आईजीएफआरआई समाचार-पत्र
IGFRI Newsletter
Vol. 28 (1)
January-June, 2022
ISSN 0973-7960

From the Director's desk.....

India's livestock sector offers considerable scope for productivity enhancement since productivity of our cattle and buffalo is very low, which is 20 to 60 % lower than the global average. The low productivity of livestock may be attributed to various reasons but inadequate availability of quality feeds and fodder remains a major area of concern. It is estimated that our country is facing deficit of 11.24% in green fodder, 23.4% in dry fodder including crop reduce and 28.9% in concentrate feed ingredient availability. The use of scientific fodder production, protection, conservation and utilization technologies plays pivotal role in profitable livestock and dairy development. In this direction ICAR- IGFRI has developed improved high yielding cultivars of berseem, identified molecular markers for fertile tetraploid BN hybrid, diagnosed etiology of leaf blight disease on Bajra Napier hybrid, screened plethora of germplasms for forage specific traits of sorghum and mulberry. The institute has also responded to the Hon'ble Prime Minister's call for natural farming. The institute is deeply involved in improving farm mechanisation also to facilitate fodder seed treatment and fertigation. The institute has started using Drone for sowing of grass seeds to rejuvenate degraded lands and pasture lands. These technologies can help in shortage in green and dry fodder which is one of the important factors in low animal productivity in India. To bridge the technological gap between the research organizations and the farmers, vibrant technology dissemination platforms and several awareness programmes are being organised by institute regularly, such as National Awareness Campaign on Balance Use of Fertilizers and Area Specific Agro-forestry, World Water Day-2022 etc. Several training programmes are regularly organised to enable use of potential of generated technologies. Thus ICAR-IGFRI is offering specific services to utilize the potential of available resources for achieving self-sufficiency in fodder production including development of state fodder plan, judicious utilization, extension of latest research findings/technologies, capacity building and skill enhancement of the line department staff, fodder producers and livestock farmers. The institute has so far developed fodder plan for 20 states, has reached to state officials for its implementation.

Salient Research Achievements

Release and Notification of Two New High Yielding Varieties of Berseem

Two new high yielding varieties of Berseem (*Trifolium alexandrinum* L.), JHB-17-2 (Bundel Berseem-5) and JHB-17-1 (Bundel Berseem-6) were developed by ICAR-IGFRI Jhansi. They were evaluated by All India Coordinated Research Projects (Forage Crops& Utilization) during 2017-18 to 2019-20 against three checks *viz.*, Wardan (national check), Bundel Berseem-2 (zonal check for north-west zone) and Bundel Berseem-3 (zonal check for north-east zone). Mean green fodder yield potential of JHB-17-1 and JHB-17-2 were 118 t/ha and 120.0 t/ha respectively which were >15.0 per cent increased green fodder yield over Wardan. Crude protein yield potential of JHB-17-1 and JHB-17-2 were 25.7 and 21.2 q/ha respectively. Based on the superior and stable yield, JHB-17-1 and JHB-17-2 were identified for release by the Varietal Identification Committee of AICRP on Forage Crops and Utilization held on 28-09-2020 and released and notified by the Central Sub-Committee on Crop Standard Notification and Release of Varieties for Agricultural Crops, Government of India vide gazette no SO 8(E) dated December 24, 2021 for commercial cultivation in North-west & north-east zones of India including the states of Uttarakhand, Punjab, Haryana, Rajasthan, West Bengal, Jharkhand, Bihar, Eastern Uttar Pradesh and Orissa. The JHB-17-1 and JHB-17-2 are moderately tolerant to root rot, leaf spot and leaf blight diseases of berseem; and moderately resistant to leaf defoliators and resistant to H. armigera. Both varieties were highly responsive to the application of phosphorus fertilizer.

(Tejveer Singh, A Radhakrishna, SR Kantwa, Reetu, Bhargavi, Sevanayak D)

Curvularia penniseti as Causal Agent of Leaf Blight Disease on Bajra Napier Hybrid: A First Report of Occurance

During, August 2021 Bajra-Napier hybrid line NBN 15-2 was substantially infected with leaf blight disease at central research farm of IGFRI, Jhansi. Symptoms included initial irregular yellow spots on the leaf lamina, later turning to brownish, coalesced together to form large brown patches and gave blighted appearance to the leaf surface (Fig. 1a). The etiology of the pathogen was studied. Through morphological and molecular studies, the causal agent of the disease was identified as *C. penniseti* (Fig. 1b). The pathogenic nature of the *C. penniseti* was confirmed through pathogenicity assays conducted on BN hybrid line NBN 15-2. Literatures indicated that this is the first report of occurrence of *C. penniseti* on BN hybrid in India and probably around the world.

