of entries	9 + 2 (NC)
Contributors	JO-06-308, RO-11-1-4, RO-11-1-5, OL-1895, OL-1882, JHO 18-2 PLP-23, HFO-707, HFO-717
National checks	UPO-212 and RO-19
Design	RBD with 3 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row-25 cm (each plot having 12 rows of 3.0 m length)
Seed rate	90 g per plot (approx. 100 Kg/ha)
Seed requirement	6.0 Kg/entry from each contributor & each national check
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (19)	HZ: Palampur, Srinagar, Almora NWZ: Pantnagar, Hisar, Jalore, Ludhiana NEZ: Ranchi, Pusa, Faizabad, Jorhat, Bhubaneswar, Imphal, Sabour CZ: Jhansi, Anand, Jabalpur, Rahuri, Uralikanchan

8. AVTO-1 (MC) First Advanced Varietal Trial in Oat (Multi cut) - HZ, NWZ, NEZ, CZ

Number of entries	4+ 2 (NC)
Contributors	HFO-514, OL-1874, JO-05-304, PLP -21
National checks	UPO-212 and RO-19
Design	RBD with 4 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row-25 cm (each plot having 12 rows of 3.0 m length)
Seed rate	90 g per plot (approx. 100 Kg/ha)
Seed requirement	8.0 Kg/entry from each contributor & each national check
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (18)	HZ: Palampur, Srinagar, Almora ; NWZ: Pantnagar, Hisar, Jalore, Ludhiana NEZ: Ranchi, Pusa, Faizabad, Jorhat, Bhubaneswar, Imphal CZ: Jhansi, Anand, Jabalpur, Rahuri, Uralikanchan

9. IVT Oat (Dual) Initial Varietal Trial in Oat (Dual)

Number of entries	8 + 2 (NC)
Entries name	JO-11-507 , RO-11-2-2, RO-11-2-6, OL-1874-2, OL-1766-2, JHO 18-3, HFO-816, HFO-810
National checks	UPO-212 and JHO-822
Design	RBD with 3 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row 25 cm (each plot accommodating 12 rows of 3 m length)
Seed rate	90 g per plot (approx. 100 Kg/ha)
Seed requirement	5.0 Kg/entry from each contributor & each national check
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (14)	NWZ: Bikaner, Hisar, Ludhiana, Pantnagar ; NEZ: Jorhat, Bhubaneswar, Ranchi, Faizabad; CZ: Jhansi, Rahuri, Uralikanchan, Anand, Jabalpur, Raipur

10. AVT-1 Oat (Dual) Advanced Varietal Trial in Oat (Dual)

Number of entries	6 + 2 (NC)
Entries name	HFO-611; HFO-608; OL-1876-2; OL-1906; JO-10-506; JHO-17-4
National checks	UPO-212 and JHO-822
Design	RBD with 3 replications
Plot size	3.0 x 4.0 m
Spacing	Row to row 25 cm (each plot accommodating 12 rows of 3 m length)
Seed rate	120 g per plot (approx. 100 Kg/ha)
Seed requirement	6.0 Kg/entry from each contributor & each national check
Fertilizer	N-80 Kg, P ₂ O ₅ -40 Kg/ha
Locations (15)	NWZ: Bikaner, Hisar, Ludhiana, Pantnagar, Udaipur ; NEZ: Jorhat, Bhubaneswar, Ranchi, Faizabad ; CZ: Jhansi, Rahuri, Uralikanchan, Anand, Jabalpur, Raipur

11. VT Lucerne (P)-2016 Varietal Trial in Lucerne (Perennial)-2nd year – To be continued

Number of entries	10 + 2 (NC)
Contributors	AL-61, AL-62, TSL-1, BAIF Lucerne 4, TNLC-15, DL-5, Alamdar -1, Alamdar -51, RL-15-1, RRB-15-1
National checks	Anand-2, RL-88
Design	RBD with 3 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 4.0 m length)
Seed rate	30.0 g per plot (Approx. 25 kg/ha)
Seed requirement	1.75 kg/entry from each contributor & each national check
Fertilizer	N-20kg, P ₂ O ₅ -80 kg/ha
Locations (13)	NWZ: Ludhiana, Bikaner, Jalore, Udaipur CZ: Rahuri, Uralikanchan, Anand, Raipur SZ: Hyderabad, Coimbatore, Mandya, Tirupati, Dharwad

12. AVT-2 – Vicia Advanced Varietal trial -2 in Vicia

Number of entries	5
Contributors	JVS-1, JVS-2, JVS-3, JVS-4, JVS-5
National checks	General mean
Design	RBD with 4 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 3.0 m length)
Seed rate	36.0 g per plot (Approx. 40 Kg/ha)
Seed requirement	0.75 Kg/entry
Fertilizer	N-20Kg, P ₂ O ₅ -40 Kg/ha
Locations (4)	Jhansi, Jabalpur, Rahuri & Raipur

13. AVT-2 – Vicia -seed Advanced Varietal trial -2 in Vicia (seed)

Number of entries	5
Contributors	JVS-1, JVS-2, JVS-3, JVS-4, JVS-5
National checks	General mean
Design	RBD with 4 replications
Plot size	3.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 3.0 m length)
Seed rate	36.0 g per plot (Approx. 40 Kg/ha)
Seed requirement	0.75 Kg/entry
Fertilizer	N-20Kg, P ₂ O ₅ -40 Kg/ha
Locations (4)	Jhansi, Jabalpur, Rahuri & Raipur

13A. AVT-2 – Vicia -agronomy Advanced Varietal trial -2 in Vicia (agronomy)**R-18-AST -2: Advanced Varietal trial -2 in Vicia Agronomy**

Number of entries	5
Entries name	JVS-1, JVS-2, JVS-3, JVS-4, JVS-5
National checks	General mean
levels of P₂O₅ (3)	40, 60, & 80 kg/ha
Replications	3
Design	RBD - total 5x3x3 = 45 plots
Plot size	4 x 3 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 4 m length)
Seed rate	48 g per plot (approx. 40 kg/ha) ; 450g /location
Locations (3)	CZ- Jabalpur, Rahuri & Raipur
Seed requirement	1.35 kg / entry
Fertilizer	N- 20 kg/ha as basal

14. AVT-2 Lolium – Advanced Varietal Trial 2 in Rye grass – annual

Number of entries	3 + 1(NC)
Contributors	PBRG-2, Palam rye grass -1, Palam rye grass-2
National checks	PBRG-1
Design	RBD with 5 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 4.0 m length)
Seed rate	10 kg/ha (12g/plot)
Seed requirement	400 g for each entry and check
Fertilizer	N-90 Kg/ha, P ₂ O ₅ -60 Kg/ha (45 Kg N at the time of sowing and remaining in equal splits after each cut)
Locations (5)	Palampur, Srinagar, Almora, Bajaura (Kullu), Ludhiana

15. AVT-2 Lolium (seed) – Advanced Varietal Trial 2 in Rye grass – annual Seed

Number of entries	3 + 1 (NC)
Contributors	PBRG-2, Palam rye grass -1., Palam rye grass-2
National checks	PBRG-1
Design	RBD with 5 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 4.0 m length)
Seed rate	10 kg/ha (12g/plot)
Seed requirement	400 g for each entry and check
Fertilizer	N-90 Kg/ha, P ₂ O ₅ -60 Kg/ha (45 Kg N at the time of sowing and remaining in equal splits after each cut)
Locations (3)	Palampur, Srinagar, Ludhiana

15A. AVT-2 Lolium (agron) – Advanced Varietal Trial 2 in Rye grass – annual agronomy

R-18-AST -3: Advanced Varietal trial -2 in Rye grass – annual Agronomy

Number of entries	3 + 1(NC)
Entries name	PBRG-2, Palam rye grass -1, Palam rye grass-2
National checks	PBRG-1
N levels (3)	60, 80 & 100 kg/ha
Replications	3
Design	RBD - total 4x3x3 = 36 plots
Plot size	4 x 3 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 4 m length)
Seed rate	12 g per plot (approx. 10 kg/ha); 144g /location
Locations (3)	Palampur, Srinagar, Ludhiana
Seed requirement	450 g / entry
Fertilizer	P- 40 kg/ha as basal

16. VT Red Clover -2016 Varietal trial in Red clover – Perennial -2nd year – to be continued

Number of entries	6 + 1 (NC)
Contributors	RC -2016-1, RC -2016-2, RC -2016-3, RC -2016-4, RC -2016-5, RC -2016-6
National checks	PRC-3
Design	RBD with 4 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 4.0 m length)
Seed rate	10-12kg/ha (15g/plot)
Seed requirement	300 g per entry and check
Fertilizer	N-40 Kg/ha, P ₂ O ₅ -40 Kg/ha
Locations (4)	HZ-Palampur, Srinagar, Bajaura (Kullu), Almora

