भा.च.चा.अ.सं.
IGFRI

IGFRI Newsletter

भाकृअनुप
ICAR

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XXI International Grassland and VIII International Rangeland Congress

XXI International Grassland Congress and VIII International Rangeland Congress was jointly organized at the capital of Inner Mongolia (Hohhot), PR China from 29th June, 2008. It was the first occasion when International Grassland Congress (IGC) and International Rangeland Congress (IRC) met together to allow an international exchange and discussion on the multi-function of grasslands and rangelands in a changing world. Dr A Chandra and Dr. (Ms) N B Biradar, Senior scientists from IGFRI, Jhansi participated in the congress as congress sponsored delegates. They presented posters in the congress and had interactions with scientists gathered from different parts of the world. IGFRI presence was highlighted during the congress through its daily newsletter. Seven research articles; "Grasslands - a resource for sustenance in south India", by Trivedi, B K *et al.*; "Productivity of designed silvopastoral systems in five agro-ecological regions of India", by Roy, M M *et al.*; "Role of soil seed bank on persistency of pastures in tropical grasslands of Kangayam", by Natarajan, S *et al.*; "Private ownership of grazing land in tropical semi-arid tract spurs community action for sustainable management of grassland", by Anil Kumar *et al.*; "Diversity and dynamics of soil mesofauna associated with natural grasslands in central India", by Sharmila Roy and Ruquaeya Bano; "Marketing of seeds of *Stylosanthes* - a tropical legume in India", by Nagaratna Biradar *et al.*; and "Identification, evaluation and molecular characterization of *Stylosanthes sebrana* - a potential and nutritious range legume having wider applicability in India", by Chandra, A *et al.*, were submitted from IGFRI to the congress.

The scientific programme of congress focused on three major themes: grasslands/rangelands resources & ecology; grasslands/rangelands production systems; and grasslands/rangelands people and policies. Besides, it has been a significant milestone in the history of IGC and IRC, and in research and development of grasslands and rangelands where more than 1000 overseas scientists from more than 70 countries participated in the programme, besides the Chinese participants. The Chinese Grassland Society and the Inner Mongolian Government overwhelmingly welcomed the scientists from different parts of the world and provided excellent opportunities in terms of scientific exchanges, tours to different parts of the country largely covering grasslands and rangelands.

Message from Participants

Innovativeness across the posters – Views from India: In session B – 4, theme, Developing improved plants, Amaresh Chandra, an Indian delegate, presented his poster on : Stylo improvement and utilization for better livestock production. He stated that many posters in the session were thought – provoking and inquisitive. They generated a lot of interactions among the researchers, development agents, policy makers and farmers. Such efforts are well appreciated and we applaud the efforts made by IGC/IRC 2008. The efforts of some of the delegates who placed print copies of their posters and papers below their respective poster really helped those who wished to read them thoroughly.

Dr. Amresh Chandra

Dr (Ms) NB Biradar

Forage based feeding system for efficient livestock production

The livelihood of a large segment of people in India is intricately woven with the livestock sector. The livestock sector in India accounts for 24.72 % of the agricultural GDP and about 4.36 % of the total GDP. This is derived from a livestock population of about 185 million cattle, 98 million buffaloes, 61 million sheep, 124 million goats, 13 million pigs and 458 million poultry including 11 million other livestock. India ranks first in milk production (98 m tons), third in egg production and eighth in the world's meat production (4.8 m tons). The milk production in the world is expected to increase from 568 m tons to 700 m tons between 2000 and 2020; and the meat production from 233m tons to 300 m tons.With increasing income and changing dietary habits, the demand for products from animal origin is increasing. To keep pace with the demand, the livestock sector has to gear itself by increasing productivity through cost effective measures. To achieve the projected increase in milk and meat, there is need to promote feeding systems which is primarily forage based. This would result in reducing the total food grain requirement of the country.