Fig. 1a: Morphlogical symptoms of *Curvularia penniseti* on BN hybrid leaf
1b: Pathogenic nature of *Curvularia penniseti* on BN hybrid leaf

(Maneet Rana, NR Bhardwaj, Rahul Gajghate, Neeraj Kumar, Reetu Verma, RP Saini, Shahid Ahmed, R Kaldate, AK Roy and Amaresh Chandra)

Molecular Markers Identified for Hybridity Determination of Fertile Tetraploid BN Hybrid

ICAR-IGFRI developed world's first fertile tetraploid BN hybrid. In order to determine the hybridity status of novel fertile tetraploid BN hybrid (TBN-20-15), a total of 65 SSRs primers were screened among the parents (Bajra and Napier) along with novel tetraploid BN hybrids. Among them, 9 SSRs (BM 11, BM 6, BNM 20, BNM 23, BNM 15, NM6, BM 7, BM 12 and BM 14) presented the validation of either one parent or both parental bands in novel tetraploid hybrids (Fig. 2). Two markers (BM 11 and BM 12) were found to be parental specific i.e. bajra parental specific, whereas, seven markers (BM 6, BNM 20, BNM 23, BNM 15, NM6, BM 7, and BM 14) exhibited the co-dominance pattern of inheritance for both bajra and napier. These markers validate the hybridity of novel tetraploid BN hybrids and could be used for DNA fingerprinting, varietal identification, and hybridity determination among BN hybrids.

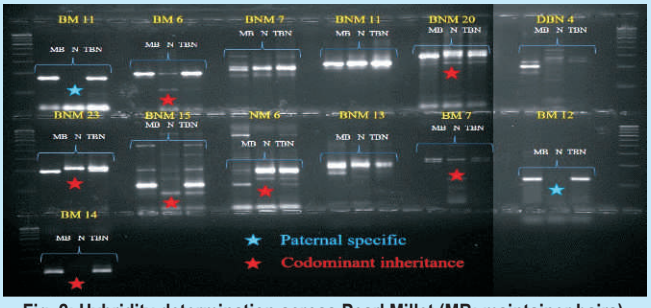


Fig. 2: Hybridity determination across Pearl Millet (MB: maintainer bajra), Napier (N: N27) and novel tetraploid BN hybrid (TBN: TBN-20-15)

(Maneet Rana, Neha Divakar, Gourav Chouhan, Rahul Gajghate, Neeraj Kumar, Shahid Ahmed, AK Roy and Amaresh Chandra)

Fodder Maize- Legume Intercropping and Zinc Fortification

Keeping in view the importance of micronutrient zinc in fodder quality and animal health, effect of soil and foliar application of zinc on maize (SFM-1) and maize-legume mixed stands was also studied subsequently. Sole maize recorded highest green (45.14 and 46.01 t ha^{-1}) and dry (13.45 and 14.21 t ha^{-1}) fodder yield followed by maize + soybean intercropped treatment. Soil (20 kg $ZnSO_4$ ha^{-1}) + foliar ($ZnSO_4$ spray @ 0.5 % twice at 30 and 50 DAS) zinc application significantly increased green fodder yield over control (no zinc). Intercropping increased crude protein contents by 26% in maize + cowpea and 22% in maize + soybean systems over sole maize treatment. The silage made from maize and maize + legume (75:25) indicated a desirable quality (protein, pH and starch content) however, sole legumes resulted in poor quality silage.

(Nazim Hamid Mir, Suheel Ahmad and Sheeraz Saleem Bhat)

Multi-Environment Evaluation of Micronutrient and Protein Enriched Lines of Forage Oat

To improve the nutritionally rich feed and fodder for sustaining livestock nutritional security in India an effort has been made at IGFRI where 150 oat germplasm lines were evaluated (2016-19) for micronutrient and protein content. Among these oat germplasm lines, 26 high promising lines having Zn content >30 ppm and crude protein is more than 8% were selected. These lines were further tested across 2 environments in Palampur, HP (2020 & 2021) for stability traits in multi-environment trials. Quality analysis revealed that the range for crude protein is 8 to 15%. Micronutrient analysis revealed that the range for Zn varied from 30 to 49 ppm, Cu is 3 to 24 ppm, Fe is 50 to 400 ppm and Mn is 25-130 ppm at 50% flowering stage of harvesting in selected lines. Zn requirement for animal is 20-75 ppm whereas the tolerable level of dietary zinc is suggested to be 300 to 1000 ppm diet but the availability of Zn in major fodder crops is 15-30 ppm (Table 1). These high micronutrient and protein enriched oat lines could directly be utilized as feed/fodder for animals.

