



केन्द्रीय बकरी अनुसंधान संस्थान
Central Institute for Research on Goats



CIRG *news*

OUR NEW DIRECTOR GENERAL

Born on December 10, 1955 at Alakere in Karnataka State, Dr. Ayyappan has made significant contribution to the field of research in fisheries, freshwater aquaculture and aquatic microbiology. Dr. S Ayyappan has taken over as the Secretary,



Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research on January 1, 2010. Dr. Ayyappan is a noted expert in Fisheries Sciences and has served with distinction in various capacities, including Deputy Director General (Fisheries) in ICAR (2002-09), Director, CIFE, Mumbai (2000-2002) and Director, CIFA, Bhubaneswar (1996-2000). He is decorated with several awards and honours that include Zahoor Qasim Gold Medal, ICAR award for team research, ZSI Gold Medal, Special ICAR Award, VG Jhingran Gold Medal, HPC Shetty Award, S R Bhargava Medal, S L Hora Gold Medal, ASET Gold Medal, besides being Fellow of various prestigious societies. Presently he is the Vice President of NAAS. He has more than 200 research publications to his credit in national and international journals and authored many books and documents. He has two patents and one design in his name. Dr. Ayyappan has represented India in several important international fora and has served on the Boards of several international institutions and organizations such as Network of Aquaculture Centers in Asia-Pacific (NACA), Bangkok, Thailand; World Fish Centre, Penang, Malaysia etc. Dr Ayyappan was the founder Chief Executive of the National Fisheries Development Board, Hyderabad and virtually established the Board.

We are confident that under his able guidance and leadership, National Agricultural Research System will achieve new heights.

Director's Message



It gives me an immense pleasure to present the CIRG News Volume 4, issue 1&2. The Indian Council of Agricultural Research entrusted to me the responsibility of the Director of CIRG – an institute committed for promoting socio-economic growth of the socially and economically deprived poors of the nation through improved goat production. Globally goats and other small ruminants are among the most popular and beneficial livestock for those with very limited resources. Small scale goat production is of significant benefit to families all over the world living in a wide variety of climates

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Dr. A.K. Das
Dr Vijay Kumar

and conditions. There are about 800 million goats worldwide, and they have been found to be among the most adaptable animals. Helping the poor to successfully raise goats can have a very significant impact on their income, social status and even on the local environment. Constraints to livestock raising include the lack of good breeding stock, lack of veterinary and extension services, lack of credit and access to markets. Focusing more assistance on small holder farmers would improve impact on the poor. Value-based holistic community development with self-help groups may create a foundation for increasing farmer incomes by providing a forum for education, mutual support and developing markets. Constraints faced in the introduction and spread of goats and increasing their benefit to the small scale producers as well as success factors and best practices will be worked out and suitable frame work will be employed. About 60% of the world's pasture land (about 2.2 million km²), just less than half the world's usable surface, is covered by grazing systems. Distributed between arid, semi-arid and sub-humid, humid, temperate and tropical highland zones, this supports 600 million sheep and goats, mostly in the arid rangelands. Grazing systems supply about 30% of the world's production of sheep and goat meat. The goat products are among the foods available with human health promoting characteristics. Worldwide, the only possible source of livelihood for 100 million people in arid areas is by grazing small ruminant. Grazing goats can improve soil and vegetation cover and plant and animal biodiversity for example, by removing biomass, which otherwise might provide the fuel for bush fires, by controlling shrub growth and by dispersing seeds through their hoofs and manure that can facilitate plant species composition. In addition, trampling can stimulate grass tillering, improve seed germination and break-up hard soil crusts. However, many people associate grazing animals with overgrazing, soil degradation and deforestation. To them livestock keeping in arid regions of the tropics provokes images of clouds of dust and an advancing desert. People are welcome to visit The Central Institute for Research on Goats to witness the floral biodiversity rich grazing area and agro-forestry units laden with useful plantation and crops in nearly 140 hectares of land of the institute maintaining over three thousand goats. This will certainly help in clearing doubts about environmental stability vis-à-vis goat rearing.