Of the total world cereal consumption as animal feed (660 m tons) in 1997, developed countries used about 425 m tons (64%) which is expected to increase to the tune of 511 m tons by 2020. Livestock production in developing countries including India is mostly based on grazing and crop residues (mixed farming system) with little supplementation of agro-industrial by-products. Poultry are the major consumer of cereals like maize, barley, jowar, bajra etc. In India, poultry enterprises consumes around 50 % of maize, 30% of barley, sorghum and other cereals produced. A part of this cereal grain could be saved for human consumption by adopting alternative approaches. Studies have shown that use of *Stylosanthes* leaf meal in poultry feed can be economical besides increasing the acceptability of eggs because of more yellowness of the yolk. Other non ruminants species can also be given higher levels of green forage in their ration. Pigs can be fed with up to 20% green fodder like succulent jowar, guinea grass, hybrid napier, etc. Another 20% of their requirement can also be met through tuber crops like sweet potato, turnip, sugar beet etc. A recent study by ACIAR has concluded that when pigs are fed with *Stylosanthes guianensis*, the average daily gain increased from 100g to 250g for virtually no extra cost, under village conditions in South-East Asia and the pigs could be sold in six rather than 10 months.

The cost of feeding accounts for about 60-70 % of the total cost of animal production in ruminants like cattle, buffalo sheep and goats. Livestock production based on green fodder is not only economical but also good for the general health and well being of the animals, which in turn adds to the income of the livestock owners on a sustainable basis. Ruminants require 7-10 kg feed to produce one kg of meat. Although, poultry are very efficient feed converters, requiring 2 - 2.5 kg of feed per kg meat and even less per kg for egg production and pigs require 2.5-4 kg dry matter per kg pig meat, they cannot utilize the crop residues and green forage in large quantities. Forages like oats, sorghum, maize, napier grass, lucerne and berseem are the cheaper source of digestible crude protein and total digestible nutrients than concentrate. The cost of DCP and TDN from oats, berseem and lucerne is around Rs. 20 per kg and from sorghum and maize is around Rs. 25 per kg while from concentrate sources it varies from Rs. 40-59 per kg.

The experiments with all forage diets have shown that 400-500 g average daily gain in heifers and milk yield of about 8-10 liters in lactating buffaloes and cows can be achieved. The well-managed green fodders having a dry matter digestibility 53% are able to provide all the required nutrients (1.0 kg DCP, 7.9 kg TDN, 51 g calcium and 37 g phosphorus) for a cow/buffalo of 400-500 kg body weight, yielding 8-10 liters of milk. The results suggest that the first 8 liters of milk in buffaloes and 10 liters of milk in cows can be produced exclusively on high quality forage diet without any concentrate supplementation. For additional milk production required energy may be provided from energy rich concentrate feeds.

There is need to change the production practices to take advantage of natural process, by-passing the energy intensive grain-fed operations that have dominated in the developed countries livestock production systems for last several decades. The food products of green fodder/ grass-fed ruminants (mutton, lamb, beef, milk) are nutritionally superior and contain much more omega–3 fatty acids and conjugated lineolic acid (CLA) than those products obtained from grain-fed animals. In fact, grass/ forage fed animals can produce 300-500% more omega–3 fatty acids and CLA than cows fed with the typical diet of 50% hay and silage with 50% grain. On the other hand, green fodder and crop residue combination based feeding system is able to reduce the methane emission to the extent of 8-30% depending upon the type of fodder used and its proportion in the diet.

There is great potential to meet the feed & fodder shortage through 19.34 million hectares under permanent pasture and grazing lands, 108.42 million hectares under degraded forest and 18.13 million hectares under agricultural land inside notified forest area. Even if 50% of this land is brought under grassland and silvipastoral system, there is potential to produce 200 million tons of dry matter to meet shortage of fodder, being faced now.

In the country like India, adoption of forage based feeding regimens for livestock production would ensure lesser methane emission from enteric fermentation as well as nutritionally superior animal products for human consumption besides ensuring a better environment to live in. Moreover, the cost of production of milk and meat will come down providing better income to the millions of farmers.

Kasingh

(K.A. Singh)
Director

In the News

Space crops : The breeding strategy for future

Opening new frontiers in breeding crops, scientists from the Space-breeding center of the Chinese Academy of Agricultural Sciences sent 215 kg of seeds of vegetables, fruits, grains and cotton on board the recoverable satellite Shijian-8 in 2006 for a 15 day space odyssey. The experiment was aimed at studying the effect of cosmic radiation, micro gravity and magnetic fields on germination and sprouting of plants. During its flight, the satellite sent back high-definition digital images of sprouting vegetables. The seeds which were planted after their journey into space have produced pumpkins of over 90 kg; 72 kg winter melons, 23 cm chilli, 900g tomato and 60 cm cucumbers!