Table 1: Selected micronutrient and protein enriched lines of forage oat

S.N.	Germplasm name	CP (%)	Zn (ppm)	Cu (ppm)	Fe (ppm)	Mn (ppm)
1	IG02156	11.36	49.3	7	230	98
2	IG02149	15.86	43.0	6	238	76
3	IG02150	14.98	46.4	9	256	78
4	IG02147	13.06	39.2	8	302	117
5	IG02182	12.96	34.2	11	189	96
6	IG02105	8.00	41.4	18	132	64
7	IG02101	13.97	32.5	21	289	61
8	IG03209	12.02	37.6	17	175	34
9	IG03207	10.23	39.2	14	229	111
10	IG02179	14.06	31.4	11	214	39
Check1	JHO-822	8.26	33.4	17	305	84
Check2	JHO-851	9.86	31.2	18	342	102
Check3	JHO-2000-4	8.98	30.0	21	364	86
Check4	Kent	9.42	31.4	17	268	78

(KK Dwivedi, Shahid Ahmed, Indu, Rahul Gajghate, Manoj Chaudhary, Maneet Rana and KK Singh)

Forage Trait Specific Lines Identified in Sorghum for Targeting Future Breeding Goals

The 212 lines of forage sorghum lines have been evaluated for 10 agro-morphological traits to increase productivity, adaptability, and biomass by focusing on forage-specific traits during *Kharif* 2019-20. Out of these, 10 trait-specific lines were identified and evaluated for in 2020-21 and 2021-22 against three controls MP Chari, PC-6, and PC-615. These lines were used to identify and select the lines based on forage traits like plant height, leaf length, leaf width and number of leaves per plants. The genotype IGS-212 outperformed PC-6 for leaf width (Fig. 3). IGS-94 surpassed MP chari for number of leaves per plant. IGS-120 outpaced PC-6 for leaf length. Hence, these promising genotypes shall be used in future forage trait-specific breeding programmes.

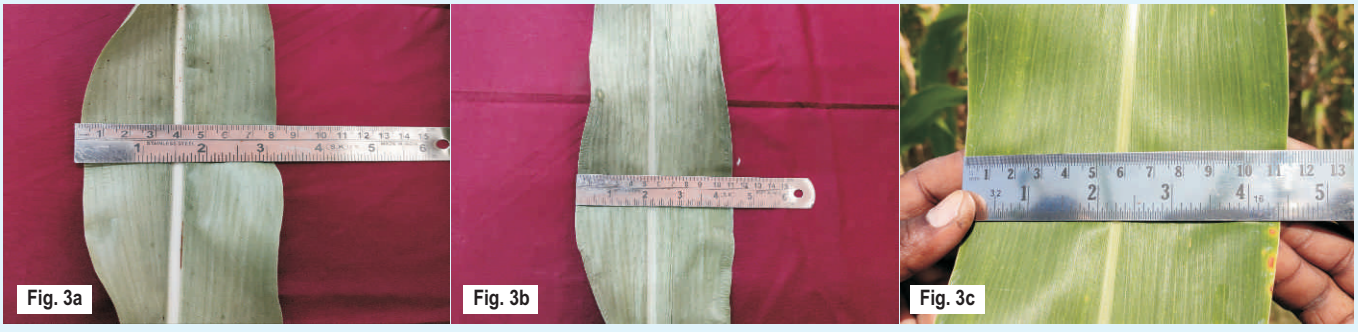


Fig. 3: Image depicting the variation in leaf width (best check for leaf width a. PC-6 and b. & c. genotype IGS-212)

(Indu, N Dikshit, Maneet Rana, Rajesh Kumar Singhal, HS Mahesha, Sultan Singh, HA Bhargavi, MC Keerthi, N Manjunath, DC Joshi and Shahid Ahmed)

Viability Evaluation of Defluffed Pasture Grasses Seed during Storage

An experiment was conducted during the year 2020-2022 on germination of Anjan (*Cenchrus ciliaris* L.) and Sewan (*Lasiuruss cindicus* Henr.) grass from seeds stored in different types of bag for 24 months at IGFRI- RRS, Rajasthan. The germination evaluation was done by between paper (BP) method at 25°C for 10 days in the dark to explore the storability of various bags for defluffed seed. The germination test was done at every six month interval. Defluffing had significantly reduced the volume of seed by 5 to 6 times than fluffed seed. Among the storage bags, the viability of seed stored in aluminium bag and poly bag of >700 gauge was significantly higher than the cloth bag (control) and HDPE bag after 24 months of storage in both the grasses. Hence it can be recommended that to get maximum germination, defluffed seed should be sown within six month after defluffing.

(RP Nagar, HS Meena, SS Meena, Vinod Kumar and RP Saini)

Identification of Stable Multiple Foliar Diseases Resistant Sorghum Germplasm

Among foliar diseases, zonate leaf spot (*Gloeocercospora sorghi*), downy mildew (*Peronosclerospora sorghi*), anthracnose (*Colletotrichum graminicola*) and grey leaf spot (*Cercospora sorghi*) are the most destructive diseases of sorghum. In *Kharif* 2019, 45 lines were selected from 235 lines, which included both resistant and susceptible lines. Later in *Kharif* 2020, out of 45 lines, 15 sorghum lines were selected. Finally in *Kharif* 2021, ten sorghum lines were evaluated against four different diseases at three locations *viz.*, ICAR-IGFRI, Jhansi (zonate leaf spot), PAU, Ludhiana (anthracnose and grey leaf spot), and UAS, Dharwad (downy mildew) under natural epiphytic condition (Table 2). Out of 15 germplasm lines, three genotypes such as IGS-1, IGS-141, and IGS-210 exhibited resistance against all four diseases at three locations. The genotype IGS-6 paraded resistance to three diseases, zonate leaf spot, anthracnose, and grey leaf spot, whereas IGS-205 displayed resistance to two diseases such as zonate leaf spot and downy mildew.