Among the poor, livestock account up to 60% of their income. In India farmers experience a very significant role of livestock in increase in income from the sale of milk, breeding stock and animals for slaughter. Other major benefits are the improved productivity of small farms by the incorporation of manure and the use of other farming practices such as the planting of trees and forages controlling soil erosion. Secrets to success in the promotion of goat production by the poor in the less developed regions of the country will be based on the experience of our previous rural research and development programs related to animal care and health. To promote goat production among poor's for nutritional and livelihood security, holistic community development programs for education, improved goat breeds, agro-forestry pastoral system of common property resources, mutual support, asses credit aid and markets require for successful goat development programs to increase family income of poor's.

Milk sucking behaviour in doe goats

Vices/abnormal behaviours are faulty habits acquired by goats. These vices affect the performance and health of their own as well as other goats of the group by virtue of copying. Milk sucking is one such faulty habit observed commonly in nannies when they continue suckling habit and in does having longer intermilking/ suckling interval leading to less mothering ability, suboptimal growth of kids which favours the development of abnormal behaviors in kids like soil licking, intersucking etc. The milk yield of such goats may not be able to record properly. The managerial remedies which could control the self sucking are separating such a doe/ nannies from the group and tying them individually, use of muzzle, neck straps, aluminium anti-sucking shield, halter having blunt spikes protruding from the front of the nose band and most commonly udder bags. The udder bags are commonly used by farmers who rear goats in small flocks and tying them individually. In organized flocks, the udder bags are easily damaged by other goats either by tearing them using horns or chewing the cloth. In such cases, other devices should be used for control of milk sucking especially in milch goat breeds.

Contributors: N. Ramachandran & S K Jindal



Goat faeces vermicompost

Goats' rearing is mainly associated with resource poor farmers in developing countries. In general, goat keepers are not much aware or interested to know about economic importance of goat faeces. Dumping of goat faeces in an open area for use as manure under natural decomposition is a common practice resulting loss of nutrients due to direct exposure to sunlight, temperature and rainfall. The practice created foul smell and provides favorable conditions to various insect and pests growth. In this process decomposition also takes long time to mineralize nutrients for conversion into manure. Goat keepers may enhance their income by making vermicompost from goat faeces, which can be marketed for organic crop,

vegetable or ornamental plant productions. Goat producers can also use vermicompost for their own farms, which has better nutrient densities because of reduced nutrient losses due to lowered decomposition time and fasten mineralization process. Plant material i.e. *Saccharum munja*, *Calitropis sp.*, *Azadirachta indica*, *Ficus benghalensis* and grasses can be mixed with goat faeces. An special kind of earth worms easily convert these in to vermicompost in a very short time. While sole plant material as such are not ingested by earthworm and took months together for conversions into vermicompost.

Contributors: P Tripathi & T.K. Dutta

Jamunapari: A dairy goat breed of India

Jamunapari is one of the important milch breed of goats in India. The animals of this breed are reared mainly for milk production, but they are also important for meat production. Natural habitat of Jamunapari breed is the ravines of Yamuna, Chambal and Kaweri rivers which have wide diversity of shrubby vegetations in abundance. The breed relish browsing for its adaptability in native tract. Generally, six to eight hrs grazing meets nutrient requirements under range/ agro forestry or community grazing on common property resources system of management; however strategic supplementation of critical nutrient during different physiological stages and seasons needs to achieve improved performance. During lean periods tree loppings and 200 to 250 g concentrate supplementation to adult females recommended. The average lactation length is 155 days with milk yield of 145 lit. The breed has tremendous potential of milk production and can be achieved up to 250 liters in a lactation if exploited under optimum environmental conditions. The kids have good potential for meat production as pre- and post weaning growth can be harvested up to 200 g/ day with 36 kg live weight at 6 month of age. This indicate that breed have tremendous genetic potential for milk and meat production yet to be exploited to it maximum expression.



