



# NBAGR



## Newsletter

Volume-9 No. 2

DEDICATED TO ANIMAL GENETIC RESOURCES OF INDIA

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### From Director's Desk...

India is bestowed with the world's most varied and unique forms of fauna and flora. Farm livestock is one of the major constituent of this biodiversity. So far 37 of cattle, 13 of buffalo, 39 of sheep, 23 of goat, 2 of pig, 6 of Horse & Ponies, 8 of camel, 1 of donkeys and 15 of poultry breeds have been registered besides Yak, Mithun, ducks, quails etc. These defined breeds constitute about 25- 30% of our farm animals whereas rest forms the non-descript animals which are inadequately studied. NBAGR under its mandate of Identification, Evaluation, Characterization, Conservation and Utilization of livestock and poultry genetic resources has characterized most of the well known breeds of different farm animal species and documented them. Now the efforts are to study lesser known populations which constitute the remaining of the total livestock population. During the reported period, local cattle of Tripura, Kalahandi goat of Odisha and Sindhi donkey from Rajasthan have been characterized. Conservation is another important parameter which the bureau is looking into by taking *ex-situ* and *in-situ* programmes on the critically declining breeds or for the breeds at risk. Under *ex situ* conservation programme, we have collected around 15 thousand semen doses. Our inventory has reached more than 1 lakh semen doses cryo-preserved from more than 270 breeding males of 37 breeds of seven domestic animal species, which reflects about one fourth total livestock breeds diversity of the country. Superior germplasm of purebred cattle, sheep and goat have been distributed in the field for the genetic enhancement of local livestock of that area. The scientists of this premier institute have also advanced their efforts to study the genes controlling the various unique traits of indigenous breeds. Genes responsible for heat tolerance, disease resistance, meat quality and various other traits are being studied under various projects. The scientific findings are published in journals of high impact factor. Besides, the scientists from bureau also participated in International Conference on Conservation of Biodiversity COP 11-CBD held at Hyderabad and highlighted achievements. The Annual review meet was held to discuss the progress under Network project on AnGR. The progress of various ongoing research projects was examined during mid-term IRC held during the reported period. The five year progress for the period 2007-2012 was assessed by the Quinquennial Review Team. Efforts for getting the patents and commercialization of the technologies evolved under research projects have been initiated. To encourage the researchers, we have instituted Dr. P. G. NAIR Award for the Institute's scientist who excelled in field of characterization and conservation of indigenous livestock. Awards have also been instituted for the best worker in non-scientific categories. These awards have been given to the best workers first time. I congratulate all my fellow colleagues who received the Awards for the year 2012.



I express my sincere gratitude to all my staff for their cooperation in the process of achieving the mandated targets. I congratulate the editorial committee for putting their best efforts for developing this issue of Newsletter. Friends, I hope this issue will give you a glimpse of our rich livestock biodiversity, characterized, evaluated and documented by bureau.

*B.K. Joshi*

(B K Joshi)



"I want to realize brotherhood or identity not merely with the beings called human, but I want to realize identity with all life, even with such things as crawl upon earth".

Mahatma Gandhi

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## RESEARCH ACCOMPLISHMENTS

### Characterization of indigenous cattle germplasm of Tripura state:

Indigenous cattle germplasm of Tripura was characterized through conducting a survey in West, South, Gomti and Dhalai districts of Tripura state. Presently, there is no defined cattle breed available in the state. Animals are small but well built, compact and possess strong legs. Brown coat colour is most abundant followed by Red & Reddish, Black & Grey and White. Head is small. Face is short and concave. Ears are small to medium and horizontal in orientation. Horns are small, black or grey in colour with outward and upward orientation. Udder is small. Teats are small and cylindrical. Tail is long and reaches up to the hock. Switch is black. The animals are docile and reared mainly under extensive management system.