Table 2: Evaluation of 15 sorghum lines against four different diseases at three locations under natural epiphytic condition

Location	Resistant	Moderately Resistant	Susceptible
Jhansi	IGS-1, IGS-141, IGS-6, IGS-210, IGS-208, IGS-205 (06)	IGS-198, IGS-100 (02)	IGS-131, IGS-211, MP chari (02)
Dharwad	IGS-1, IGS-198, IGS-211, IGS-141, IGS-208, IGS-210, IGS-205 (07)	IGS-100, MP chari(01)	IGS-131, IGS-6 (02)
Ludhiana	HR- IGS-1, IGS-141, IGS-6 (03) R- IGS-208 (01)	IGS-131, IGS-198, IGS-211, IGS-100, IGS-205, IGS-210 (06)	MP chari (HS for Grey leaf spot)

(HS Mahesha, MC Keerthi, Indu, S Ahmed, NG Hanumaratti, A Ashlesha, HA Bhargavi, Rajesh Kumar Singhal, Maneet Rana, Sultan Singh, N. Dikshit, DC Joshi and Amaresh Chandra)

Development and Testing of Fodder Seed Treater

A fodder seed treatment machine consisting hopper, chemical container, seed treatment chamber, seed metering mechanism and mainframe was designed (Fig. 4). Two rectangular baffle plates (350×150×2 mm) were incorporated inside and over the periphery of chamber so that seeds could be restrained in their flowing path for proper stirring and mixing. A liquid atomizer plate was incorporated over seed disk for splashing out the chemical liquid coming from chemical container. The two brackets (P206) arrangement was made for installing the different pulley according to required different gear ratio over the seed disc shaft (D1"). V-belt was used for transmitting the power from motor to seed disk in the treatment chamber. The overall dimensions of developed treater were 1040×700×1350 mm. The optimum speed of operation and capacity of developed treater were found 200 rpm and 6 qtl/hr, respectively for Berseem seeds.

Fig. 4: Fodder Seed Treater

(Amit Kumar Patil, CS Sahay and Sanjay Kumar Singh)

Studies on the Association of Seed Coat Color and Seed Quality in Berseem (*Trifolium alexandrium* L.)

Berseem seed of different storage intervals, were taken and categorized into three groups based on color (Yellow, Red, and Dark red seed) using the color chart. New seeds had better germination percentage (GP) during the early period of storage irrespective of the seed color (the year 2020- GP varied from 78%-96%). As the storage period increased, GP of different colors including yellow were found to decrease (Fig. 5a). The mean germination time (MGT) of red and dark red seeds was significantly higher than yellow seeds and MGT increases with increasing storage periods (Fig. 5b), leading to higher electrical conductivity (EC) in red and dark red seeds (Fig. 5c). Based on the study it may be concluded that seed coat color is not an absolute marker for seed viability in the case of the berseem and a detailed biochemical and molecular basis of deterioration study is under way.

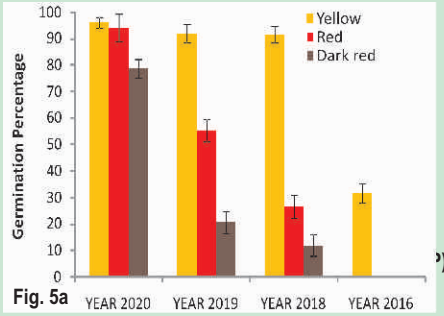


Fig. 5a

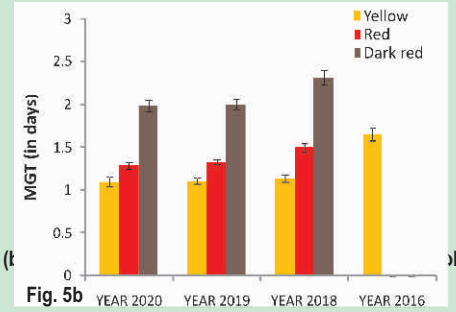


Fig. 5b

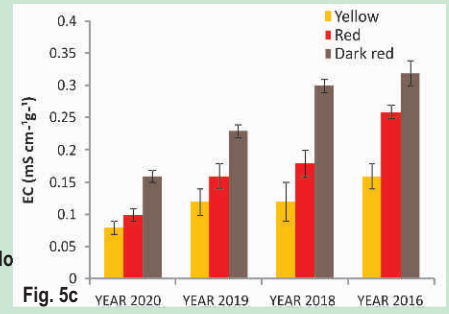


Fig. 5c

(Prabha Singh, Sanjay Kumar, Ravi Prakash Saini, Tejveer Singh, Maharishi Tomar, HS Mahesha, VK Wasnik and VK Yadav)