Contributor: U.B Chaudhary

“Goats provide livelihood and nutritional security to socially backward and economically poors in developing countries”



Chelated minerals improved micro nutrient use efficiency

Supplementation of chelated minerals at 0.75 to its inorganic counter parts (Cu and Zn) increased micro mineras use efficiency. The barbari kids had mean feed dry matter intake between 392 to 414 g with average intake of 408 g DM /animal/ day at live weight of 12.8 kg for having a daily gain of 48 g, which accounted dry matter intake 3.18% of body weight with feed efficiency for growth of 11.76% and feed conversion ratio (kg feed/ kg gain) of 8.5.

Contributors: M.K. Tripathi & U.B. Chaudhary

Heat stress management

Heat stress affects animal bioenergetics, and has negative impact on animal performance and well being. The impact of shelter employing thatch roof shed and asbestos sheet roof shed on physiological responses and milk production of Sirohi goats was assessed. The animals under thatched roof shed had lower rectal temperature and respiration rate. The goats under thatched roof shed consumed less water and produced more milk. Therefore, under heat stress conditions thatched roof shed is recommended in place of asbestos sheet roof shed for higher water use efficiency, better productivity and well being of milch animals.

Contributors: N. Ramachandran & S.P. Singh

Milk production of Sirohi goats in two system of shelter

Milk production (ml)	Asbestos roof shed	Thatch roof shed
Morning	370	461
Evening	259	281
Total	629	742

Mansoon herbage based complete feed pellets

The institute has developed and evaluated complete feed pellets utilizing mansoon herbage *Cenchrus ciliaris* (grass), *Dactyloctenium aegypticum* (grass), *Tephrosia purpurea* (legume), *Salvadora persica* (tree leaves) for goats feeding.

Contributors: P. Tripathi & T. K. Dutta



Anti-diarrhoea pathogenic agent isolated and characterized

About 25 isolates of E.coli were obtained after screening by Biochemical tests, and then they were subjected to Molecular characterization by PCR amplification of 'bfpA' gene. Plasmid DNA was isolated by Slide-scratch method, and the primer-oligonucleotide sequence used for amplification was F: 5'-AATGGTGCTTGCGCTTGCTGC-3' and R: 5'-GCCGCTTTATCCAACCTGGTA-3' of the 'bfpA' gene giving a product size of 326 bp. Out of the 25 isolates tested for 'bfpA' gene, 15 were positive giving an evident presence of EPEC in the diarrhoic kids. The bfpA positive isolates were again tested for the antibiotic sensitivity patterns using the commonly used antibiotics from different groups.

Contributors: K. Gururaj & V.K. Gupta



Post harvest technology for increasing income of goat producers

Institute has developed goat meat based value added products for augmenting higher income generation to goat keepers. The product has quality animal protein, and high sensory characteristics with good keeping qualities and highly nutritious.

Contributors: V. Rajkumar & A.K. Das



CIRG Murukku



CIRG Nimkee

Product	Yield	Water Activity	Protein	Moisture	Ash	Fat	Carbohydrate
Murruku	72.98	0.42	16.42	6.77	2.23	21.60	52.97
Nimkee	89.86	0.35	13.10	5.84	3.01	34.18	43.87

MoU signed

A Memorandum of Understanding (MoU) with the National Research Development Council (NRDC), New Delhi has been signed. The NRDC will help the institute in commercializing the technologies generated by the institute scientists. In first phase, two technologies viz "Bruchek: A Dot Elisa Kit for detection of Brucellosis in goats and sheep" and Plate ELISA kit for diagnosis of Johne's disease has been transferred to NRDC for commercialization.

Contributor: V.K. Gupta

"Modern-biotechnology provided ascertained solutions of animal health care and treatments of infectious diseases"

Selective breeding: an effective tool for improving performance of Muzaffarnagari sheep