The average body length, height at wither, heart girth, paunch girth, horn length, ear length, face length and tail length (without switch) in cows are  $98.09 \pm 0.54$ ,  $93.39 \pm 0.44$ ,  $122.05 \pm 1.09$ ,  $125.14 \pm 1.08$ ,  $14.37 \pm 1.48$ ,  $19.47 \pm 0.24$ ,  $35.30 \pm 0.20$  and  $68.63 \pm 0.51$  cm, respectively. The corresponding estimates in bullocks are  $101.17 \pm 0.97$ ,  $99.95 \pm 0.74$ ,  $132.83 \pm 1.40$ ,  $131.41 \pm 2.18$ ,  $16.77 \pm 1.19$ ,  $21.12 \pm 0.32$ ,  $38.30 \pm 0.41$  and  $71.83 \pm 0.86$  cm, respectively. The cow and bullock weighed about 110 kg and 142 kg, respectively. Daily Milk yield is  $1.36 \pm 0.06$  kg. The average age at first calving, lactation length, dry period, service period, calving interval, herd life and number of calving during life time are 44 months, 145 days, 122 days, 131 days, 424 days, 12-15 years and 8-10 calving, respectively.



*Tripura Cattle*

*(Contributed by R K Pundir, Principal Scientist)*

## SECTORAL NEWS

### CGRFA releases Report of Seventh Technical Meeting on Animal Genetic Resources

The Commission on Genetic Resources for Food and Agriculture (CGRFA) of the UN Food and Agriculture Organization (FAO) has released the report of the seventh meeting of the Intergovernmental Technical Working Group on Animal Genetic Resources (ITWGAnGr). The report presents highlights of discussions and recommendations on the review of implementation of the Global Plan of Action (GPA) for AnGr, draft technical guidelines for GPA implementation, and the review of implementation of the Plan's funding strategy; roles of small-scale livestock keepers in the conservation and sustainable use of AnGr; the Second Report on the State of the World's AnGr; targets and indicators; the status and trends of micro-organisms for ruminant digestion; and access and benefit-sharing for AnGr.

[Source: <http://www.fao.org/ag/againfo/programmes/en/genetics/angrvent.html>]

### Characterization of Sindhi donkeys of Rajasthan:

The Sindhi donkeys are reared by Kumhar, Sansi and Bhil communities in Barmer and Jaisalmer districts of Rajasthan. About 1-6 donkeys are kept per household.

The Sindhi donkeys are small in size with leaner built. The predominant coat colour is light brown. The belly, inner surfaces of legs, ventral side of neck and inner sides of ears are white in most animals. The face is longer and thinner. The forehead is slightly convex. Averages of height at wither for adult males and females are  $98.8 \pm 3.9$  and  $97.93 \pm 4.9$  cm, respectively. The body length varies from 82 to 105 cm. The average body weights of adult males and females are  $84.95 \pm 10.12$  and  $89.54 \pm 14.57$  kg, respectively. The chest girths are  $104.3 \pm 5.35$  cm and  $106.52 \pm 5.97$  for males and females, respectively. The averages of canon length for fore and hind limbs are  $19.7 \pm 1.42$  and  $28.39 \pm 1.51$  cm, in males and  $19.0 \pm 1.38$  and  $27.33 \pm 1.62$  cm, in females, respectively. The averages of tail length are  $52.1 \pm 4.42$  and  $51.14 \pm 4.56$  cm in male and female, respectively.



*Male Sindhi donkey*

The main breeding season is March to September month. The Jacks are selected on the basis of general health, working ability, agility, good look, erect ears and lustrous eyes. Eight to Ten foalings are expected in life span of about 15 years. The Sindhi donkeys are able to carry about 100 kg of load. They are also used extensively in carting and ploughing. The animals are well adapted to nutritional scarcity.

*(Contributed by Rahul Behl, Senior Scientist)*

### Kalahandi goat - A lesser known goat population of Odisha:

Kalahandi goats are medium sized animals, found in Kalahandi, Nuapara and adjoining areas in Odisha state. The animals are mostly brown or fawn in colour and show light colour strips extending from base of the horn up to the nostrils on both lateral sides of face. Ears are flat, leafy and drooping. Legs are thin and cylindrical. Horns



*Colour variants of Kalahandi goats*

are long and flat, orienting upward and backward. Averages for height at withers, body length, chest girth, paunch girth, face length, horn length, ear length and tail length are 70.32, 69.05, 71.53, 73.84, 17.89, 15.05, 15.74 and 15.32 cms, respectively for adult males and 65.51, 66.28, 70.36, 74.87, 15.29, 12.74, 15.01 and 13.97 cms, respectively for adult females. The body weights of adult males and females are 33.42 and 30.88 kg, respectively.