Mulberry for Fodder Security in Semi Arid India

Mulberry (*Morus* species; Family: Moraceace) is one promising fodder tree for ensuring fodder security in semi-arid zone. Leaves of mulberry are rich in crude protein, macro and micro-nutrients with high palatability as well as dry matter digestibility. Sixty six germplasm of Morus species were evaluated for initial nursery performance based on their survival, growth traits and leaf yield at IGFRI, Jhansi. Based on the nursery performance of one year old germplasm, MHP-15 germplasm performed better for height (190.90 cm), diameter of the sprout (12.76 mm) and number of leaves (98.70) as well as fresh leaf yield (1257.44 g) per plant. Other promising germplasm included MHP-7, MHP-8, Kanva-2 and China white.

(Kamini, Sheeraz Saleem Bhat, Maneet Rana, Anup Kumar, AK Handa and RP Nagar)

Analysis of Fodder Status in Karnataka

A study was conducted to know the fodder scenario at various districts of Karnataka. Secondary data of land use classification, crop production (2015 to 2019) and livestock census was used to derive dry matter availability and requirement for each district. Karnataka has only 69 % dry matter availability. Out of 30 districts, 12 districts belonged to severely deficient category. Crop residues contributed highest (69.01%) to the fodder. The contribution of coarse straw (Sorghum, Bajra and maize) decreased and the contribution of fine straw (Rice, wheat, Ragi and small millets) increased in some the districts. The villages experienced fodder shortage during the period of November to March (Green) and March to May (dry).This indicated that at micro-level, fodder situation was further discouraging. Mapping of districts based on DM availability was done to facilitate planning of fodder transportation across districts (Fig. 6).

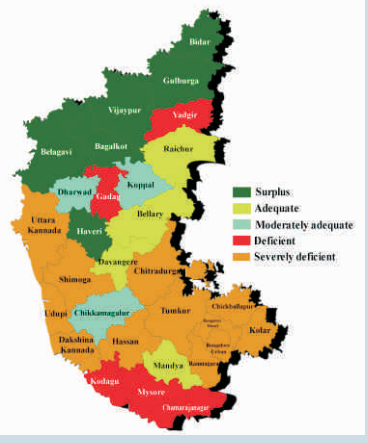


Fig. 6: District wise estimated DM availability

(C Lakshmi Devi and Nagaratna Biradar)

New Initiatives

Drip fertigation in forages- A novel technology for efficient use of nutrient and water with quality fodder production

The present day agriculture is constrained with water scarcity. Efficient use of water in conjunction with balanced application of nutrients is an emerging area of R&D and it's further up scaling. The drip fertigation has shown remarkable improvement in water use efficiency, crop productivity and net income in variety of crops. Forage production heavily depends on supply of water and nutrients. Among the cultivated perennial grasses, Bajra Napier hybrid grass has been acclaimed as the highest forage yielder. In forage crops, such information is scanty. Hence a project on evaluation of fertigation in Bajra Napier hybrid has been initiated at ICAR-IGFRI Jhansi (Fig. 7). The project has been planned for 3 years. The objective of the study is to enhance the productivity, profitability, and use efficiency of critical inputs. Further it is intended to develop a semi-automatic drip fertigation system in forages in near future.

Fig. 7: Drip fertigation unit and drip fertigated BN hybrid at Institute's Research Farm - A new initiative

(AK Dixit, Mukesh Choudhary and CS Sahay)

Application of Drone Technology for Grassland Development

Limitations of Grassland development technologies have been the enormity of grassland area, poor accessibility to hilly and degraded areas, moisture availability for a shorter span of time and labour availability for sowing grasses. To overcome, these issues Drone technology was attempted for aerial seed sowing of grasses at IGFRI, Jhansi. The application of Drone for degraded land restoration and grassland development was initiated at the fields of Grassland and Silvipasture Management Division, ICAR-IGFRI Jhansi (Fig. 8). Three grasses *C. ciliaris, M. maximus* and *P. pedicelletum* were selected based on climatic conditions, soil, and survivability. For spreading through a hexacopter drone, seed pellets were prepared using nutrient, binding agent, and grass seeds. These pellets were spread using the drone for land restoration/ grassland development. The germination of grass seed is adjudged as good. This work of ICAR-IGFRI would lead to addressing the target of restoration of degraded land as well as the shortage of fodder for livestock.