Muzaffarnagari sheep is the heaviest and tallest mutton breed of India, which is known for higher growth rate and better feed conversion efficiency. The home tract of the breed is and around Muzaffarnagar district of western Uttar Pradesh. The wool production is low (1.1 kg) with hairy fibres (45%), medullation (>65.0%) and fiber thickness (>40 μ). To improve the mutton production in the country through crossbreeding, AICRP on sheep for mutton production was established in year 1976 at CIRG, Makhdoom. Muzaffarnagari sheep was crossed with exotic rams of Dorset and Suffolk and maintained in semi intensive system of feeding management; nutritional requirements were met from grazing and through minor supplementation. Significant improvement in body weights and wool yield over Muzaffarnagari sheep was obtained in first generation, while crossbred population could not maintain its superiority in subsequent

generations and production performance deteriorated with heavy mortality in the crossbreds. During 1984, the AICRP modified and efforts were directed to exploit the genetic potential of this genotype for mutton production through selective breeding. The breeding rams were selected through a selection index comprising body weight and greasy fleece weight at six month of age. Selective breeding at CIRG improved live weight by 25 to 30 % in this genotype. The efforts are continuously being made to further improve performance through selective breeding. In spite of unique capabilities of the breed, population of this important genotype is invariably declining due to shrinkage of grazing land in its home tract. To conserve genotype and develop elite breeding rams for the genetic improvement at farm as well as in its breeding tract CIRG distributing superior rams in collaboration with state department and other



developmental agencies. At present, CIRG achieved adult male flock live weight 50.0 kg and elite breeding rams are weighing 70.0 kg. The elite breeding rams have 40 % superior breeding value over other rams produced in the project.

Contributors: Gopal Dass, P.K. Rout & R. Roy

Awareness of scientific goat production increasing

A base line survey on thirty four identified goat production practices under major component of breeding, feeding, management, healthcare, value addition of products and marketing was carried out to assess the impact of scientific knowledge dissemination on farmer's awareness and perceptions. Significant improvement of all production practices in adopted villages was observed compared to non adopted villages. Eight practices, namely, vaccination like, PPR, ET, FMD, HS etc., (85.0 %), deworming of animals (87.5%), treatment with medicine (85.0%), scientific housing of goats (67.5%), feeding of dry fodder (65.0%), feeding of concentrate (60.0%), feeding of colostrum in time (less than 1 hr.) (77.5%) and feeding of tree leaves in summer (75.0%) goat farmers were practicing in the operational villages. Framers improved production traits of goats trough the transfer of technology programs of CIRG in operational villages. The impact on goat rearing, even in operation area was not up to our expectation, after withdrawal of transfer of technology programs. The constraints for successful goat farming identified as follows:

Constraints in successful goat farming (n=100)

Constraints	Percentage of individuals
1. High mortality	49
2. Non-availability of medicine	56
3. Non-availability of Vaccine	68
4. Non-availability of elite germplasm	70
5. Non-availability of credit	63
6. Poor attitude of department personnel	55
8. Unorganized marketing	34
9. Insurance problems	84
10. Scarcity of feed and fodder	61
11. High cost of feed and fodder	47
12. Unavailability of common pasture	43
13. Poor situation of pasture	48
14. Low price of goat milk	44
15. Disease management	76

Contributors: Vijay Kumar, Brij Mohan & K. Singh

Integrated development project (NAIP-3) in Bundelkhand

The Bundelkhand region of Central India is a semi-arid plateau that encompasses in seven districts of Uttar Pradesh (Chitrakut, Banda, Jhansi, Jalaun, Hamirpur, Mahoba and Lalitpur) and six districts of Madhya Pradesh (Chhatarpur, Tikamgarh, Damoh, Sagar, Datia and Panna). The Bundelkhand Region is marked by extremes of temperature, reaching the mid to upper 40 degree centigrade during the summer months and dropping as low as 1 degree centigrade in winter. It spreads over about 69,000 km². About 37% of the geographical area of this region is under cultivation and more than 86% of the population is dependent on agriculture crops and livestock. Region has very high variability even within a district regarding in soil, water availability, marketing facility, literacy, rural enterprises, resources and land holding of farmers. Within a district areas are distinguished for different breeds/ grades of livestock. The forests, cultivable waste and barren land occupy more than 50% of the area while permanent pasture and other grazing lands constitute about 9% where as miscellaneous tree crops and grasses cover about 0.7% of the available geographical area. The livestock census 1977 and 1997 indicate an annual increasing trend for major livestock species i.e. cattle, buffalo and goats except the sheep which showed a declining trend of