Genetic diversity in Kalahandi goat population was estimated with 25 microsatellite markers. The average numbers of observed and effective alleles are 11.08 and 4.29, respectively. The Polymorphic Information Contents (PIC) ranged from 0.45 to 0.91 with an average of 0.79. The observed heterozygosity ranged from 0.11 to 0.98, whereas the expected heterozygosity ranged from 0.11 to 0.87, respectively. There is substantial genetic variation and polymorphism across the loci and no serious genetic bottleneck was observed in Kalahandi goats.

*(Contributed by N K Verma, Principal Scientist)*



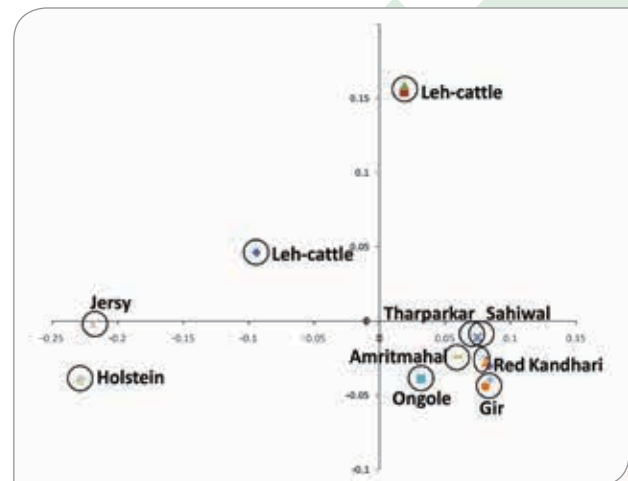
### Nucleotide diversity in candidate genes for mutton quality traits in Indian sheep:

Growth differentiation factor 8 (*GDF8*) and calpain (*CAPN*) genes associated with mutton quality traits were analyzed in Bandur, Chokla, Deccani, Ganjam, Garole, Madgyal, Magra, Malpura, Muzzafarnagri and Nali sheep. Four unique variants were identified in sheep *GDF8*. SNP at g.6723 (G>A) of 3'UTR, affecting muscularity seems fixed for g.6723G allele in the Indian sheep breeds. The overall haplotype and nucleotide diversities were 0.73061 and 0.17293 respectively. Sheep *CAPN* gene revealed a single (C>T) transversion in the intron 5. The presence of novel nucleotide variations in meat quality related genes reflect the greater genetic diversity existing in indigenous sheep breeds.

*(Contributed by Reena Arora, Principal Scientist)*

### High density bovine SNP array based assessment of genetic relationship of Indian cattle adapted to different agro-climatic conditions:

In order to discover the genome wide SNPs and unravel whole genome based population structure of Indian cattle, a total of 23 individuals representing 7 native cattle breeds adapted to different agroclimatic regions viz; Amritmahal, Gir, Ongole, Red Kandhari, Sahiwal, Tharparkar, Leh cattle and two exotic breeds viz; Holstein and Jersey cattle were genotyped using 770K high density bovine SNP chip. Marker data for animals with call rates less than 90% and minor allele frequency (MAF) less than 5% were omitted. SNPs that showed extreme deviation from Hardy-Weinberg equilibrium ( $p < 0.001$ ) in individual population groups were also eliminated. This resulted in a total of 6,014,23 autosomal SNPs that passed the quality control and were used as the final data set for the model and analysis. The population structure analysis through multidimensional scaling plot revealed grouping of Indian cattle breeds in one cluster and wide separation from taurine cattle. The native cattle from Leh and laddakh region were genetically distinct from rest of the Indian cattle. This study represents a first approach to assess population structure of Indian native cattle breeds using the high density SNP chip and re-establishes the genetic distinctness of Indian cattle from taurine cattle.



*Multi-Dimensional scaling plot revealing genetic relationship between Indian native and taurine cattle*

*(Contributed by Manishi Mukesh, Senior Scientist)*

### Utilization of goat cauda epididymal spermatozoa for cryopreservation:

Sperms were extracted from goat cauda epididymus and diluted in five different extenders with varying proportion of glycerol to assess preservation quality parameters. 7% glycerol was found optimum for maintaining the motility, viability, acrosomal and membrane integrity of the sperm. An extender containing trihalose, egg yolk (20%) and glycerol (7%) could retain the maximum motility (65%) after 60 minutes, at room temperature. It also has maximum post thaw motility (55%), and viability (72%), acrosomal integrity (71%) and membrane integrity (60%) after 28 days of storage compared with various combinations of extenders.