Scientists have yet to offer a definitive explanation of why space causes the seeds to mutate. But they believe that cosmic radiation, micro gravity and magnetic fields may have a role to play. After space travel the genetic sequence may change or a gene may disappear. While the world debates over the effect of GM crops, the Chinese have opened yet a new frontier in breeding crops. The Chinese scientists claim that space fruits and vegetables are better than the original with Vit. C content higher by 3 times in some vegetables. The yield of rice have also reported to be 25 percent higher. Research also show that certain space breeds use proportionately less water than their traditional predecessors so they could be perfect for arid areas.

(source: www.sundaymirror.co.uk)

Space melon

Nutritional mapping of crop residue: Macro and micro minerals

In India , livestock production system is mainly based on crop residues of wheat and rice with meager amount of concentrate supplements. On such feeds and fodders mineral deficiency/ imbalances are generally encountered, which limits the production performance of livestock. Therefore, for devising an area specific management strategies for different regions of the country, mapping of macro and micro elements in major crop were undertaken. Macro (Ca, P and Mg) and micro (Cu, Zn and Fe) mineral content of the wheat straw samples collected from eight major wheat producing states (Bihar, Haryana, Punjab, Madhya Pradesh, Rajsthan, Uttar Pradesh, Uttarakhand and West Bengal) covering 22 districts, were analyzed to ascertain the adequacy of these minerals in meeting the dietary needs of livestock. Calcium content was sufficient (0.59 to 0.82%) to meet the daily requirements of dairy animals. However, phosphorus (0.04-0.10%) was deficient as compared to its required level (0.22%) in invariably all the states. Similarly, magnesium content was also low (0.14-0.25%) in major wheat producing areas except Madhya Pradesh and Rajasthan. Copper (4.40 to 9.79 ppm) and Zinc (12.20 to 18.36 ppm) contents of wheat straw varied greatly from region to region. Copper was below the required level in all the samples except from Bihar (9.79 ppm), whereas, zinc was invariably deficient in all the states. Iron concentration in wheat straw samples was much higher (117-358 ppm) than the required level (50-100 ppm). From the results, it is evident that in wheat straw only Ca content was adequate whereas, P, Mg, Cu and Zn were deficient thus necessitating their dietary supplementation. Higher levels of Fe also require's suitable counteractive mineral supplementation strategies.

(KK Singh, MM Das and AK Misra)

Production of quality Aonla planting material through 'bench grafting'

The Aonla (*Emblica officinalis* Gaertn) is also known as *Amrit phal* for its medicinal and therapeutic properties and *Patthar phal* because of its hardiness in terms of soil and climatic adaptibility. Presently, aonla is cultivated on 50000 ha in the country with more than1.75 lakh tones of fruit production. The area under this crop is increasing further due to the development of high-yielding improved cultivars, hardiness and high economic return. The most common method of its propagation is through patch budding on year old root-stocks. A common problem observed with such plants is that there is a long tap root development and hence field transplants experience heavy mortality. Besides, it requires two years for the preparation of saleable plants. In order to solve these problems efforts were made to raise quality plant materials of improved cultivars *viz.*, N.A-7, Krishna, Kanchan, N.A-6 and Chakaiya through *Bench Grafting* methods. The seed was sown in bed or polythene bag in the month of June and bench grafting was done in the month of February on 8-9 month old rootstock, having pencil thickness. The root stocks uprooted and the extra and twisted roots are pruned. The stocks were cut at 3" height from the base and an incision of 4-5 cm on its top was made by a sharp knife. The scion from desired cultivars was prepared having length of 10-12 cm with pencil thickness having 3-5 buds. The basal end of scion was cut into "V" shaped wedge, matching the opening in the rootstock. After placing the scion in the stock, the joint area of stock and scion was properly tied with polythene tape. These grafts may be bundled in moist gunny bags or moss and can be stored for up to 5-6 days before planting in polybag. Under the nursery condition, the grafts were planted in polythene bags having soil: FYM: leaf mould in the ratio of 1:1:1. The grafts are then covered with 20 x 3 cm polycap and open end of cap is buried in soil. Soil of polythene bag was watered to saturation. Complete grafts with filled polythene bags were placed in nursery under shade. The transpired water accumulating as vapour in polythene tube provides a sort of mist microclimate to the grafts and scion sprouts in 15-25 days. After about 20 days, upper end of polythene tube was cut in order to allow straight growth of sprout and after 35 days it is finally removed. In about one year from sowing (June to next year July), 90-95 per cent plants propogated with this method became ready for sale. At this institute plant prepared by this method gave 100 per cent establishment. This technique offers production of better quality of saleable sapling with a favourable root system for field establishment in one year compared to conventional patch budding method requiring at least two years of nursery growth. Thus, this technique is proven to be very very useful and profitable for nursery owners and farmers interested in developing orchard of improved cultivars of Aonla.