0.04 % in Uttar Pradesh. The principal rivers are the Yamuna, Betwa, Ken, Bagahin, Tons, Pahuj, Dhasan and Chambal. Notwithstanding the large number of streams, the depression of their channels and height of their banks render them for the most part unsuitable for the purposes of irrigation which is conducted by means of ponds and tanks. The rainfall distribution pattern is irregular. In addition, the growth of private land ownership and over exploitation of natural resources of lands have led to the rapid decline of forest cover, reducing traditional sources of fuel, fodder and food. These factors, combined with limited rainfall and fresh water resources have resulted in low agricultural productivity. Throughout most of the year the residents of Bundelkhand experience acute scarcity of water for agricultural and domestic use. Many farmers of the area are not able to meet their subsistence needs in the absence of goats and other livestock resources. The Bundelkhand region is also characterized by some of the lowest levels of per capita income and human development in the country. Literacy levels are poor, especially among women, and infant mortality is relatively high. Land holdings in the region are very meager and agriculture practices are, in general, poor. Majority of rural poor are not getting nutritionally bal-

anced food. Temporary and long-term out-migration of the families from rural villages in search of alternative sources of livelihood has become increasingly common in the region. Under NAIP project, an integrated development program is in operation to increase livelihood security of rural poor's of Buldelkhand region through technologies interventions of agriculture and animal production.

Contributor: Saket Bhusan

“Integrated development programs involving holistic technical intervention is the need of resource poor farmers in India”



Plant bioactives for healthy ruminants

The medicinal plants and herbs have been used for many years in the treatment of various diseases in human and animals. Plant bioactive molecules are also being explored in animal feeding as the growth promoting feed additives. Use of antibiotics in animal feeds as growth promoters has been banned due to their residues in animal products causing human health consequences because of the development of antibiotic resistance. Plant extracts containing bioactive secondary metabolites are gaining popularity as a substitute of antibiotics in manipulating animal growth, production and development of methane mitigation strategies of ruminant feeding. Various plant secondary metabolites are known for their biological activities such as, antibacterial, antioxidant, anticarcinogenic, antimicrobial, antifungal, analgesic, insecticidal, anthelmin-

tic, anticoccidial and growth promoters etc. Majority of medicinal plants do not have the residual effects. Manipulation of rumen microbial ecosystem for enhancing fibrous feed digestibility, supplementation with essential oil or its compounds has increased ruminal total VFA concentration, which may indicate improved feed digestion. Plant tannins changed dry matter intake. The effects of various phytochemicals and plant secondary metabolites have been observed in ruminant for protecting proteins from degradation by rumen microbes, increasing efficiency of microbial protein synthesis in rumen and decreasing methane emission. Some plant products have antioxidants, antibacterial and antihelmintic agents used for changing meat colour and for increasing n-3 fatty acids and conjugated linoleic acid. Saponin-rich plants such

as quillaja, yucca and *Sapindus saponaria* are increasing the efficiency of rumen fermentation, decreasing methane emission and enhancing growth and also for producing desired nutritional attributes such as lowering of cholesterol in monogastric animals. *Moringa oleifera* leaves has been used as a source of plant growth factor(s), antioxidants, beta-carotene, vitamin C, and various glucosinolates and their degraded products for possible use as antibacterial, antioxidant, anti-carcinogenic and anti-pest agents. Therefore, legume seeds and pods, shrubs, local agro-industrial byproducts or novel pasture species are cheap and widely available and suitable bio-resources for the development of required strategies for sheep and goat nutrition for producing desired and high demanding animal product.

Contributors: Indu Chaturvedi & T.K. Dutta

Extension and farmers education programs

Institute organized several training programs to farmers and training to trainers for community development. Following programs were organized by the Institute. 1. National Training Programs of 10 day duration of 40th from August 26- September 4, 2009, 41st from November 10-19, 2009 and 42nd from February 16-25, 2010 on Commercial Goat Farming. The participants from U.P. (69), Haryana (21), Punjab (1), Chandigarh (1) Bihar (11), Delhi (3), Andhra Pradesh (3), Maharashtra (8), M.P. (18), Uttarakhand (4), Karnataka (1), Chhatisgarh (17), Jharkhand (2), Gujarat (1), Delhi (2) and West Bengal (1) participated. 2. Ten days training program on September 7-16, 2009 for Livestock Extension Officers was organized under ASCAD Scheme of Animal Husbandry Department of Uttar Pradesh. This course was attended by 17 officers from 10 districts of Uttar Pradesh. 3. Ten day training program on October 5-14, 2009 for Livestock Extension Officers was organized under