*(Contributed by RAK Aggarwal, Senior Scientist)*

## Dissemination of superior germplasm for *in situ* conservation:

Twenty elite breeding bucks of local goat and three breeding cattle bulls were procured and distributed to the beneficiaries in Inder vally, Kerameri and Bheemini mandals of Adilabad (Andhra Pradesh) for the genetic improvement of local livestock germplasm of that area. The project workers also interacted with the beneficiaries and other farmers of Gaurapur and Babijhari villages and suggested scientific methods for livestock management.

*(Contributed by K N Raja, Scientist)*



*Distribution of bucks in Adilabad (A. P.)*

## Enrichment of National GeneBank for *ex-situ* conservation:

Following number of semen doses were procured and cryopreserved in GeneBank for posterity.

Species	Breed	No. of bulls	No. of doses	Species	Breed	No. of bulls	No. of doses
Cattle	Tharparkar	3	2500	Cattle	Red Khandhari	2	1000
	Amritmahal	1	500		Gangatiri	2	1000
	Dangi	1	500		Frieswal	5	2450
	Vechur	3	1200	Buffalo	Bhadawari	11	2780
	Hallikar	1	500		Banni	3	1500
Khillar	3	1450					

*(Contributed by RAK Aggarwal, Principal Scientist)*

## OTHER ACTIVITIES

**Institute Technology Management Unit (ITMU):** Meetings of Institute Technology Management Committee were held on 20<sup>th</sup> September 2012 and 11<sup>th</sup> December 2012. In first meeting, four patent applications submitted by the NBAGR scientists, were discussed and two applications were approved for complete filing and one for provisional filing of the patent. In second meeting, MoA and other modalities for commercialization of three technologies, already applied for patents in 2011 were discussed and finalized.

**Institute Research Committee (IRC):** Institute Research Committee meeting was held on 25<sup>th</sup> & 26<sup>th</sup> September, 2012 under the Chairmanship of Dr. B. K. Joshi, Director, NBAGR. Progress reports of the on-going research projects were discussed.

**Annual Review Meeting of Network Project:** 11<sup>th</sup> Annual Review Meeting of Network Project on AnGR was held on 25<sup>th</sup> August, 2012 under the chairmanship of Dr. K. M. L. Pathak, DDG (AS), ICAR, Delhi. The meeting was also attended by Dr. S. C. Gupta, ADG (AP&B), Dr. Gaya Prasad, ADG (AH) and Dr. Vineet Bhasin, Pr. Scientist, Animal Science Division, ICAR, New Delhi. The In-charges of core labs under Network project and of buffalo genomics presented the reports of their respective units. Updated version of cattle and buffalo breed calendars; breed monographs on Toda buffalo and Berari goat were released on this occasion. All the scientists from the Bureau also attended the meeting.



*Network meet in progress.....*



*Release of publications....*

**Quinquennial Review Team:** The Quinquennial Review Team (QRT), headed by Dr. P. Thangaraju, Former Vice-Chancellor, TANUVAS, Chennai visited the Bureau on 26<sup>th</sup> October, 2012 and 19-20<sup>th</sup> December, 2012 to review the work done by the NBAGR, Karnal, for the period 2007 to 2012. The In-charges of Divisions/Sections made a presentation of various activities before the QRT. The team visited the laboratories and had interactions with the scientists.

1	Dr. P. Thangaraju Ex- Vice Chancellor , TANUVAS, Chennai	Chairman
2	Dr. N. Kandhasamy Ex- Professor, Veterinary College, Nammakkal	Member
3	Dr. K. Thangaraj Dy. Director, CCMB, Hyderabad	Member
4	Dr. V. K. Singh Ex-Director, CSWRI, Awikanagar	Member
5	Dr. K.P. Agarwal Ex- NC, NATP	Member
6	Dr. Kamlesh Gupta Ex-Professor & Head, AG&B Deptt. CSKHPKV, Palampur	Member
7	Dr. R.K. Pundir Principal Scientist, NBAGR	Secretary



*QRT meeting in progress*



*Chairman, QRT in the lab*



## CELEBRATIONS

### 29<sup>th</sup> Foundation Day Celebration of NBAGR:

The Bureau celebrated its 29<sup>th</sup> Foundation day on 21<sup>st</sup> September, 2012. The function was presided by Dr. B. Pisupati, Chairman, National Biodiversity Authority. Dr. D.K. Sharma, Director, CSSRI, Karnal graced the occasion as Guest of Honor. A poster exhibition was held to mark the occasion. Foundation Day address was delivered by Dr. Pisupati emphasizing the holistic and sustainable approach for conservation of AnGR. A Monograph on Banni buffalo, NBAGR Newsletter (Jan-June 2012) and CD on “भारतीय पालतू पशु जैव विविधता” were released by honorable Guests.