17. VT White Clover -2016 Varietal trial in White clover – Perennial -2nd year – to be continued

Number of entries	5+1 (Check)
Contributors	PWC-25, PWC-26, JHWC-16-1, JHWC-16-2, JHWC-16-3
National checks	Palampur Composite
Design	RBD with 4 replications
Plot size	4.0 x 3.0 m
Spacing	Row to row 30 cm (each plot accommodating 10 rows of 4.0 m length)
Seed rate	5 kg/ha (7.5 g/plot)
Seed requirement	150 g
Fertilizer	N-40 Kg/ha, P ₂ O ₅ -40 Kg/ha
Locations (4)	HZ-Palampur, Srinagar, Bajaura (Kullu), Almora

18. IVT Bajra (Multicut): Initial Varietal Trial in fodder bajra (multicut) in summer

Number of entries	4 + 3 Checks
Name of entries	PJTSAU (1), BAIF (2), Advanta (1),
National checks	Giant bajra, Moti bajra (state release), BAIF Bajra 1
Design	RBD with 3 replications
Plot size	4.0 x 1.8 m
Spacing	Row to row: 30 cm (each plot accommodating 6 rows of 4 m length)
Seed rate	10 g per plot (approx. 12 Kg/ha)
Seed requirement	250g/entry from each contributor and 250 g for each national check
Fertilizer	N-40 Kg, P ₂ O ₅ -20 Kg/ha
Sowing time	1 st Feb - 15 th Feb. 2018
Harvesting schedule	1st cut : 50 DAS irrespective of flowering ; 2nd cut : 30 Days after 1 st cut 3rd cut : 30 Days after 2 nd cut
Locations (7)	CZ- Rahuri, Uralikanchan, Anand, Jabalpur SZ- Hyderabad, Bangalore, Vellayani

19. AVT-1 Bajra (Multicut): Advanced Varietal Trial-1 in fodder bajra (multicut) in summer

Number of entries	3 + 3 Checks
Name of entries	ADV-0061, AFB-37, HTBH-4902
National checks	Giant Bajra, Moti Bajra, Raj Bajra (state release)
Design	RBD with 4 replications
Plot size	4.0 x 1.8 m
Spacing	Row to row: 30 cm (each plot accommodating 6 rows of 4 m length)
Seed rate	10 g per plot (approx. 12 Kg/ha)
Seed requirement	400g/entry from each contributor and 400 g for each national check
Fertilizer	N-40 Kg, P ₂ O ₅ -20 Kg/ha
Sowing time	1 st Feb - 15 th Feb. 2018
Harvesting schedule	1st cut : 50 DAS irrespective of flowering 2nd cut : 30 Days after 1 st cut 3rd cut : 30 Days after 2 nd cut
Locations (7)	CZ- Rahuri, Uralikanchan, Anand, Jabalpur SZ- Hyderabad, Bangalore, Vellayani

Important and Urgent

For breeding trials, seed of the check varieties and test entries are to be supplied by the concerned scientist to PC (FC&U) by September 25, 2018.

SN	Crop & Variety	Quantity Required (in Kg)	Seed Source
1.	Berseem		
	Wardan	2.0 (IVT)+2.0 (AVT-1) = 4.0 kg	Dr. Vijay Yadav, Head Seed Tech Div., IGFRI, Jhansi
	Bundel Berseem-2	1.0 (IVT)+1.0 (AVT-1) = 2.0 kg	
	Bundel Berseem-3	0.5 (IVT)+0.5 (AVT-1) = 1.0 kg	
	BL-22	0.5 (IVT)+0.5 (AVT-1) = 1.0 kg	Dr. US Tiwana, PAU, Ludhiana
	IVT entries	2.0 kg	Respective breeders
AVT-1 entries	2.0 kg	Respective breeders	
2.	Oat		
	Kent	9.0 (IVTO SC) +11.0 (AVT SC-1) + 11.0 (AVT-SC-2) + 5.0 (AVT2-SC-2 seed) + 16.0 (agron) = 52.0 kg	Dr. Vijay Yadav, Head Seed tech Div, IGFRI, Jhansi
	JHO-2009-1	3.0 (AVTOSC-1) = 3.0 kg	
	JHO-2010-1	2.5 (AVTOSC-1) = 2.5 kg	
	JHO-99-2	3.0 (AVT-SC-2) + 1.0 (AVT-2SC-Seed) kg + 4.5 (agron) = 8.5 kg	
	JHO-822	3.0 (AVT-SC-2) + 1.0 (AVT-2SC-Seed) kg + 3.0 (agron) + 5.0 (IVTO-D) + 6.0 (AVT-1-D) = 18.0 kg	
	JHO-2000-4	2.0 (AVT-SC-2) + 1.0 (AVT-2SC-Seed) + 3.0 (agron) = 6.0 kg	
	OL-125	2.0 (AVT-SC-2) + 1.0 (AVT-2SC-Seed) + 3.0 (agron) = 6.0 kg	Dr. US Tiwana, PAU, Ludhiana
	OS-6	9.0 (IVTO SC) +11.0 (AVT SC-1) + 11.0 (AVT-SC-2) + 5.0 (AVT2-SC-2 seed) + 16.0 (agron) = 52.0 kg	Dr. Yogesh Jindal, CCS HAU, Hisar
	OS-403	6.0 (IVTO SC) = 6.0 kg	
	SKO-90	1.5 (AVT-SC-2) + 1.0 (AVT-2SC-Seed) + 3.0 (agron) = 5.5 kg	Dr. Ansar Ul Haq, SKUAST, Srinagar
	SKO-96	1.5 (IVTO SC) + 1.5 (AVTO SC-1) = 3.0 kg	
	UPO-212	6.0 (IVT MC) + 8.0 (AVT-1 MC) + 5.0 (IVTO-D) + 6.0 (AVT-1-D) = 25.0 kg	Dr. JS Verma, /DR M S Pal/ Dr Birendra Prasad GBPUA&T, Pantnagar
	RO-19	6.0 (IVT MC) + 8.0 (AVT-1 MC) = 14.0 kg	
	RO-11-1	3.0 (IVTO SC) + 5.0 (AVTO SC-1) = 8.0 kg	Dr. AH Sonone, MPKV, Rahuri
	IVT entries - SC	9.0 kg	
	AVT-1 entries-SC	11.0 kg	Respective breeders
	AVT-2 entries-SC	11.0 (breeding) + 5.0 (seed) + 16.0 (agronomy) = 32.0 Kg	Respective breeders
	IVT entries - MC	6.0 Kg	Respective breeders
	AVT-1 entries - MC	8.0 Kg	Respective breeders
IVT entries - Dual	5.0 Kg	Respective breeders	
AVT-1 entries-Dual	6.0 Kg	Respective breeders	
3.	Rye grass		
	PBRG- 1	0.35 + 0.20 (seed) + 0.45 (agron) = 1.0 kg	Dr. U. S Tiwana, PAU
	Entries	0.35 + 0.20 (seed) + 0.45 (agron) = 1.0 kg	Respective breeders
4.	Vicia		
	Entries	0.75 kg + 0.75 kg (seed) + 1.35 (agron) = 2.85 kg	Dr. A. K. Mehta, JNKVV

Summer multicut Bajra information will be communicated later on.