Fig. 8: Drone Technology for Grassland Development

(Amit K Singh, Avijit Ghosh, JP Singh, AK Roy, VK Yadav, RV Kumar and Amaresh Chandra)

Fodder Inflation Driving Dairy Sector into Crisis - A Policy Analysis

Despite the presence of strong cooperative network in the Indian dairy sector, inflation has hit the sector like never before. Wholesale milk prices have annually increased above 5% in last one decade in India, and it is expected to shoot up in coming months. Nonetheless, various factors come into play in mismatching the demand –supply of milk, the recent increase in fodder costs is driving the sector into a crisis. Except for the year 2018-19, the whole sale price index of fodder is on increasing trend from last decade (Fig. 9). Fodder inflation has seen a sharp hike in the last few months. Farmers who are solely dependent on the market for fodder have incurred heavy losses. Farmers across the states are switching from crossbred cattle to indigenous breeds for minimizing feeding expenditure. If this trend continues, it will hit hard the national milk production in big way in the coming years. Therefore, urgent policy attention towards organized fodder farming in needed. Fodder crop should get a central place within the various agro-ecosystems and be treated at par with the facilities provided to agricultural crops like crop insurance, minimum support price (with the concept of fodder bank) and similar other benefits. Fodder growers need to be incentivized and be provided compensation in the event of damage of fodder crops from natural calamities.

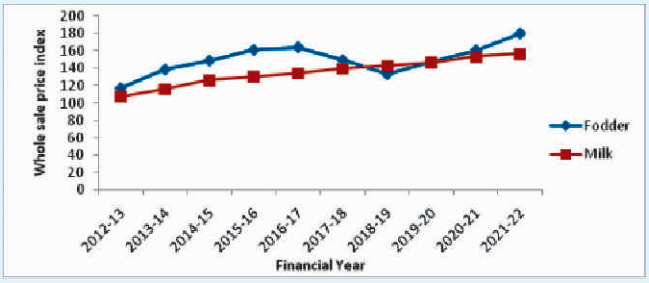


Fig. 9: WPI- inflation in milk and fodder

(B B Choudhary, Purushottam Sharma and Amaresh Chandra)

Technology and Machinery Demonstration Mela-2022

ICAR-IGFRI organised "Technology and Machinery Demonstration Mela" on March 16, 2022: Chief Guest of the occasion was Dr KK Singh, Member ASRB, New Delhi

National Group Meet (*Kharif*-2022) of AICRP on FC&U

National Group Meeting (*Kharif*-2022) of All India Coordinated Research Project on Forage Crops and Utilization, Jhansi organized on June 13-14, 2022 at SKUAST-K, Srinagar in hybrid mode. The inaugural session was chaired by Prof. (Dr.) Nazir Ahmed Ganai, Hon'ble Vice Chancellor, SKUAST-K, Srinagar. Dr. T.R. Sharma, DDG (CS), ICAR, graced the occasion as chief guest in virtual mode. Dr. R.K. Singh, ADG (CC&FFC), ICAR and Dr. Amaresh Chandra, Director ICAR-IGFRI Jhansi were guests of honour. During the National Group Meeting one forage production technology *i.e.* Air evacuation method of silage production in poly bags and one forage crop protection technology *i.e.* Non chemical management of Helminthosporium leaf blight in fodder maize were identified for release. In the Varietal Identification Committee meeting, five varieties *viz.*, Forage Pearl Millet entry JPM-18-7, Forage

Pearl Millet entry Dev-1 (Milkon), Forage Pearl Millet entry BAIF Bajra-7, Forage Pearl Millet entry 16ADV0055 and Dinanath Grass entry JHD 19-4 were identified for release.

Meetings

- Under the Chairmanship of Prof. Panjab Singh, Former Secretary, DARE, GOI and Ex-DG, ICAR, New Delhi; QRT meeting and visit of CR farm & farmers field, ICAR-IGFRI Jhansi on January 1-2, 2022 & June 29-30, 2022 and ICAR-IGFRI, SRRS, Dharwad on June 1-2, 2022.

- Under the Chairmanship of Dr. PL Gautam, Former, Chairperson, PPVFRA, New Delhi; RAC meeting in Hybrid mode at ICAR-IGFRI Jhansi on April 28, 2022.

- PMC visit for *Rabi* 2021-22 on March 8, 2022. Dr. Anil Kumar, Director Education, RLBCAU was the External Expert.

Visits

- MOS Agriculture, GOI, Hon'ble Shri Kailash Choudhary Ji visited ICAR-IGFRI Exhibition in ICAR-CSWRI Golgen Jubilee Foundation Day Mela at Avikanagar on January 4, 2022

- Dr. T.R. Sharma, DDG (CS), ICAR New Delhi and Dr. Amaresh Chandra, Director, ICAR-IGFRI, Jhansi visited ICAR-IGFRI, RRS, Palampur on May 9, 2022.