ASCAD Scheme of Animal Husbandry Department of Uttar Pradesh. In this training course, 10 participants from 10 districts of Uttar Pradesh attended. 4. A 10 days training programme was organized on Commercial Goat Farming for Indo-German Barren Soil Reclamation Programme for Udaipur (Rajasthan) from October 21-30, 2009. In this training programme, 20 goat farmers from Rajasthan participated. 5. Organized and conducted a 10 days training programme on December 7-16, 2009 for Livestock Extension Officers under ASCAD Scheme of Animal Husbandry Department of Uttar Pradesh. In this training course, 18 participant livestock extension officers from 10 districts of Uttar Pradesh participated. 6. Organized and conducted a 10 days training programme on December 7-16, 2009 for Livestock Extension Officers under ASCAD Scheme of



Animal Husbandry Department of Uttar Pradesh. In this training course, 18 participant livestock extension officers from 10 districts of Uttar Pradesh participated. 7. Organized and conducted a 10 days training programme on 4-13 January, 2010 for Veterinary Officers under ASCAD Scheme of Animal Husbandry Department of Uttar Pradesh. In this training course, 10 participants attended this training programme from 10 districts of Uttar Pradesh. 8. Organized and conducted a 3 days training program on Scientific Goat Rearing for farmers from Urmool Satu Sansthan, Bikaner (Rajasthan) on 5-7 March, 2010.

Intellectual property development

Institute filled several patents on nutrition and health, name of the invention and inventor as under: 1. Novel herbal anti-diarrhoeal drug for animals - Dr Ashok Kumar; 2. Bruchek: A Dot Elisa Kit for detection of Brucellosis in goats and sheep -Dr V. K. Gupta; 3. BRULISA: plate ELISA kit for diagnosis of brucellosis in goats and sheep- Dr V.K. Gupta; 4. Herbal anticocidal drug "Herbicox" -Dr D.K. Sharma; 5. Plate ELISA kit for diagnosis of John's disease-Dr S.V. Singh; 6. Use of herbal plant material and extracts to prepare emulsion based functional goat meat products-Dr V. Rajkumar; 7. Preparation of Goat Meat Murukku: a crispy food product-Dr V. Rajkumar;

8. Goat Meat Nimkee: a snack food-Dr. A.K. Das; 9. Process for preparation of arurvedic butter, paneer and cheese-Dr. V. Rajkumar; 10. Process for preparation of ayurvedic flavoured milk and whey drink-Dr V. Rajkumar; 11. Process for preparation of herbal goat meat biscuits- Dr V. Rajkumar; 12. Goat Meat Bengal Gram Vada-Dr V. Rajkumar; 13. Goat milk fat and its use as fat substitute in emulsified goat meat products-Dr A.K. Das.

Contributor: V.K. Gupta



Promotion of Rajbhasha

Rajabhasha Hindi Karyashala was organized by Rajabhasha Cell of the Institute. Director of the Institute in his inaugural address emphasized to work more in hindi for promotion of our mother tongue to express views efficiently and effectively for common understanding. On 16th August 2009, institute received "Rajshri Tondon Rajbhasha Award" for year 2008. The 1st prize was received by Director of the intitute Dr. M.C. Sharma and I/C, Hindi cell Dr H.A. Tiwari.