Abbreviations: HZ-Hill zone, NWZ-North-west zone, NEZ-North-east zone, CZ-Central zone, SZ-South zone; NC- National check, ZC- Zonal check

**AICRP ON FORAGE CROPS & UTILIZATION
FINALIZED TECHNICAL PROGRAMME
CROP PRODUCTION TRIALS - RABI 2018-19**

AVT Based trials

R-18-AST -1: Effect of N levels on forage yield of promising entries of oat (AVT-2 SC)

Objective: To study the effect of nitrogen levels and promising entries on yield and quality of oat

Treatment details:

Main plot:

(A) Entries : 7+ 2 (NC) +1 (ZC) (Entries-7, NC (2) and ZC (1))

Entries (7) : SKO-229, HFO-607, HFO-525, JO-05-7, OL-1869-1, OL-1861, OL-1862

National checks: (2): Kent, OS-6

Zonal checks (1): SKO-90 (HZ), , OL-125 (NWZ), JHO-99-2 (NEZ), JHO-2000-4 (SZ)

Sub-plot: (B) N- levels: 4 (30,60,90, and 120 kg N /ha) (Split application of nitrogen)

Year	: Rabi 2018-19	Design	: Split plot
Replications	: Three	Plot size	: 4 m x 3 m
Seed rate	: 120 g/plot (100 kg/ha)	Spacing	: R x R-25 cm
Treatments	: Combinations: 10 X 4=40	Total plots	: 10X4X3=120
Fertilizer	: P ₂ O ₅ -40 Kg/ha basal	Locations	: 11

Seed requirement : 1.44 kg/entry or national check/location

entry or national check : 16 Kg/entry from each contributor, 16.0 Kg/NC

Zonal checks : OL125 (NWZ)- 3.0 kg, JHO-2000-4 (SZ) -3.0 kg, JHO-822 (CZ) -3.0 kg, JHO-99-2 (NEZ)-4.5 kg SKO-90 (HZ) - 3.0 kg

Observations to be recorded:

- Tiller number /m row length at harvest
- Growth parameters (Plant height (cm) and leaf: stem ratio)
- Green fodder, dry fodder yields (q/ha)
- Crude protein content (%) and CP yield (q/ha)
- Per day productivity (Green fodder, dry fodder)

Locations (11)	
HZ-2	Palampur, Srinagar
NWZ-2	Hisar, Ludhiana
NEZ-3	Imphal, Ranchi, Kalyani
CZ-2	Urulikanchan, Jabalpur
SZ-2	Mandya, Hyderabad

R-18-AST -2: Advanced Varietal trial -2 in Vicia Agronomy

Number of entries	5
Entries name	
National checks	General mean
levels of P₂O₅ (3)	40, 60, & 80 kg/ha
Replications	3
Design	RBD - total 5x3x3 = 45 plots
Plot size	4 x 3 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 4 m length)
Seed rate	48 g per plot (approx. 40 kg/ha) ; 450g /location
Locations (3)	CZ- Jabalpur, Rahuri & Raipur
Seed requirement	1.35 kg / entry
Fertilizer	N- 20 kg/ha as basal

R-18-AST -3: Advanced Varietal trial -2 in Rye grass – annual Agronomy

Number of entries	3 + 1(NC)
Entries name	PBRG-2, Palam rye grass -1, Palam rye grass-2
National checks	PBRG-1
N levels (3)	60, 80 & 100 kg/ha
Replications	3
Design	RBD - total 4x3x3 = 36 plots
Plot size	4 x 3 m
Spacing	Row to row-30 cm (each plot accommodating 10 rows of 4 m length)
Seed rate	12 g per plot (approx. 10 kg/ha) ; 144g /location
Locations (3)	Palampur, Srinagar, Ludhiana
Seed requirement	450 g / entry
Fertilizer	P- 40 kg/ha as basal

R-18-AST-4: Nutrient management for productivity enhancement in dual purpose Oats.

Locations: Kalyani, Jorhat, Imphal, Faizabad, Jabalpur, Anand and Durgapura (Jaipur)	Data Reporting: Rabi
Year of Start: 2018-19	Concluding Year: 2020-21

Objectives:

- To find out the effect of nutrient management on green forage quality and grain yield in dual purpose oats
- To effect of nutrient management on physicochemical properties of soil after harvesting
- To study production economics of dual purpose Oats

Technical programme

Treatments:

- T₁:** Control
T₂: RDF (N: P₂O₅: K₂O = 80:40:40 kg/ha)
T₃: 75% of RDN + Vermicompost @ 2t/ha
T₄: T₃ + PSB (Soil) @ 1.5 kg/ha
T₅: T₄ + Seed treatment with *Azotobactor* @ 10 g/kg seed
T₆: T₅ + ZnSO₄ @ 20 kg/ha (soil application as basal)
T₇: T₅ + ZnSO₄ @ 15 kg/ha (soil application as basal)
T₈: T₆ + Foliar spray of ZnSO₄ (0.5%) at just before flowering
T₉: T₇ + Foliar spray of ZnSO₄ (0.5%) at just before flowering

Cutting: 1st cut after 55 DAS then crop left for seed production

Nitrogen management: 50% at basal + 25% after 40 DAS + 25 % after 1st cut

Experimental Details

Crop	: Oats (dual purpose)	Replications	: 3
Spacing	: 25 cm X 5 cm	Seed rate	: 80 kg/ha
Duration	: 3 years	Season	: Rabi-2018-19
Treatments combinations	: 27	Design	: RBD

Observations to be recorded:

1. Plant height (cm): 55 DAS (first cut) at seed harvest
2. Green forage yield (q/ha) and dry matter yield (q/ha) at first cut)
3. Panicle length, Panicle weight, Grains /panicle, test weight (1000 seed wt. in g)
4. Grain yield (q/ha), Straw yield (q/ha)
5. Green forage quality: Crude protein content (%) and Crude protein yield (q/ha)
6. Stover quality: Crude protein content (%) and Crude protein yield (q/ha)
7. Economics: Gross return, net return, B:C ratio
8. Initial nutrient status (including Zn) of soil
9. Final nutrient status (including Zn) of soil after harvesting

R-18-AST-5: Studies on effect of varieties and cutting management on productivity, quality and seed production of berseem

(Pantnagar & Ranchi)

Objectives

- i. To study the production potential of berseem varieties
- ii. To find out the ideal time of last cut of berseem for higher seed production in Tarai region of Uttarakhand.

Treatments: 08

- a. **Main plot: Varieties = 02 (BL -42, BB-3)**
- b. **Sub plot effect: cutting management (Last cut) = 04**
 - i. 15th February (2 cutting)*
 - ii. 02 March (3 cutting)
 - iii. 17 March (3 cutting)
 - iv. 1 April (3 cutting)

*** Note: Date of last cut and crop will be left for seed production.**

Varieties 02	BL 42 and HB-2	Seed rate	25 kg/ha
Plot size	3m x4m (10 lines at 30 cm spacing)	Sowing Date	15 November
Replications	03	Design	Spilt Plot Design

Detail of cutting management

No. of Cutting	Date of Last Cut				Remark	Total days after sowing
	15 Feb	2 March	17 March	1 April		
I	15 Jan	15 Jan	15 Jan	15 Jan	30 days interval	60 days
II	15 Feb	15 Feb	15 Feb	15 Feb	30 days interval	90 days
III	X*	02 March	x	x	15 days interval	105 days
iv	x	x	17 March	x	30 days interval	120 days
v	x	x	x	01 April	45 days interval	135 days
No. of total Cutting	02	03	03	04		

Note: x*: No cut.

1. 1st cut will be taken after 60 days of sowing. The cutting days i.e. 60, 90, 105, 120 and 135 days after sowing are mentioned for different dates of last cut. The crop will be left for seed production after last cut.
2. The cutting shall be taken as per the date of last cut. Therefore the 3rd and 5th cut will be taken after 15 days interval of previous cut only at the last cut date of 2 March and 1 April, respectively.
3. The 2% solution of KNO₃ will be sprayed in all treatments at flowering time (as a common spray).

Observations;

i	Plant population per m row length	ii	Growth parameters : Plant height, Dry and L:S ratio
iii	Green fodder yield	iv	Dry matter yield
v	Crude protein (%)	vi	No. flowers /m ²
vii	Seed yield	viii	Test weight
ix	Ratio of filled and unfilled grains	x	Germination count
xi	Seed yield per plant	xii	Economics.

R-18-AST-6: Influence of cutting stages and chemical spray on seed yield and quality of fodder cowpea

Location: IGFRI, SRRS, Dharwad	Season: <i>Kharif</i> 2018-19
Year of Start: 2018-19	Concluding Year: 2019-20

Objectives:

- To identify the right stage of harvesting the cowpea pods for optimum seed yield and quality
- To evaluate the influence of growth retardants and defoliators on synchrony of cowpea pod maturity

Treatment details:

Factor 1: Cutting stages (C)

C₁: Cutting of plant at 50 % pod maturity stage

C₂: Cutting of plant at 75 % pod maturity stage

C₃: Control (Regular pickings)

Factor 2: Use of growth retardants/defoliators (G)

G₁: Spray of Paclobutrazol (Cultar) @ 90 ml/ha at flowering stage

G₂: Spray of Chlormequat chloride (CCC) 50 % SL @ 500 ml/ha at flowering stage

G₃: Spray of Mepiquat chloride (Chamatkar) @ 1000 ppm at flowering stage

G₄: Control (No Spray)

Experiment details:

Variety: BL-2

Location: IGFRI, SRRS, Dharwad

Season: *Kharif* 2018-19

Design: RBD in factorial concept

Replication: 3

Treatment combination: 3 x 4 = 12

Spacing: 45 cm x 15 cm

RDF: 25:50:25 kg NPK per ha

Plot size: 3.6 m x 3.6 m

Observations to be recorded:

Growth characters

1. Days to flower initiation
2. Days to maturity (no of days taken from emergence to harvesting)

Yield parameters

1. No of pods /plants
2. No of seeds /pod
3. Seed yield / plant(g)
4. Seed yield (q ha⁻¹)
5. Test weight (g)
6. Harvest index (%)

Seed Quality Parameters

1. Germination percent
2. Root length (cm)
3. Shoot length (cm)
4. Seedling vigour index (SV-I)

R-18-AST-7: Effect of intercropping on seed setting and seed yield in lucerne.