- Dr. R.K. Singh, ADG (FFC), ICAR New Delhi and Dr. Amaresh Chandra, Director, ICAR-IGFRI visited ICAR-IGFRI, RRS, Srinagar on June 14, 2022

- Dr. Sanjay Singh, DG, UPCAR Lucknow visited ICAR-IGFRI, Jhansi and interacted with scientists of the Institute on January 13/14, 2022

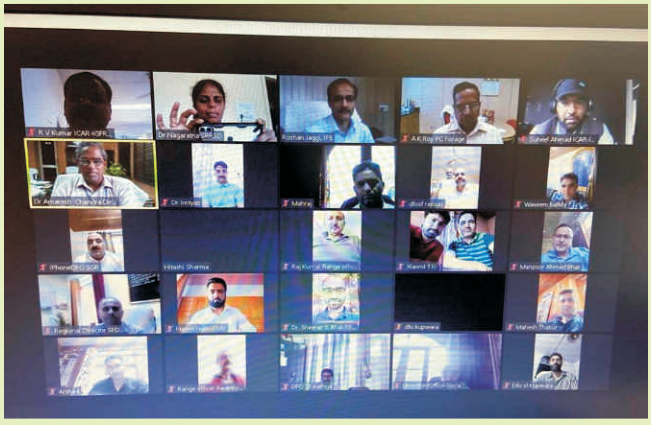
- Dr. Mangla Rai, Former Secretary, DARE, Govt. of India and Ex-DG, ICAR, New Delhi visited ICAR-IGFRI, Jhansi and interacted with staff of the Institute on March 4, 2022

Conference/Workshop

- ICAR-IGFRI, Jhansi organised "Scheduled Caste Farmer's Beneficiary Conference" on May 28, 2022: Shri Anurag Sharma Ji, Hon'ble MP, Jhansi-Lalitpur Costituency was Chief Guest of the occasion

- ICAR-IGFRI organised Hindi Workshop on March 7, 2022 and May 21, 2022

- The ICAR-IGFRI, RRS, Srinagar in collaboration with the Social Forestry Department, Govt. of J&K, organized the Virtual Workshop on "Fodder Resource Development in UT of J&K" on May 19, 2022

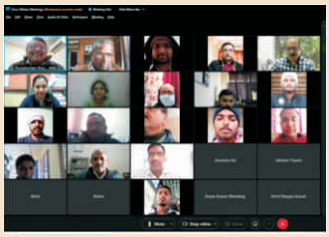


Kisan Gosthi on "Biofortified crops and Millets"

Kisan Gosthi on "Biofortified Crops and Millets" was organized on April 23, 2022 under SC Subplan.

Trainings organized

- Collaborative Online Training Programme of ICAR-IGFRI, Jhansi & MANAGE, Hyderabad on "Agripreneurship development on value added fodder products" for Extension officials of state/central animal husbandry departments, veterinarians, faculty of SAUs/KVKs/ICAR institutes during January 17-20, 2022.



- ATMA, Begusarai district of Bihar sponsored Progressive farmers training on "Fodder production, conservation and utilization" during March 7-11, 2022 at Jhansi.

- ICAR-IGFRI, RRS, Avikanadar conducted training programme for Tribal Farmers on "Rabi mousum ki chara faslon me beej utpadan taknik" at Hapavas Gram Panchyat, Distt- Dousa Rajasthan on March 8, 2022.

- Progressive farmers training on "improved technologies of fodder production, conservation and utilization" during March 21-25, 2022.

- Interinstitutional farmers training on "Organic farming and allied services" under Farmers First project organized during March 23-24, 2022 at Jhansi.

- Training program on 'Quality seed production in forage crops' organised by SRRS, ICAR-IGFRI, Dharwad during March 24-26, 2022.

- Farmers training programme on "Natural and organic farming" organised at ICAR-IGFRI Jhansi during April 24-25, 2022.

- Training of TSP farmers of Dhule and Nandurbar districts of Maharashtra on "Cultivation of perennial sorghum variety CoFS-29, fodder utilization and animal health" at SRRS, ICAR-IGFRI, Dharwad during January 4-7, 2022.

Awareness programmes

- Awareness cum training programmes organized by ICAR-IGFRI, RRS Srinagar for Tribal Farmers under AICRP-Goat Improvement in district Rajouri, UT of J&K.

Programme at Mankot, Rajouri on February 19, 2022

Programme at Dhanwankot, Rajouri on February 20, 2022

Programme at Tandwal village, Rajouri on February 20, 2022

- Awareness cum exposure visit of students and farmers and interaction on Nutri food for better health was organised by National Academy of Agricultural Sciences, Lucknow Chapter at ICAR-IGFRI Jhansi on March 25, 2022.

- National Awareness Campaign on "Balanced Use of Fertilizers and Area Specific Agroforestry" organised at ICAR-IGFRI, Jhansi on June 21, 2022.

- Awareness camp on "Fodder production and animal health" at village Drini, District Kangra HP in collaboration with College of Veterinary Sciences, CSKHPKV, Palampur organised on June 14, 2022.

- Awareness programmes on "Livestock & Fodder Technologies and Enhancing Livestock Productivity" were organised on March 20-21, 2022 by ICAR-IGFRI, RRS, Srinagar under SCSP at Samba and R S Pora KVKs of Jammu region.