(Sunil Kumar and AK Shukla)

Fly Ash – A cheap amendment for conserving water in vertisols

Fly ash, a waste product generated by coal based thermal power plants has a vast potential for use in agriculture, forestry and wasteland reclamation. In India, nearly 73% of the total installed power generation capacity is thermal, of which 90% is coal-based. Owing to its physico-chemical characteristics, application of fly ash into soil has been found to increase the water holding capacity, hydraulic conductivity and porosity; and decrease in bulk density, modulus of rupture and surface encrustation. Providing a niche for enhancing the infiltration and reducing runoff in Vertisols. Bundelkhand region is characterized by erratic and low rainfall with highly heterogeneous soils having poor physico-chemical properties. This results in low soil moisture reserve for crop growth and development. In an experiment at IGFRI, coarse textured fly ash from Parichha Thermal Power Plant (PTPP) was applied to medium black soil where moisture conservation was limited by poor infiltration and hydraulic conductivity. Application of fly ash resulted in significant increase in the water content at field capacity and permanent wilting point of the soil (Table). It also improved soil aeration and moisture movement by decreasing bulk density and increase in porosity after three years of application. Thus it provided a better environment for crop growth for a longer period during dry spell thriving on conserved water. The farmers of Bundelkhand region can use this technology easily as fly ash is available free of cost from PTPP. They can reap better harvest from fields for at least five years once the fly ash is applied to the field.

Effect of fly ash on bulk density and water holding capacity of medium black soil after 3 years of application

Treatments	Bulk Density (g/cc)	Water Holding Capacity(%)	
		15 bar pressure	1/3rd bar
No fly ash + sole inorganic nutrients (control)	1.282	5.344	16.859
50 t ha^{-1} fly ash + sole inorganic nutrients	1.230**	5.572*	17.643**
100 t ha^{-1} fly ash + sole inorganic nutrients	1.220**	5.745	18.588**
C.D.	0.032	0.151	0.753

(* = significant at 5% level, ** = significant at 1% level)

(SK Das and Arvind K Rai)

Institute Research Council

The Institute IRC for the year 2008-09 was held from 31st May to 7th June, 2008 under the Chairmanship of Dr. K A Singh, Director. Sh. K C Pandey, Secretary IRC briefed the house on divisional level pre-IRC exercises. During the IRC, fourteen new research proposals were finalized. The Chairman, emphasized the need to embrace modern technology in the changing agricultural scenario and take up the new projects to solve the problems of farmers. He also emphasized that the recommendation made by QRT, RAC & PME should be adequately addressed. He advised the scientists to use the existing resources judiciously and asked all the divisions to join hands with the extension scientists in ToT activities.

Research Advisory Committee

The Research Advisory Committee for the Indian Grassland & Fodder Research Institute, Jhansi and National Research Centre for Agro-forestry, Jhansi is reconstituted for a period of three years *w.e.f.* 8.5.2008. The committe includes eminent persons to give proper directions to the research of the two Institutes to meet the future challenges. Dr. M C Saxena has been nominated as Chairman of the RAC and the members are Dr. R P S Grewal, Prof. H Sekhar Sethy, Dr. S D Rai, Dr. V K Misra, Dr. A K Misra. Dr. K A Singh, Director, IGFRI & Dr. S K Dhyani, Director NRCAF, Dr. S N Shukla, ADG (FFC), Dr. A K Gogoi, ADG (AF), Shri Zafar Akhtar and Shri Puran Sharma.

Congratulations

Biotechnology Overseas Associateship 2007-08

The following three Scientists of IGFRI were awarded the above Associateship by the Department of Biotechnology, Ministry of Science & Technology, Government of India

1. **Dr. D.R. Malaviya**, Principal Scientist : Short term Associateship for 3 months to UK on Trifolium Biotechnology
2. **Dr. A.K. Misra**, Principal Scientist : Short term Associateship for 6 months to France on Feed Biotechnology and
3. **Dr. P. Kaushal**, Senior Scientist : Long term Associateship for 1 year to Italy on Apomixis research in grasses.