Location: Bikaner	Season: Rabi
Year of Start: 2018-19	Concluding Year: 2020-21

Objectives:

- To find out effect of intercropping on Lucerne through improving pollinators
- To find out suitable intercrop for seed setting in Lucerne through improving microclimate.

Treatments

1	Control (without intercrop) -Sole lucerne	2	Bajra Intercrop at (1:5)
3	Bajra Intercrop at (1: 10) -Bajra + Lucerne	4	Bajra Intercrop at (1:15)
5	Dill Intercrop at (1:5)- Dill + Lucerne	6	Dill Intercrop at (1: 10)
7	Dill Intercrop at (1:15)	8	Mustard Intercrop at (1:5) - Mustard + Lucerne
9	Mustard Intercrop at (1: 10)	10	Mustard Intercrop at (1:15)

Design	:	RBD	Replications	:	Three
Plot size	:	15.0m x 10.20 m (153 m ²)	Spacing	:	Lucerne (30.0 cm) and intercrop replace two row of lucerne
Crop	:	Krishna/Anand Lucerne-2,	Cutting management	:	Two cut at 50-55DAS and harvesting for seed yield.
Year of start	:	Rabi 2018-19	Duration	:	Three years
Variety	:	: Krishna/Anand Lucerne-2			

Observations to be recorded

- No. of branches
- Yield parameters (Number of pods per plant, Number of seeds per pod and 1000 seed weight)
- Seed yield (kg/ha)
- Economics (Cost of cultivation, Gross return, Net return and B:C ratio)

R-18-AST-8: Feasibility studies of growing different oat (*Avena sativa L.*) cultivars as fodder crop on hilly terraces of Nagaland under rainfed condition.

Location: SASRD, Medziphema, Nagaland University	Data Reporting: Rabi
Year of Start: 2018-19	Concluding Year: 2018-19

Duration: One year

Objectives:

1. To screen the suitable cultivars of oat as fodder crop for the hilly state of Nagaland
2. To study the growth and fodder yield of oat cultivars

EXPERIMENTAL DETAILS

Treatments	:	6-oat cultivars	Design	:	RBD
Replication	:	4	Total plots	:	24
Gross plot size	:	4m x 3m			

Observations to be recorded:

- ✦ Plant height (cm) at 15 days interval till harvest
- ✦ Green forage yield (at flower initiation stage)
- ✦ Dry matter yield
- ✦ Crude protein content (%)
- ✦ Soil N, P, K, OC, pH an before sowing and after completion of the experiment

On- Going trials

Forage Crop Production (Rabi 2018-19)

SN	Trial Name	Title of trial	Location	Season/ Year	Concluding Year
1	PS-14-AST-4	Studies on the effect of planting geometry of tall fescue grass and seed rates of white clover in wet temperate conditions	Palampur and Srinagar	Rabi	Rabi-2019-20
3	K-15-AST-11 C	Studies on carbon sequestration in perennial grass based cropping systems	Hyderabad, Coimbatore, Vellayani, Ranchi, Jabalpur	Rabi	Rabi-2019-20
4	K-15-AST-12 C	Studies on the productivity and carbon sequestration of silvipastoral systems in hills of north western Himalayas	Palampur and Srinagar	Rabi	Rabi-2019-20
5	R-15-AST-1	Productivity of oat-lathyrus intercropping system as influenced by integrated nutrient management	Kalyani, Ranchi, Imphal & Bhubaneswar	Rabi	Rabi-2018
6	K-16-AST-1	Feasibility of Hydroponics fodder production system- A Quantitative and Qualitative study	Mandya, Ludhiana	Rabi	Rabi-2019
8	R-16-AST-1 (b)	Contingent crop plan for fodder oat production in semi arid tropics under irrigated condition	Hyderabad and Dharwad	Rabi	Rabi 18-18
9	R-16-AST-2	Enhancing seed setting in Lucerne through foliar spray	Coimbatore, Ludhiana, Hyderabad, Bikaner, Anand	Rabi	Rabi-208-19
11	K-15-AST-1 L	Studies on different models for year round green fodder production under irrigated condition.	Mandya	Rabi	Rabi-2019
15	R-15-AST-4	Study on lucerne + oats /sarson fodder production system at variable seed rates of mixed crop under irrigated condition	Bikaner	Rabi	Rabi-2018
18	K-16-AST-6	Organic nutrient management in sorghum-berseem cropping sequence for sustainable fodder production	Hisar	Rabi	Rabi-2021
19	K-16-AST-8	Resource management in rice-oat cropping system under sodic soils	Faizabad	Rabi	Rabi-2019
20	K-17-AST-2	Standardization of seed production techniques in fodder Maize	Raipur		
21	R-17-AST-3	Evaluation of fodder productivity and quality in dual purpose wheat and berseem (single cut) intercropping system	Ludhiana	Rabi	Rabi-2018-19
22	R-17-AST-4	Effect of different nitrogen levels on productivity of perennial grasses under hilly terrace condition	Nagaland University, Medziphema		
23	R-16-AST-5	Seed yield maximization in Oat cv. RO-19 (Phule Harita)	Rahuri	Rabi	Rabi-2018-19

PPT 1: Monitoring of diseases and insect pests in *Rabi* forage crops ecosystem.

Locations: Bhubaneswar, Jhansi, Palampur, Dharwad, Rahuri and Ludhiana

PPT 2: Evaluation of *Rabi* breeding materials for their resistance to diseases and insect pests.

Locations: Bhubaneswar, Palampur, Rahuri, Dharwad and Ludhiana

PPT 17: To study the pathogenic variability of *Blumeria graminis* f. sp. *avenae* on oat

Location: Palampur

- i. Refinement of differential set
- ii. Inheritance of powdery mildew in oat

PPT 26: Biological management of Oat aphid *Rhopalosiphum padi* on Oat

Locations: Rahuri, Ludhiana, Dharwad

Plot size: 3 x 4 m²

Replication: 03

Design: RBD

Treatments

T₁	:	Foliar application of <i>L. lecani</i> @ 1x10 ⁸ CFU/g (5 g/lit)
T₂	:	Foliar application of <i>L. lecani</i> @ 1x10 ⁸ CFU/g (7.5 g/lit)
T₃	:	Foliar application of <i>M. anisopliae</i> @ 1x10 ⁸ CFU/g (5 g/lit)
T₄	:	Foliar application of <i>M. anisopliae</i> @ 1x10 ⁸ CFU/g (7.5 g/lit)
T₅	:	Commercial neem product (Azadirachtin – 10000 ppm) @ 2ml/lt
T₆	:	NSE @ 5%
T₇	:	Untreated control

Observations

1. Pre-count and post treatment count of larvae will be taken at 5 and 7 DAS.
2. Natural enemy count.
3. Green fodder yield (q/ha).
4. Economics.

*Bioagents will be supplied by Rahuri centre

*Seeds of oat variety Kent will be supplied by Ludhiana centre.