First Dr. P G Nair Award instituted by NBAGR for outstanding scientific contribution was conferred



*Dr RS Kataria receiving first Dr. PG Nair Award*



*Sh Karambir receiving best Adm. worker award*



*Sh. Moti Ram receiving the best Technical officer award*



*Sh Mahavir receiving the best Technical worker award*



*Sh Satbir receiving the best Supporting staff worker award*

to Dr. R. S. Kataria, Sr. Scientist for the period 2009-11. Best worker awards for different categories were also conferred on this occasion. Sh Karambir (Administrative), Sh Moti Ram (Technical officer), Sh. Mahavir (Technical) and Sh Satbir (Supporting Staff) received the best worker awards.

## Vigilance day:

NBAGR staff members took the oath against corruption on 29<sup>th</sup> October, 2012 to commemorate the Vigilance Day.

## Independence Day:



*Director, NBAGR addressing the bureau family*

The NBAGR staff and families celebrated 65<sup>th</sup> Independence Day on 15<sup>th</sup> August, 2012. Dr. B. K. Joshi, Director, NBAGR hoisted the tricolor and addressed the staff and family members on this occasion. Children presented cultural programmes and participated in athletic events.



*Spoon Race in progress...*

## FAIRS/ EXHIBITIONS

- ◆ NBAGR participated in Fish Festival on 22.09.2012 at Rohtak Centre (Lahli) of CIFE.
- ◆ NBAGR exhibited their activities in International Conference of Partners (CoP)11- Convention of Biological Diversity (CBD) held at HITEX City, Hyderabad during 2-19 Oct, 2012.
- ◆ NBAGR participated in National Seminar on "Prosperity through diversification in agriculture" on 22.12.2012 and Kisan Divas on 23.12.2012 at NDRI, Karnal and showcased the activities in the exhibition.



*Dr. S. Ayyappan, DG (ICAR) at NBAGR Stall*



## RESEARCH PUBLICATIONS

1. Aggarwal J, Sharma A, Kishore A, Mishra BP, Yadav A, Mohanty A, Sodhi M, Kataria RS, Malakar D and Mukesh M. 2012. Identification of suitable housekeeping genes for normalization of quantitative real-time PCR data during different physiological stages of mammary gland in riverine buffaloes (*Bubalus bubalis*). *Journal of Animal Production and Nutrition*, DOI: 10.1111/jpn.12027.
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4. Joshi B K, Sodhi Monika, Mukesh M and Mishra B P. 2012. Genetic characterization of farm animal genetic resources of India: A review. *Indian Journal of Animal Sciences* **82**(11): 1259-1275.
5. Kishore A, Sodhi M, Sobti RC, Mukesh M, Mishra BP. 2012. Variation analysis in the regulatory region of alpha S1-casein milk protein gene among tropically adapted Indian zebu cattle (*Bos indicus*). ISRN Biotechnology, <http://dx.doi.org/10.5402/2013/926025>.
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11. Sharma R, Ahlawat and Maitra A. 2012. Molecular markers in Assessment of Meat Quality. *Livestock International*, **16**(1): 14-15.
12. Sharma R and Ahlawat S. 2012. Selection in small ruminants: The journey so far. *Livestock International*, **16**(3): 19-21.
13. Sharma R, Singh P K and Ahlawat S. 2012. Shahabadi: An important cattle germplasm of Bihar. *Livestock International*. **16**(4)
14. Singh P K, Pundir R K, Kumarasamy P and Vivekanandan, P. 2012. Management and physical features of migratory Pullikulam cattle of Tamilnadu. *Indian Journal of Animal Sciences*, **82**(12):15287-1590.
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19. रेखा शर्मा एवं सोनिका अहलावत 2012. गायों में गर्भ परिक्षण की विधियाँ वर्तमान स्थिति और भविष्य की संभावनाएं पशुधन प्रकाश. **3**: 79-83.
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21. सोनिका अहलावत एवं रेखा शर्मा 2011. पशुओं में थिलेरियोसिस रोग के कारण और निवारण। कृषि किरण **4**: 96-98
22. मनीषी मुकेश, अमित किशोर, प्रवेश मुंजाल, मोनिका सोढ़ी (2012) बदलते वैश्विक परिवेश में भारतीय पशुधन सम्पदा: एक अवलोकन पशुधन प्रकाश **3**: 71-76