Remunerative forage based crop sequences for central region

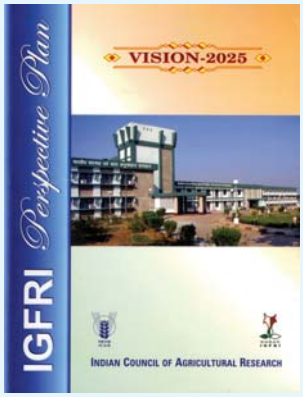
Productivity of livestock in central region is low because of poor availability of fodder and feed resources. Most of the states of the central region are deficit in dry matter required for their livestock. Balanced nutrition to livestock through feed and fodder has been possible in selected milk shed areas, where intensive fodder production is practiced. Therefore the role of forage and feed resources is crucial. The productivity of cultivated forage crops is generally low at farmers' field because it get least priority and share in the production resources. There is a need to educate farmers about advantages of growing forage crops by adopting appropriate forage species, varieties and management techniques to obtain better yields and sustain soil productivity.

Agro-economic evaluation of remunerative forage based system was conducted for five years (2000-2005) under AICRP on Forage Crops in net work mode at five locations in central region. The results revealed that irrespective of location, the biomass yield and net return of the system was increased by 5-95 per cent with inclusion of at least one forage crop over most adopted grain/commercial crop based sequence. Forage equivalent yield was less influenced as compared to net monetary returns. In the middle Gujarat zone, NB hybrid intercropped with cowpea in *kharif* and lucerne in *rabi* and summer gave 150 per cent higher net return and 215 per cent higher forage equivalent yield than the most adopted sequence maize (F) – potato – pearl millet (G). In Maharashtra under scarcity zone, superiority of perennial lucerne in terms of forage equivalent yield (46%) and net return (84%) over soybean-wheat-green gram was established. The performance of soybean-berseem-green gram and sorghum(F)-berseem-pearlmillet was almost equal but higher (30-40%) than the most adopted sequence. At another site in western Maharashtra plain zone, the performance of berseem based cropping sequence gave 40-55 per cent higher net return and 65-75 per cent in forage equivalent yield over other food and forage based sequences. Wheat based cropping systems gave least return in terms of profit and biological yield as compared to the tested sequences. In central plateau and hills region of Madhya Pradesh with assured irrigation, forage based cropping system gave 15-19 per cent higher biological yield and return over food grain based cropping system. Sorghum (F) – berseem – maize (F) + cowpea (F) realized significantly higher net return over most adopted sequence *i.e.* rice-wheat-green gram. Food-fodder system *i.e.*, rice-berseem-green gram was another remunerative sequence where 45 per cent increase in net return over rice-wheat green gram next to round the year forage production system of NB hybrid + cowpea in *kharif* and berseem in *rabi* was obtained. In Bundelkhand region of Uttar Pradesh, forage based system *viz.*, groundnut-berseem-maize+cowpea and sorghum(multicut)-berseem gave 30-45 percent higher net return over most adopted sequence (groundnut-wheat-green gram). The crop sequences with wheat during *rabi* in this region does not seem to be remunerative.

Research results have indicated that biologically suitable and economically viable cropping practices like forage based cropping systems have the potential to break the stagnation in system productivity and uneconomical farming. At all the research sites of central region inclusion of a forage crop in the sequence increased the economic returns. Besides, this inclusion of forage legumes in cereal based cropping also leads to favorable effect on the soil health.

(Sunil Kumar, G.S. Rathi, S.H. Pathan, M.R. Patel and V.K. Kauthale)

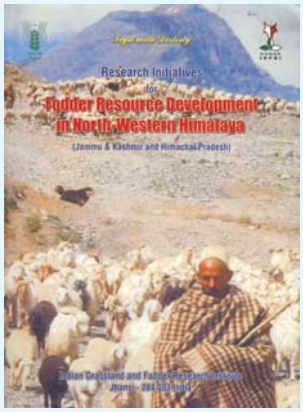
RECENT PUBLICATIONS OF IGFRI, JHANSI



"Indian agriculture must continuously evolve to remain ever responsive to manage the change and to meet the growing diversified needs of different stake holders in the entire production to consumption chain. An attempt has been made to visualize an alternate agricultural scenario from present to twenty years hence to capitalize on it, an in-depth analysis of the Strength, Weaknesses, Opportunities and Threats (SWOT) was undertaken to place our research and technology development efforts in right perspective so that we succeed in our pursuit of doing better than the best. Accordingly, researchable issues are identified, strategies drawn and programmes indicated to commensurate projects and relevant activities coinciding with launch of the XI Five Year Plan.