PPT 30: Biological management of powdery mildew of oats caused by *Blumeria graminis* f. sp. *avenae*

Location: Palampur

Treatments: 10 **Replications:** 3 **Design:** RBD **Plot size:** 3x2 m²

T₁	:	Three foliar spray of <i>Trichoderma viride</i> @ 0.5%
T₂	:	Three foliar spray of <i>Trichoderma harzianum</i> @ 0.5%
T₃	:	Three foliar spray of <i>Pseudomonas flourescens</i> @ 0.5%
T₄	:	Three foliar spray of extract of <i>Eupatorium adenophorum</i> @ 10%
T₅	:	Three foliar spray of Azadirachtin 3000 ppm @ 0.3%
T₆	:	Three foliar spray of NSE 5%
T₇	:	Three foliar spray of Eucalyptus @ 10%
T₈	:	Three foliar spray of Vitex @ 0.1%
T₉	:	Three foliar spray of hexaconazole @0.1% (Chemical control)
T₁₀	:	Control

Observations

1. Powdery mildew severity (%)
2. Seed yield (q/h)

PPT-31: Eco-friendly pest management techniques in berseem ecosystem

Location: Ludhiana

Design: RBD **Replication:** 3 **Plot size:** 5x5 m²

Treatments

T₁	:	Seed treatment of <i>Trichoderma viride</i> @5g/Kg+foliar spray of NSE @ 5%
T₂	:	Soil application of <i>Trichoderma viride</i> @ 1kg/25kg FYM/acre + foliar spray of NSE @ 5%
T₃	:	T1+Chickpea as trap crop on border row + Bird perches
T₄	:	T2+Chickpea as trap crop on border row + Bird perches
T₅	:	T1+Sunflower as trap crop on border row + Bird perches
T₆	:	T2+Sunflower as trap crop on border row + Bird perches
T₇	:	Farmer's Practice (Spray of Carbendazim on fodder as well as seed crop + Malathion on fodder crop and Chlorantraniliprole 18.5 SC on seed crop)
T₈	:	Control

Observations

- Number of larvae (*H. armigera* or other lepidopteran larvae) per meter row length on berseem crop.
- Number of larvae/ plant on trap crop.
- Activity of natural enemies on trap as well as berseem crop.
- Disease severity.
- Green fodder yield and seed yield.

PPT 32: Validation of best treatment of trial entitled “Management of soil borne and powdery mildew diseases in red clover seed crop”

Location: Palampur

Plot size: 100 m²

Treatments

T₁	:	Seed treatment with <i>Trichoderma</i> @ 5g/kg seed+ Three foliar spray of <i>Trichoderma</i> @ 0.5%
T₂	:	Seed treatment with Carbendazim @ 2 g/kg seed+ Three foliar spray of Hexaconazole @ 0.1 %
T₃	:	Control

Observations

- Disease severity of powdery mildew.
- Disease incidence of soil borne diseases.
- Seed yield (q/ha).

PPT 33: Validation of best treatment of trial entitled “Management of foliar diseases of oat”.

Location: Ludhiana and Bhubaneswar

Plot size: 100 m²

Treatments

T₁	:	Seed treatment with Carbendazim 50WP @ 2g/kg seed + foliar application of Propiconazole 25 EC @ 1ml/lit after 21 DAS
T₂	:	Seed treatment with <i>Trichoderma viride</i> (CFU 10 ⁶ /g of formulation) @ 5g/kg of seed + foliar application of Propiconazole 25EC @ 1ml/lit after 21DAS
T₃	:	Untreated control

Observations

- Severity of foliar diseases.
- Yield at 50 % flowering.

PPT 34: Integrated disease management in berseem

Location: Jhansi, Ludhiana, Bhubaneswar, Palampur

Design: RBD

Replication: 3

Plot size: 3x2 m²

Treatments

T₁	:	Seed treatment with Chitosan @ 0.05 %
T₂	:	Seed treatment with <i>Trichoderma</i> @ 0.05 %
T₃	:	Seed treatment with carbendazim @ 0.02 %
T₄	:	Seed treatment with Chitosan @ 0.05 % + <i>Trichoderma</i> @ 0.05%
T₅	:	Seed treatment with Chitosan @ 0.05 % + carbendazim @ 0.01%
T₆	:	T1 + foliar spray of Chitosan @ 0.05%
T₇	:	T2+ foliar spray of Chitosan @ 0.05 %
T₈	:	T3 +foliar spray of Chitosan @ 0.05 %
T₉	:	T3 + foliar spray of carbendazim @ 0.01 %
T₁₀	:	Control

Target disease: root rot, stem rot, leaf blight

Observations

- Severity/incidence of diseases.
- Green fodder yield and seed yield.

List of Participants

S. No.	Name & Address of Participants
1.	Dr. O.P. Chaudhary, Joint Secy. (NLM), GOI, New Delhi
2.	Prof. K.P. Singh, Vice Chancellor, CCS HAU, Hisar
3.	Dr. R. K. Singh, ADG (CC & FFC), I.C.A.R.
4.	Dr. Khem Chand, Director, IGFRI, Jhansi
5.	Dr. K. S. Grewal, Dean, COA, CCS HAU, Hisar
6.	Dr. D.B. Yadav, Project Director, CCS HAU, Hisar
7.	Dr. A. K. Roy, Project Coordinator, Jhansi
8.	Dr. J. P. Yadavendra, Ex Professor Plant Breeding & RAC member, IGFRI
9.	Dr. I. S. Solanki, Director of Research, BAU, Sabour, Bihar
10.	Dr. R. K. Agrawal, Principal Scientist (Agronomy), IGFRI, Jhansi
11.	Dr Nitish Ratan Bhardwaj, Scientist (Pl. Pathology), IGFRI, Jhansi
12.	Dr Ratnakar S. Patel, STA, IGFRI, Jhansi
13.	Sri H. K. Agarwal, CTO, IGFRI, Jhansi
14.	Dr. A. B. Tambe, Sci. (Entomology), M.P.K.V., Rahuri
15.	Dr. H.P.Pardeshi, Scientist (agronomy), M.P.K.V., Rahuri
16.	Dr. A. H. Sonone, Sr. Forage Breeder, M.P.K.V., Rahuri
17.	Dr. S.V. Damame, Scientist (Bio Chemistry), M.P.K.V., Rahuri
18.	Dr. S. S. Shekhawat, Forage Breeder, RAU, Bikaner (Rajasthan)
19.	Dr. R. C. Bairwa, Asstt. Prof. (Agro), RAU, Bikaner (Rajasthan)
20.	Dr. V. K. Sood, Sr. Forage Breeder, CSK HPKV, Palampur
21.	Dr. Naveen Kumar, Sr. Agronomist, CSK HPKV, Palampur
22.	Dr. D. K. Banyal, Sr. Sci. (Plant Pathology), CSK HPKV, Palampur
23.	Dr. R. Katoch, Sci. (Biochemistry), CSK HPKV, Palampur
24.	Dr. U. S. Tiwana, Sr. Forage Agronomist, PAU, Ludhiana
25.	Dr. Rahul Kapoor, Sr. Forage Breeder, PAU, Ludhiana
26.	Dr. Meenakashi Goyal, Asstt. Biochemist, PAU, Ludhiana
27.	Dr. Ashlesha Singla, Plant Pathology, PAU, Ludhiana
28.	Dr. K. K. Sharma, Pr. Scientist (Agronomy), AAU, Jorhat
29.	Dr. S. Bora Neog, Pr. Sci. (Plant Breeding) , AAU, Jorhat
30.	Dr. R Paresh Kumar Himmatlal, AAU, Anand (Gujarat)
31.	Dr. Mayuri Sahoo, Scientist (Plant Breeding), IGKV, Raipur (Chhattisgarh)
32.	Dr. S.K. Jha (Agronomy), IGKV, Raipur (Chhattisgarh)
33.	Dr. Ramesh Yadav, Agronomist, NDU&T, Faizabad (Uttar Pradesh)
34.	Dr. M. S. Pal, Prof. Agronomy, GBPUA & T, Pantnagar
35.	Dr. J. S. Verma, Sr. Scientist (Plant Breeding), GBPUA & T, Pantnagar
36.	Dr. Birendra Prasad, Sr. Scientist (Plant Breeding), GBPUA & T, Pantnagar
37.	Dr Nilanjay, Scientist (Plant Breeding), RPCAU, Pusa, Samastipur (Bihar)
38.	Dr. S. Mala, Professor (Agronomy) PJNCOA & RI, Karaikal (Puducherry)
39.	Dr. S. Tirumala Reddy, Scientist, Acharya N. G. Ranga Agricultural University, Guntur
40.	Dr. Mareen Abraham, Assoc. Professor. KAU, Vellayani, Thiruvananthapuram
41.	Dr. Usha C Thomas, Astd. Professor (Agronomy), KAU, Vellayani, Thiruvananthapuram
42.	Dr. Yogendra Prasad, Jr. Scientist, Plant Breeding, BAU, Ranchi (Jharkhand)
43.	Dr. Birendra Kumar, Jr. Scientist (Agronomy)
44.	Dr. P. Mahadevu, Sr. Breeder, UAS, (Mandya) Bangalore (Karnataka)
45.	Dr. B. G. Shekara, Scientist (Agronomy) UAS, (Mandya) Bangalore (Karnataka)