## Book Chapters

- ♦ MicroRNA : A Revolutionary Biomarker in Dairy Industry (chapter 15). Sanjeev Singh and Indrajit Ganguly. *Advances in Cattle Research*. P. 261-276. Satish Serial Publishing House, Delhi-110033, India.
- ♦ Epigenetic Complexity and Livestock Improvement with Special Reference on Cattle (chapter 8). Indrajit Ganguly, Anita Ganguly and Sanjeev Singh. *Advances in Cattle Research*. P. 141-160. Satish Serial Publishing House, Delhi-110033, India.
- ♦ Strategies to decipher genomic architecture of Indian native cattle (Bos Indicus) for improvement and sustainable utilization. Sodhi M, Mukesh M, Joshi B K and Sobti RC. *Sustainable development of fisheries and livestock for food security*. P. 105-114. Narendra Publishing House, Delhi, India.

## Leaflet

- ♦ एम सोढ़ी, एम मुकेश, ए किशोर, बी पी मिश्रा, बी प्रकाश, आर एस कटारिया एवं बी के जोशी (2012). भारतीय गो-धन: ए 2 दूध के लिए एक प्राकृतिक संसाधन। एन. बी. ए. जी. आर., करनाल।

## Awards

- ♦ 1<sup>st</sup> Prize awarded to Dr Rekha Sharma for Best Oral presentation entitled "Investigation of indigenous goat GDF9 gene for polymorphism associated with twinning in exotic goat using PCR-RFLP method" at the National conference on "NexGen Biotechnology: Amalgamating Science & Technology" November 23-24, 2012 at UIET, Kurukshetra, Kurukshetra University.
- ♦ डॉ एन के. वर्मा द्वारा वार्षिक हिन्दी शोध-पत्रिका "पशुधन प्रकाश" के प्रथम अंक वर्ष 2010 में प्रकाशित लेख "भारतीय बकरी-प्रबंधन, संरक्षण व भारतीय अर्थव्यवस्था में योगदान" को प्रथम पुरस्कार दिया गया।
- ♦ मोनिका सोढ़ी, बी पी मिश्रा, एम मुकेश, अमित किशोर, आर कपिल, पी कुमारी, के खाते एवं बी के जोशी द्वारा वार्षिक हिन्दी शोध-पत्रिका "पशुधन प्रकाश" के द्वितीय अंक वर्ष 2011 में प्रकाशित लेख "भारतीय गो नस्लों में बीटा-केसीन ए2 एलील की प्राकृतिक प्रचुरता" को द्वितीय पुरस्कार दिया गया।

- ♦ मनीषी मुकेश, अमित किशोर, अंकिता शर्मा, प्रवेश मुंजाल एवं मोनिका सोढी को एन.बी.ए.जी.आर. के स्थापना दिवस पर आयोजित पोस्टर प्रतियोगिता में “बदलते जलवायु परिवेश में भारतीय पशुधन की महत्वता” के लिए द्वितीय पुरस्कार दिया गया।
- ♦ डॉ बी के जोशी द्वारा वार्षिक हिन्दी शोध-पत्रिका “पशुधन प्रकाश” के प्रथम अंक वर्ष 2010 में प्रकाशित लेख “भारतीय पशु आनुवंशिक संसाधन की स्थिति एवं चुनौतियाँ” को द्वितीय पुरस्कार दिया गया।
- ♦ डॉ सोनिका अहलावत एवं डॉ रेखा शर्मा द्वारा वार्षिक हिन्दी शोध-पत्रिका “पशुधन प्रकाश” के द्वितीय अंक 2011 में प्रकाशित लेख “सेक्सड वीर्य – प्रजनन प्रौद्योगिकी के क्षेत्र में एक क्रांति” को तृतीय पुरस्कार दिया गया।