Promotion of staff

Scientist to Senior Scientist, Research Level-12 (7th CPC)	**Technical staff from T-7/8 to T-9 (ACTO to CTO)**
Dr. Tejveer Singh, Scientist (Genetics & Plant Breeding)	Smt. Sandhya Bhargav (Retd.)
Dr. Debyendu Dev, Scientist (Agricultural Statistics)	Sh. L.N. Singh (Retd.)
Dr. Mukesh Chaudhary, Scientist (Agronomy)	**Technical staff from T-6 to T-7/8 (STO to ACTO)**
Dr. Prabhu Govindasamy, Scientist (Agronomy)	Sh. Shyam Murari Singh
Dr. Vinod Kumar Wasnik, Scientist (Agronomy)	Sh. N.K. Tripathi
Dr. Manjunath, N., Scientist (Plant Pathology)	Sh. Rajesh Kumar Singh
Dr. Suheel Ahmad Dand, Scientist (Agro-forestry)	Sh. U.P. Singh
Dr. Sheeraz Saleem Bhat, Scientist (Agro-forestry)	Sh. Ami Chand
Scientist to Scientist, Research Level-12 (7th CPC)	Sh. Raj Kapoor Singh
Sh. A. Radhakrishna, Scientist (Agril. Biotechnology)	Sh. Kapil Kumar
Scientist to Scientist, Research Level-11 (7th CPC)	Sh. Neeraj Kumar Dubey
Dr. Reetu, Scientist (Plant Biochemistry)	Dr. Harish Chand Pandey
Dr. Kautkar Sheshrao S., Scientist (ASPE)	**Technical staff from T-5 to T-6 (TO to STO)**
Dr. Amit Kumar Singh, Scientist (Agril. Meteorology)	Sh. Dheeraj Kumar Dhingra
Dr. Rahul Gajghate, Scientist (Genetics & Plant Breeding)	**Technical staff from T-4 to T-5 (STA to TO)**
Dr. Nitish Rattan Bhardwaj, Scientist (Plant Pathology)	Smt. Anita Srivastava
Dr. Kamini, Scientist (Agro-forestry)	Sh. Gopal Lal Meena
Dr. Hanamant M. Halli, Scientist (Agronomy)	**Administrative staff from Assistant to AAO**
Dr. Deepak Upadhyay, Scientist (LPM)	Sh. Vijay Kumar Paliwal
Sh. Nazim Hamid Mir, Scientist (Agronomy)	Sh. Y.P.S. Tomer
Dr. Maneet Rana, Scientist (Agril. Biotechnology)	**Administrative staff from LDC to UDC**
	Sh. Uma Shankar

Retirements

- Sh. DK Singh, ACTO retired on 31.01.2022
- Sh. OP Yadav, Sr. TO retired on 31.01.2022
- Sh. Matadin, SSS retired on 31.01.2022
- Sh. Ramesh, SSS retired on 28.02.2022
- Sh. Vishwanath Pathak, Sr. Technician retired on 30.04.2022
- Sh. Parsaram, SSS retired on 31.05.2022
- Smt. Manfuli Devi, SSS retired on 30.06.2022

Transfer/New joining

- Dr. Rahul Gajghate, Scientist (G&PB) transferred to ICAR-IARI, RS, Indore on 31/03/2022
- Dr. Neeraj Kumar, Scientist (G&PB) transferred to ICAR-IARI, New Delhi on 31/03/2022
- Sh. A Radhakrishna, Scientist (Biotechnology) transferred to ICAR-DOGR, Pune on 23/04/2022
- Dr. Surinder Paul, Scientist (Plant Biotechnology) joined on 23/05/2022
- Sh. Limbalkar Omkar Maharudra, T-6 (F&F) joined on 22/06/2022
- Sh. Uttam Singh Verma, T-3 (F&F) joined on 22/06/2022

Celebrations

ICAR-IGFRI celebrated 73rd Republic Day (January 26, 2022) by hoisting the National flag by the Director followed by addressing the staff of the Institute.

ICAR-IGFRI, Jhansi and RRS, ICAR-IGFRI, Avikanagar celebrated International Women's Day (March 8, 2022)

ICAR-IGFRI celebrated World Water Day-2022 (March 22, 2022)

ICAR-IGFRI celebrated International Yoga Day (June 21, 2022)

Forthcoming Events

61st Foundation Day, ICAR-IGFRI, Jhansi

RMSI-IGFRI collaborative National Symposium during November 1-3, 2022 at ICAR-IGFRI, Jhansi

Published by :
Director
ICAR-Indian Grassland and Fodder Research Institute
Jhansi-284003 (Uttar Pradesh)

Telephone : 0510-2730666
Fax : 05102730833
E-mail : director.igfri@icar.gov.in
Published at : https://igfri.icar.gov.in

हर कदम, हर डगर किसानों का हमसफर भारतीय कृषि अनुसंधान परिषद
Agrisearch with a human touch

Swachh Bharat Abhiyan
स्वच्छ भारत
एक कदम स्वच्छता की ओर

Editorial Committee:
AK Dixit
Sultan Singh
Rajesh Kumar Singhal
Avijit Ghosh
KP Rao
Pawan Kumar
Shailendra Sinha
Photographs:
Ashok Kumar Singh

Printed at : Classic Enterprises, Jhansi. 7007122381, 9415113108