46.	Dr. C. Babu, Assoc. Prof (PB), TNAU, Coimbatore (Tamil Nadu)
47.	Dr. S. D. Sivakumar, Asstt. Prof. (Agronomy) TNAU, Coimbatore (Tamil Nadu)
48.	Dr. A. K. Mehta, Sr. Forage Breeder, JNKVV, Jabalpur
49.	Dr. S.K. Biliaya, Forage Breeder, JNKVV, Jabalpur
50.	Dr. Amit Jha, Jr. Scientist (Agronomy), JNKVV, Jabalpur
51.	Dr. Noor Saleem Khuroo, Sr. Scientist (PB), SKUAST-K, Srinagar (J&K)
52.	Dr. Gul Zaffar, Professor, SKUAST-K, Srinagar (J&K)
53.	Dr. Kalyan Jana, Agronomist, BCKV, Kalyani (West Bengal)
54.	Mr. R. Joseph Koireng, Jr. Agronomist, CAU, PO Box 23, Imphal
55.	Dr. M. Shanti, Scientist (Biochemistry), PJTSAU, Hyderabad (Telangana)
56.	Dr. T. Sashikala, Sr. Scientist (Plant Breeding), PJTSAU, Hyderabad (Telangana)
57.	Dr. B. Murali, Scientist (Agronomy), PJTSAU, Hyderabad (Telangana)
58.	Mr. P.S. Takawale, Forage Breeder, BAIF, Urulikanchan, Pune (Maharashtra)
59.	Mr. R. V. Kale, Scientist (Agronomy), BAIF, Urulikanchan, Pune
60.	Dr. Tankeswar Gohain, Asst. Prof., Nagaland University, Medziphema- Nagaland
61.	Dr. Arabinda Dhal, Jr. Pathologist, OUAT, Bhubaneswar 751 003 (Orissa)
62.	Dr. P.K. Verma, Head, Forage Section, CCS HAU, Hisar
63.	Dr. D. S. Phogat, Scientist, (Plant Breeding)
64.	Dr. Yogesh Kumar Jindal, Asstt. Scientist, Forage Section
65.	Dr. Satyawan Arya, Asstt. Scientist, Forage Section
66.	Dr. Pummy Kumari, Asstt. Scientist, Forage Section,
67.	Dr. Satpal, Asstt. Scientist Agro., Forage Section,
68.	Dr. Naveen Kumar, Asstt. Scientist, Forage Section
69.	Mr. Neeraj Kumar, Asstt. Scientist, Forage Section
70.	Jayeata Chakrabarty, Ex-student
71.	Dr. Umesh S. Kudtarkar. Jr. Agrostologist, BSKVV, Agric. Res. Station, Palghar 401404 (Maharashtra)
72.	Dr. J. K. Bisht, PS (Agronomy) Almora (Uttarakhand)
73.	Dr. R.P. Yadav, VPKAS, Almora (Uttarakhand)
74.	Dr. Mukesh, iimr, Ludhiana, Punjab
75.	Dr. Magan Singh, Senior Scientist (Agronomy), NDRI, Karnal 132 001 (Haryana)
76.	Dr. P. K. Mukherjee, Senior Scientist, Agronomy, IVRI, Bareilly (Uttar Pradesh)
77.	Dr. V.V. Ansodariya, Assoc. Res. Scientist (Plant Breeding), Grassland Research Station, Junagadh Agricultural University, Dhari Dist:- Amreli
78.	Dr. A.D. Rathod, Grassland Research Station, Junagadh Agricultural University, Dhari Dist:- Amreli
79.	Dr. S. A. Kherki, Professor (Plant Breeding), SVPUA&T, Meerut (U.P.)
80.	Dr. B. Singh, Regional Fodder Station Hyderabad
81.	Mr. Ajay Yadav , Regional Fodder Station, Chennai
82.	Mr. Yogendra kumar, Regional Fodder Station, Jammu
83.	Dr. Santosh, RFS, Suratgarh, Regional Fodder Station Rajasthan
84.	Dr. Sushil Kumar, NBPGR, Regional Fodder Station, Srinagar
85.	Brijender Koli, Regional Fodder Station, Kalyani,
86.	Dr. B.P. Singh, DGM, NSC, Hisar
87.	Mr. Mohomad Rigoz Bhimani, Alamdar Seeds Pvt. Ltd, Gujarat
88.	Mr. Zohid Husain Bhimani, Alamdar Seeds Pvt. Ltd, Gujarat
89.	Dr. ASN Reddy, SIRA Seeds, Bengaluru
90.	Mr. Sumit Gupta, Shiv Ganga Hybrid Seeds Pvt. Ltd Hisar
91.	Kribhco, Haryana
92.	Super Seeds (P) Ltd., # 32, New Anaj Mandi, Hisar 125 001

93.	Director of Research, CCS HAU, Hisar
94.	Director Extension Education, CCS HAU, Hisar
95.	Director, Human Resource Management, CCS HAU, Hisar
96.	Dean, Post Graduate Studies, CCS HAU, Hisar
97.	Dean, College of Agriculture, CCS HAU, Hisar
98.	Dean, COAE&T, CCS HAU, Hisar
99.	Dean, COBS&H, CCS HAU, Hisar
100.	Ms. Susmita Dey, Ph.D. student
101.	Dean, COHS, CCS HAU, Hisar
102.	Director Students' Welfare, CCS HAU, Hisar
103.	Registrar, CCS HAU, Hisar
104.	Comptroller, CCS HAU, Hisar
105.	Dr. I. S. Panwar, HOD, G&PB, CCS HAU, Hisar
106.	Dr. P. K. Verma, Head, Forage Section
107.	Dr. D. S. Phogat, Scientist, (Plant Breeding)
108.	Dr. Yogesh Kumar Jindal, Asstt. Scientist, Forage Section
109.	Dr. Satyawan Arya, Asstt. Scientist, Forage Section
110.	Dr. Pummy Kumari, Asstt. Scientist, Forage Section,
111.	Dr. Satpal, Asstt. Scientist Agro., Forage Section,
112.	Dr. Naveen Kumar, Asstt. Scientist, Forage Section
113.	Mr. Neeraj Kumar, Asstt. Scientist, Forage Section
114.	Jayeata Chakrabarty,
115.	Director, Regional Fodder Station, GOI, Hisar
116.	Dr. Uma, Asstt. Agronomist, Deptt. Agronomy
117.	Dr. Divya Phogat, Asstt. Scientist, Wheat & Barley
118.	Dr. Anil, Asstt. Entomologist, Cotton Section
119.	Dr. S. K. Pahuja, HOS, Bajra
120.	Dr. Dalvinder Singh, Asstt. Scientist, Forage
121.	Dr. Rajesh Arya, Asstt. Scientist, MAPC Section
122.	Dr. V. K. Madan, HOS (MAPC)
123.	Dr. V. S. Mor, Asstt. Scientist, SST
124.	Dr. Promil Kapoor, Asstt. Scientist, Pulses Section
125.	Dr. Ashok Chhabra, Pulses Section
126.	Dr. Kushal Raj, Bajra Section
127.	Dr. Ravika, Asstt. Scientist, Teaching Section
128.	Dr. Ashish Jain, SRF, Cotton Section
129.	Dr. R. K. Sheoran, HOS, Oilseeds Section
130.	Dr. Ram Avtar, Asstt. Scientist, Oilseeds Section
131.	Dr. Bhagat Singh, Asstt. Scientist, Wheat & Barley
132.	Dr. Anil Yadav, Pr. Scientist
133.	Dr. Krishan Kumar, Asstt. Scientist, Pulses
134.	Dr. S.R. Pundir, Asstt. Scientist, Cotton Section
135.	Dr. Manjit Singh, (Transport Officer)
136.	Dr. Mukesh Kumar, STA, (Pearl millet)
137.	Dr. R. S. Sangwan, HOS, Cotton Section
138.	Dr. B. S. Beniwal, Officer-in-charge, Hospitality
139.	Dr. O. P. Bishnoi, Asstt. Scientist, Wheat & Barley
140.	Dr. Omender Sangwan, Asstt. Scientist, Oilseeds
141.	Dr. Meenakshi, Asstt. Scientist, MAPC Section
142.	Dr. Lakshmi Chaudhary, Asstt. Scientist, Pulses