## DISTINGUISHED VISITORS

- ♦ Dr. R. K. Sethi, Director, CIRB visited on 07.07.2012.
- ♦ Dr. R. M. Acharya, Former DDG (AS) visited on 13.08.2012.
- ♦ Dr. K. M. L. Pathak, DDG (AS), Dr. S. C. Gupta, ADG (AP&B) and Dr. Gaya Prasad, ADG (AH) visited on 25.08.2012.
- ♦ Dr. Sabyasachi Das, Chief Executive Officer, Sahjeevan, Kutch visited on 28.08.2012.
- ♦ Faculty and students from Zoology Department, Hansraj College, Delhi visited on 13.09.2012.
- ♦ Prof. U. B. Mohapatra, Director (Technology), Biotechnology and Dr. C. C. Rath, Deputy Director (Technical), Biotechnology, Science & Technology Department, Govt. of Odisha, Bhubaneswar visited on 05.11.2012.
- ♦ Dr. K. M. L. Pathak, DDG(AS), ICAR, Dr. R. K. Sethi, Director, CIRB, Hisar and Dr. R. K. Singh, Director, NRCE, Hisar visited for having a look at the construction of the first floor of the lab-cum-office building of NBAGR on 22.12.2012.



*Dr. K. M. L. Pathak, DDG(AS) Planting Tree in Bureau Premises*

## PERSONNEL

### JOININGS:

- ♦ Dr. Anil Kumar Mishra, has joined NBAGR, Karnal as Principal Scientist on 29.08.2012.

### PROMOTIONS:

- ♦ Sh. Balkar Singh, Assistant has been promoted to the post of Asstt. Administrative Officer w.e.f. 15.06.2011.
- ♦ Sh. Sunil Kumar, Asstt. Finance & Account Officer has been promoted to the post of Finance & Accounts Officer w.e.f. 18.12.2012.
- ♦ Sh. Pawan Kumar Gupta has been promoted to the post of Assistant Finance & Accounts Officer w.e.f. 29.12.2012.



## राजभाषा प्रकोष्ठ की मुख्य गतिविधियां

- ◆ संस्थान राजभाषा कार्यान्वयन समिति की बैठक दिनांक 21.07.2012 को सम्पन्न हुई जिसमें किसानों से संबंधित शोध जानकारी उपलब्ध करवाने वाली प्रकाशन सामग्री का हिंदी अनुवाद प्रदर्शनी अनुभाग के सहयोग से करने का निर्णय लिया गया।
- ◆ संस्थान में हिंदी चेतना मास 2012 के अंतर्गत दिनांक 3.09.2012 को “कन्या भ्रूण हत्या – एक सामाजिक अभिशाप” विषय पर एक हिन्दी निबंध लेखन प्रतियोगिता का आयोजन किया गया। इस प्रतियोगिता में वैज्ञानिकों, तकनीकी व प्रशासनिक कार्मिकों ने बढ़-चढ़कर भाग लिया। दिनांक 4.09.2012 से 6.09.2012 तक पत्र लेखन, शब्दार्थ, मसौदा लेखन प्रतियोगिताओं का आयोजन किया गया।
- ◆ दिनांक 18.09.2012 को तिमाही हिन्दी कार्यशाला/ व्याख्यान आयोजन की श्रृंखला के अंतर्गत ब्यूरो कर्मियों को “तनाव के कारण व निदान” विषय पर राजयोग शिक्षा केन्द्र से आमंत्रित बहन कु. फाल्गुनी जी ने तथा बहन कु. रेणु जी ने व्याख्यान देकर ब्यूरो कर्मियों को लाभान्वित किया।



व्याख्यान...



पोस्टर प्रदर्शनी...

- ◆ दिनांक 21.09.2012 को शोध-पत्र पोस्टर प्रदर्शनी का आयोजन किया गया जिसमें वैज्ञानिकों तथा शोधवेत्ताओं ने बढ़-चढ़कर भाग लिया।
- ◆ दिनांक 21.09.2012 को संस्थान के स्थापना दिवस के अवसर पर वार्षिक हिन्दी पत्रिका “पशुधन प्रकाश” के तृतीय संस्करण का विमोचन किया गया।
- ◆ संस्थान राजभाषा कार्यान्वयन समिति की बैठक दिनांक 18.10.12 को सम्पन्न हुई जिसमें पशुधन प्रकाश में विजेता तीन शोध लेखों हेतु नकद पुरस्कार देने का निर्णय लिया गया।
- ◆ इसके साथ-साथ संस्थान की वेबसाईट का द्विभाषीकरण किया गया है और अब हिन्दी में भी ब्यूरो की वेबसाईट उपलब्ध है।



पशुधन प्रकाश – तृतीय अंक (2012) का विमोचन