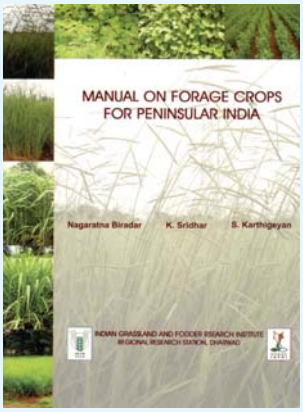
It is expected that realizing the Vision embodied in the document would further ensure that the IGFRI, Jhansi continues to fulfill its mandate to make Indian agriculture locally, regionally and globally competitive."

... Dr. Mangala Rai, Secretary DARE & DG ICAR



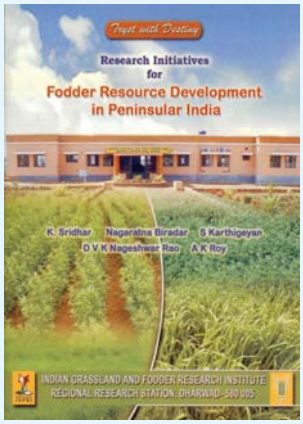
The presence of IGFRI in the North-West Himalayas (Jammu Kashmir & Himachal Pradesh) has made a significant impact on the fodder resource development. This is an effort to look back upon the work already done, analyze and bring them into a comprehensive publication, containing the significant research results. This document will help the policy makers, researchers and scientists.

Bimal Misri, S Radotra and Inder Dev



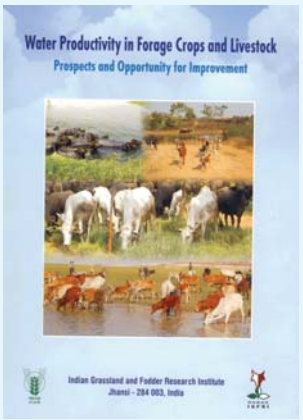
This is an attemt to review our knowledge on efficient use of water for fodder and livestock production and identify the researchable issues which may be carried out to ascertain the conditions under which "more fodder with less water" is possible. This publication describes a frame work to visualize and understand different components of fodder and livestock water productivity in agricultural systems.

MJ Baig, Sultan Singh, SK Rai, JB Singh, AK Misra, NB Biradar, OPS Verma and Anil Kumar



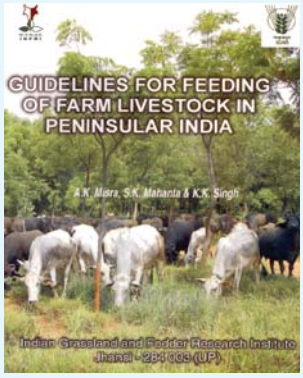
To meet the challenge of wide gap in forage demand and supply in peninsular India, the Regional Reesarch Station of IGFRI at Dharwad, since its inception in 1987 has made significant contribution through interdisciplinary research programmes. The present compilation embodying the research activities of the past two decades at this centre will be of immense use to researchers, planners and farming community.

K Sridhar, NB Biradar, S Karthigeyan, DVKN Rao, AK Roy



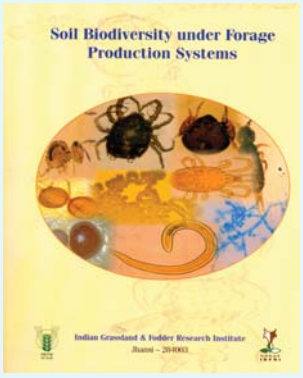
Production and utilization of improved fodder crops helps in increasing the milk production. Farming community in India is largely unaware about the importance of fodder crops. It is important to make farming community aware about the availability of a wide range of fodder crops for different farming conditions. This publication brought out by RRS, IGFRI, Dharwad is a step forward in this direction.

NB Biradar, K Sridhar and S Karthigeyan



The need for increasing the livestock/farm animal production and productivity at a rapid rate is imminent. Keeping in view the locally available feed resources and sharing the experiences on economic feeding of farm animals.This publication gives guidelines for feeding farm animals in peninsular India.

AK Misra, SK Mahanta and KK Singh



This is a compilation of information on below ground diversity associated with major fodder production systems like fodder crop, grasslands, silvi/hortipastoral system based on the research work carried out at IGFRI, Jhansi. This publication will not only provide good technical material for research workers but will also serve as a needful reference for planning ahead.