143.	Dr. Somveer, Asstt. Scientist
144.	Dr. Ravish, Asstt. Scientist
145.	Mr. Vivek Kumar, SRF
146.	Dr. Pankaj Kumar, SRF
147.	Mr. Dharmendra, Ph.D. student
148.	Mr. Sunil, Ph.D. student
149.	Ms. Anu, Ph.D. student
150.	Mr. Bhartendu Jain, Ph.D. student
151.	Ms. Meenakshi Rathi, Ph.D. student
152.	Mr. Arpit Gaur, Ph.D. student
153.	Ms. Neha, Ph.D. Student
154.	Mr. Atman Punia, Ph. D. student
155.	Mr. Vikesh, M.Sc. student
156.	Mr. Bhaskar Reddy, M.Sc. student
157.	Ms. Kiran, M.Sc. student
158.	Ms. Parul, M.Sc. student
159.	Mr. Pankaj Kumar, M.Sc. student
160.	Mr. Deepak Kaushik, M.Sc. student

Glimpses of Media Coverage

संगोष्ठी हरियाणा कृषि विश्वविद्यालय में चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी आरंभ

चारा फसलों के बीज की उपलब्धता बढ़ाना जरूरी: डॉ. चौधरी

मिस्री पन्थ मजदूर, हिसार। हरियाणा कृषि विश्वविद्यालय में आज चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। विश्वविद्यालय के अनुसंधानकेंद्र एवं पौध प्रजनन विभाग के चारा अनुसंधान द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वयक अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई इस संगोष्ठी का उद्घाटन डॉ. ओपी चौधरी, संयुक्त सचिव, राष्ट्रीय पशुधन मिशन, भारत सरकार ने किया।

इस अवसर डॉ. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है तथा विभिन्न विभिन्न निजी उद्यमों के साथ तालमेल स्थापित किया जा चाहिए। इससे चारा की चारा फसलों की खेती को विकसित किया जा सकेगा।

डॉ. ओपी चौधरी ने अवार्ड प्राप्त करते हुए हरियाणा कृषि विश्वविद्यालय के वैज्ञानिकों को उभार कर चारा फसलों पर दो दिवसीय संगोष्ठी का शुभारंभ किया। इस अवसर पर डॉ. चौधरी ने चारा फसलों के बीज की उपलब्धता बढ़ाने के लिए निजी उद्यमों के साथ तालमेल स्थापित किया जा चाहिए। इससे चारा की चारा फसलों की खेती को विकसित किया जा सकेगा।

डॉ. ओपी चौधरी ने अवार्ड प्राप्त करते हुए हरियाणा कृषि विश्वविद्यालय के वैज्ञानिकों को उभार कर चारा फसलों पर दो दिवसीय संगोष्ठी का शुभारंभ किया। इस अवसर पर डॉ. चौधरी ने चारा फसलों के बीज की उपलब्धता बढ़ाने के लिए निजी उद्यमों के साथ तालमेल स्थापित किया जा चाहिए। इससे चारा की चारा फसलों की खेती को विकसित किया जा सकेगा।

चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय लोक संपर्क कार्यालय

का नाम पंजाब केसरी

9.2.2018 पृष्ठ सं. 2 कॉलम 1



मुख्यातिथि डॉ. ओ.पी. चौधरी से अवार्ड प्राप्त करते हरियाणा कृषि वि.वि. के वैज्ञानिकों की टीम।

चारा फसलों के बीज की उपलब्धता बढ़ाना बेहद जरूरी : डा. चौधरी

हिसार, 7 सितम्बर (पंकेस): चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय में आज चारा फसलों पर 2 दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। वि.वि. के अनुसंधानकेंद्र एवं पौध प्रजनन विभाग के चारा अनुसंधान द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वयक अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई संगोष्ठी का उद्घाटन डॉ. ओ.पी. चौधरी, संयुक्त सचिव, राष्ट्रीय पशुधन मिशन, भारत सरकार ने किया।

इस अवसर पर डॉ. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है तथा जिसके लिए विभिन्न निजी उद्यमों के साथ तालमेल स्थापित किया जाना चाहिए। वि.वि. के परियोजना निदेशक डा. धर्मवीर यादव ने कहा कि भारत में लगभग 20 प्रतिशत पशुधन है जबकि कुल खेती के केवल 4 प्रतिशत भूमि पर चारे की खेती होने के कारण लगभग 31 प्रतिशत हरा चारा तथा 12 प्रतिशत सूखे चारे की कमी रहती है। हरियाणा में केवल 9 प्रतिशत भूमि पर चारे की खेती की जाती है जोकि पशुधन की चारा आपूर्ति के लिए

चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय, हिसार लोक संपर्क कार्यालय

समाचार-पत्र का नाम पंजाब केसरी

दिनांक 9.2.2018 पृष्ठ सं. 2 कॉलम 1

राज्य में पशुधन के हिसाब से हरा चारा क्षेत्र बढ़ाने की जरूरत

हिसार, 7 सितम्बर (पंकेस): चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय में आज चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। विश्वविद्यालय के अनुसंधानकेंद्र एवं पौध प्रजनन विभाग के चारा अनुसंधान द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वयक अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई इस संगोष्ठी का उद्घाटन डॉ. ओपी चौधरी, संयुक्त सचिव, राष्ट्रीय पशुधन मिशन, भारत सरकार ने किया।

इस अवसर डॉ. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है तथा विभिन्न विभिन्न निजी उद्यमों के साथ तालमेल स्थापित किया जा चाहिए। इससे चारा की चारा फसलों की खेती को विकसित किया जा सकेगा।

चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय, हिसार लोक संपर्क कार्यालय

समाचार-पत्र का नाम हिन्दुस्तान टाइम्स एग्रीकल्चरल

दिनांक 9.2.2018 पृष्ठ सं. 6 कॉलम 2-7

चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी : चौधरी

हिसार, 7 सितम्बर (पंकेस): चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय में आज चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। विश्वविद्यालय के अनुसंधानकेंद्र एवं पौध प्रजनन विभाग के चारा अनुसंधान द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वयक अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई इस संगोष्ठी का उद्घाटन डॉ. ओपी चौधरी, संयुक्त सचिव, राष्ट्रीय पशुधन मिशन, भारत सरकार ने किया।

इस अवसर डॉ. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है तथा विभिन्न विभिन्न निजी उद्यमों के साथ तालमेल स्थापित किया जा चाहिए। इससे चारा की चारा फसलों की खेती को विकसित किया जा सकेगा।

चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय, हिसार
लोक संपर्क कार्यालय

समाचार-पत्र का नाम नया सौर
दिनांक 8.9.2018 पृष्ठ सं. 6 कॉलम 11-8

देश में 31 प्रतिशत हरा चारा, 12 प्रतिशत सूखे चारे की कमी: डॉ. यादव

हिसार/08 सितंबर/रिपोर्टर
चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय में चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। विश्वविद्यालय के अनुसंधानिकी एवं पौध प्रजनन विभाग के चारा अनुभाग द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वित अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई इस संगोष्ठी का उद्घाटन राष्ट्रीय पशुधन मिशन के संयुक्त सचिव डॉ. ओपी चौधरी ने किया। इस अवसर पर डॉ. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है तथा जिसके लिए विभिन्न निम्न उद्यमों के साथ तालमेल स्थापित किया जाना चाहिए। इसके साथ ही चारा फसलों की खेती को किसानों के स्तर पर भी अधिक बढ़ावा देने की जरूरत है ताकि अच्छी गुणवत्ता वाला बीज तैयार करके विदेशों से आयात को कम किया जा सके। विश्वविद्यालय के परियोजना



निदेशक डॉ. धर्मवीर यादव ने कहा कि भारत में लगभग 20 प्रतिशत पशुधन है जबकि कुल खेती की केवल 4 प्रतिशत भूमि पर चारे की खेती होने के कारण लगभग 31 प्रतिशत हरा चारा तथा 12 प्रतिशत सूखे चारे की कमी रहती है। प्रदेश में केवल 9 प्रतिशत भूमि पर चारे की खेती की जाती है जोकि पशुधन

की चारा आपूर्ति के लिए बहुत कम है। संगोष्ठी के विशिष्ट अतिथि चारा अनुसंधान संस्थान, इरासी के निदेशक, डॉ. खेम चंद ने कहा कि देश में अब तक विभिन्न चारा फसलों की 200 से अधिक किस्में विकसित की जा चुकी हैं। उन्होंने चराहा भूमि को चारा फसलों के लिए अधिक से अधिक उपयोग

करने तथा निज संस्थानों एवं पशु डेयरियों के साथ मेल-जोल बढ़ाने पर बल दिया। परियोजना समन्वयक, इरासी डॉ. एके राय ने बताया कि इनके संस्थान में अब तक चारा फसलों की 57 किस्में तथा 13 उन्नत उत्पादन तकनीकों को विकसित किया गया है। इसके अतिरिक्त विभिन्न चारा फसलों की

किस्मों पर डाटाबेस भी तैयार किया गया है। इस अवसर पर मुख्य अतिथि ने अखिल भारतीय समन्वित अनुसंधान परियोजना के हरियाणा कृषि विश्वविद्यालय सेंटर को जई को एक, पंजाब कृषि विश्वविद्यालय सेंटर को जई को दो व बाजरा की एक तथा तमिलनाडू कृषि विश्वविद्यालय को जई को एक व लोबिया की दो किस्में विकसित करने के लिए सम्मानित किया जबकि तेलंगाना सेंटर और श्रीनगर सेंटर को उनकी विशिष्ट उपलब्धियों के लिए अवार्ड प्रदान किए। इस मौके पर उन्होंने चारा फसलों पर तीन पुस्तकों तथा उपरोक्त परियोजना की वर्ष 2017-18 की रिपोर्ट को सौंपी का विमोचन भी किया। इस अवसर पर कृषि महाविद्यालय के अधिष्ठाता डॉ. केएस प्रेवाल ने धन्यवाद प्रस्ताव ज्ञापित किया। संगोष्ठी में मेजबान विभाग के अध्यक्ष डॉ. आईएस पंचार, चारा अनुभाग के अध्यक्ष डॉ. पीके वर्मा आदि ने भाग लिया।

चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय, हिसार
लोक संपर्क कार्यालय
समाचार-पत्र का नाम नया सौर
दिनांक 8.9.2018 पृष्ठ सं. 6 कॉलम 11-8

एचएयू चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ, विशेषज्ञों और किसानों के बीच हुआ संवाद

विवि की बीज किस्में ही एचएयू की पहचान हैं

जामरग संवाददाता, हिसार : चौधरी चरण सिंह हरियाणा कृषि विश्वविद्यालय में शुभारंभ की चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी का शुभारंभ हुआ। विश्वविद्यालय के अनुसंधानिकी एवं पौध प्रजनन विभाग के चारा अनुभाग द्वारा भारतीय कृषि अनुसंधान परिषद की अखिल भारतीय समन्वित अनुसंधान परियोजना के तहत चारा फसलों और उनके उपयोग विषय पर आयोजित की गई इस संगोष्ठी का शुभारंभ डॉ. ओपी चौधरी, संयुक्त सचिव, राष्ट्रीय पशुधन मिशन, भारत सरकार ने किया। इस संगोष्ठी में लंच के बाद जब दूसरा सेशन शुरू हुआ तो एक किसान ने कर्पूर सिंह ने कहा कि बीज नहीं मिलने की समस्या अग्रणी है। बुद्धि बौद्धिक के बाद भी हमें किसान में बीज नहीं मिल पाता। इस पर कार्यक्रम की अध्यक्षता कर रहे डॉ. एके सिंह ने विश्वविद्यालय के वैज्ञानिकों से इस समस्या को हल में लाना। मैंच संवर्धन कर रहे वैज्ञानिक ने कहा कि विश्वविद्यालय विभिन्न प्रकार में बीज उपलब्ध करता है।

31 फीसद हरे और 12 फीसद सूखे चारे की कमी
विश्वविद्यालय के परियोजना निदेशक डा. धर्मवीर यादव ने कहा कि भारत में लगभग 20 प्रतिशत पशुधन है जबकि कुल खेती के केवल 4 प्रतिशत भूमि पर चारे की खेती होने के कारण लगभग 31 प्रतिशत हरा चारा तथा 12 प्रतिशत सूखे चारे की कमी रहती है। हरियाणा में केवल 9 प्रतिशत भूमि पर चारे की खेती की जाती है जोकि पशुधन की चारा आपूर्ति के लिए बहुत कम है। संगोष्ठी के विशिष्ट अतिथि चारा अनुसंधान संस्थान इरासी के निदेशक डा. खेम चंद ने कहा कि देश में अब तक विभिन्न चारा फसलों की 200 से अधिक किस्में विकसित की जा चुकी हैं। परियोजना समन्वयक, इरासी के डा. एके राय ने बताया कि इनके संस्थान में अब तक चारा फसलों की 57 किस्में तथा 13 उन्नत उत्पादन तकनीकों को विकसित किया गया है। इसके अतिरिक्त विभिन्न चारा फसलों की

बीजों की उपलब्धता बढ़ाना जरूरी : डा. चौधरी
इसके पहले मुख्य अतिथि डा. चौधरी ने कहा कि चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है और इसके लिए विभिन्न निजी उद्यमों के साथ तालमेल स्थापित किया जाना चाहिए। इसके साथ ही चारा फसलों की खेती को किसानों के स्तर पर भी अधिक बढ़ावा देने की जरूरत है। ताकि अच्छी गुणवत्ता वाला बीज तैयार करके विदेशों से आयात को कम किया जा सके।

समस्या बतानी थी, सभी पुराने किसान करते रहे तरीका
इस राष्ट्रीय संगोष्ठी के दूसरे सेशन में किसानों ने चारे से संबंधित फसलों की समस्याएं उभारे के लिए इसी दिन की कमी को बुझाया गया, जो एचएयू से कहीं से जुड़ें हुए थे। पहले एक किसान कर्पूर सिंह को छोड़कर बाकि किसान समस्या बताने लगे। कर्पूर सिंह के वैज्ञानिकों की सहायता से इनका पता लगाया जा सके।

निजी उद्यमों से स्थापित करें तालमेल
अनुसंधान प्रजनन विभाग के चारा अनुभाग और आईसीएआर की अखिल भारतीय समन्वित अनुसंधान परियोजना के तहत डॉ. ओपी चौधरी ने कहा कि चारा फसलों की खेती को किसानों के स्तर पर भी अधिक बढ़ावा देने की जरूरत है। अच्छी गुणवत्ता वाला बीज तैयार करके विदेशों से आयात को कम किया जा सकता है। भारत में 31 प्रतिशत हरे व 12 प्रतिशत

हकृति में चारा फसलों पर राष्ट्रीय संगोष्ठी का शुभारंभ

चारा फसलों की बीज उपलब्धता बढ़ाना जरूरी

हरियाणा कृषि विश्वविद्यालय, हिसार

चारा फसलों के बीज की उपलब्धता बढ़ाना अत्यंत जरूरी है। इसके लिए निजी उद्यमों के साथ तालमेल स्थापित किया जाना चाहिए। यह बात राष्ट्रीय पशुधन मिशन के संयुक्त सचिव डा. ओपी चौधरी ने हकृति में चारा फसलों पर दो दिवसीय राष्ट्रीय संगोष्ठी के शुभारंभ अवसर पर कहा। यह संगोष्ठी अनुसंधानिकी एवं पौध प्रजनन विभाग के चारा अनुभाग और आईसीएआर की अखिल भारतीय समन्वित अनुसंधान परियोजना के तहत हुई। उन्होंने कहा कि चारा फसलों की खेती को किसानों के स्तर पर भी अधिक बढ़ावा देने की जरूरत है। अच्छी गुणवत्ता वाला बीज तैयार करके विदेशों से आयात को कम किया जा सकता है। भारत में 31 प्रतिशत हरे व 12 प्रतिशत

संस्थान इरासी के निदेशक डॉ. खेमचंद ने कहा कि देश में अब तक विभिन्न चारा फसलों की 200 से अधिक किस्में विकसित की जा चुकी हैं। इनको किया सम्मानित : मुख्य अतिथि राष्ट्रीय पशुधन मिशन के संयुक्त सचिव डा. ओपी चौधरी ने अखिल भारतीय समन्वित अनुसंधान परियोजना के हकृति सेंटर को जई की एक, पंजाब कृषि विश्वविद्यालय सेंटर को जई की दो व बाजरा की एक तथा तमिलनाडू कृषि विश्वविद्यालय को जई को एक व लोबिया की दो किस्में विकसित करने के लिए सम्मानित किया। तेलंगाना सेंटर और श्रीनगर सेंटर को उनकी विशिष्ट उपलब्धियों के लिए अवार्ड प्रदान किए। इस अवसर पर डॉ. केएस प्रेवाल, डॉ. आईएस पंचार, डॉ. पीके वर्मा, चारा अनुभाग के संचालित वैज्ञानिक तथा विश्वविद्यालय के अधिकारी एवं वैज्ञानिक उपस्थित थे। संगोष्ठी में देशभर से चारा अनुसंधान पर कार्य कर रहे 22 केंद्रों के वैज्ञानिकों ने भाग लिया।