Sharmila Roy, Pradeep Saxena and MM Roy

Delegates viewing the exhibition

IGFRI Celebrates Environment Day

A view of the Dias

Vale[illegible]ry Function

Field Visit

Interaction with farmers

A glimpse of training on **Local institutional building for community land management** for IGFRI Scientists

Winners of drawing competition on the occasion

दैनिक जागरण 5

झांसी, मंगलवार, 27 मई, 2008

कृषि व चारा तकनीक खेतों तक पहुंचाने पर बल

झांसी : भारतीय चरागाह व चारा अनुसंधान संस्थान के सभागार में वैज्ञानिकों के पांच दिवसीय प्रशिक्षण का उद्घाटन मंगलवार को किया। उन्होंने कहा कि सूखा प्रभावित बुन्देलखण्ड क्षेत्र में खेतों तक कृषि व चारा तकनीक पहुंचाने के प्रयास होने चाहिए।

उन्होंने कहा कि शासन व स्वयंसेवी संगठनों के प्रयास के बाद भी भूमि संरक्षण के कार्यों को प्रगति नियोजनबद्ध नहीं है। कार्यक्रम के प्रारम्भ में निदेशक डॉ. कुमार अमरेन्द्र सिंह ने वैज्ञानिकों की सोच व दृष्टिकोण के सुधार करने के लिए प्रशिक्षण जरूरी बताया। रेडक्रास के डॉ. चौके रेड्डी ने प्रशिक्षण के विभिन्न पहलुओं पर प्रकाश डाला। इस अवसर पर डॉ. ओपी अग्निहोत्री, डॉ. एसबी चतुर्वेदी व डॉ. अमृत द्विवेदी उपस्थित रहे। संचालन डॉ. पुरुषोत्तम शर्मा व आभार डॉ. एसएन राव ने व्यक्त किया।

दैनिक भास्कर

ग्रासलैण्ड में वैज्ञानिकों को प्रशिक्षण

अमर उजाला झांसी

पांच दिनों तक भूमि प्रबंधन सीखेंगे वैज्ञानिक

राष्ट्रीय सहारा, कानपुर, मंगलवार, 27 मई 2008

प्रशिक्षण शिविर

झांसी। भारतीय चरागाह एवं चारा अनुसंधान संस्थान सभागार में आज 26 से 30 मई तक चलने वाले वैज्ञानिकों के प्रशिक्षण शिविर का शुभारंभ मुख्य अतिथि मण्डलायुक्त रमेन्द्र त्रिपाठी द्वारा किया गया। कार्यक्रम में संस्थान के 25 वरिष्ठ वैज्ञानिक भाग ले रहे हैं। इस अवसर पर मंडलायुक्त ने कहा कि भावन संसाधन विकास हेतु प्रशिक्षण कार्यक्रम को बढ़ावा देने के लिए संस्थान के कुमार अमरेन्द्र सिंह प्रशंसा के पात्र हैं। उन्होंने राष्ट्रीय कृषि विस्तार प्रबंधन संस्थान मैनेज हैदराबाद के कार्यक्रम कोर्स निदेशक डा. चौके रेड्डी का आभार व्यक्त करते हुए प्रशिक्षण में किसानों के प्रदेश पर एक दिवसीय कृषक सहभागिता को सराहा। डॉ त्रिपाठी ने सूखा से प्रभावित बुन्देलखंड क्षेत्र के लिए कृषि/ चारा तकनीकि को किसानों के खेतों तक पहुंचाने पर जोर दिया उन्होंने बुन्देलखंड क्षेत्र में कृषि संरक्षण कार्यों की चर्चा भी की। जो कि राज्य सरकार व कयी सेवी संस्थानों द्वारा कई वर्षों तक कराये गये। परन्तु प्रगति निराशा जनक रही। और भूमि की स्थिति में सुधार नहीं आया। (एसएनएस)

सेवानिवृत्ति

डा. जे एन गुप्ता
प्रधान वैज्ञानिक

श्री नन्नू
सहयोगी श्रेणी

30 अप्रैल 2008

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31 मई 2008

श्री राम आसरे सिंह
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30 जून 2008

श्री महावीर सिंह
सहायक

संस्थान परिवार आपके स्वस्थ जीवन की कामना करता है।

विक्रय हेतु उत्तम श्रेणी बीज

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निदेशक

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