Summer school organized

A summer school on "Advances of nutritional management and post harvest technologies for improved goat production" was organized from 4 to 24 August 2009 to disseminate the recent research developments on nutritional management and post harvest technologies in goat production among research and development professionals of the country to augment better goat productivity for higher income generation to goat producers and goat entrepreneurs through production and product processing technology. A total of 21 participants across the country participated. Dr. O. P. Dhada (Ex- ADG, AN&PICAR) inaugurated the summer school, while Dr.M.C. Sharma, Director apprised recent developments of goat production and product processing. Dr.U.B. Chaudhary, Head and Course Associate Director, Nutrition Feed Resource and Product Technology Division made the course a great success by his sincere and laborious affords during 21 days course. The Chief guest of valedictory function Dr.M. L. Madan (Ex- Vice chancellor) Pandit Dindayal Upadhyay University of Veterinary Science & Cattle Research, Mathura appreciated the affords of Institute's faculty on goat production and processing, interacted with participants, distributed certificates and blessed participants to render good services to poor goat produces of India.



Distinguished visitors

Following dignitaries visited the institute; Namely, Dr. C.D. Mayee, Chairman ASRB New Delhi visited on 17.7.2009; Prof. (Dr.) R.N. Sreenivas Gowda, Ex- V.C., Karnataka Veterinary Animal & Fisheries Sciences University (KVAFSU), Bidar and Chairman QRT on 23.07.2009; Prof. (Dr.) M.N. Razdan, Ex- Dean-HAU, and member QRT on 23.07.2009; Dr. Apurba Chakraborty, Director of Research (V), Guwahati and member QRT, Assam on 24.07.2009; Dr. Mangala Rai, DG, ICAR on 29.07. 2009; Dr. S. Ayyappan, DDG (AS&FY), ICAR, New Delhi on 24.09.2009; Dr. S.P.S. Ahlawat, Vice Chancellor, Vikram University Ujjain (M.P.) on 10.11.2009; Dr. N. Balaraman Ex-Vice Chancellor, Tanuvas Chennai on 14.11.2009; Dr. Arun Varma, Former ADG ICAR, and Chairman RAC on 07.12.2009; Dr. K.P. Agrawal, Former National Coordinator, NATP, Delhi on 04.01.2010; Dr. N.K. Tyagi, Member, ASRB, Pusa, New Delhi visited the Institute on 26.03.2010.



Republic Day Celebration

Institute celebrated the 61st Republic day with devotion, sincerity and joy. Dr. S.K. Jindal, Acting Director of the Institute in his inaugural address encouraged the staff to work hard with sincerity and devotion to enhance livelihood status of goat keepers .

Goat net mailing

Goat-net mailing list server. A mailing list server was created named "goat-net@cirg.res.in". This mailing list server is in operation for discussion and dissemination of information on goat husbandry. Farmers and other stakeholders are visiting CIRG for seeking consultancy and services. Institute provided services to 769 visitors for goat production. Prospects of goat farming attracting peoples from different sectors with variable backgrounds and professions such as farmers, lawyers, service personnel, students etc.

Promotions

Dr M.C. Sharma, Director CIRG selected as Director IVRI

Dr V.K. Gupta, Senior Veterinary Officer selected as Senior Scientist, IVRI

Dr P.K. Rout, Senior Scientist selected as Principal Scientist

Dr T.K. Dutta, Senior Scientist selected as Principal Scientist

Dr U.B. Chaudhary, Senior Scientist selected as Principal Scientist

Dr D. K. Sharma, Senior Scientist selected as Principal Scientist

Dr Puneet Kumar, Senior Scientist selected as Principal Scientist

Dr Braj Mohan, Senior Scientist selected as Principal Scientist

Joining

Dr Devendra Swarup, joined as Director CIRG

Dr R.V.S. Pawaiya, joined as Principal Scientist

Dr M.K. Tripathi, joined as Senior Scientist

Transfer

Dr Ajoy Mandal, Senior Scientist (AG&B) transferred to NDRI, Kalyani

“CIRG Nimkee” Good news for traditional meat snack processors!

Meat is a valuable source of protein of high biological value, important micro-nutrients and vitamins of B group. Being lean (high protein and low carbohydrate) goat meat contributes to a low glycaemic index that is assumed to be “beneficial” with respect to obesity, development of diabetes and cancer. However, meat being a perishable food needs refrigeration for storage and has limited shelf life. Therefore, present innovation relates to a technology that preserves meat product for longer period without refrigeration. Product processing requires low initial capital investment. Commercial food products including high carbohydrate and low protein based snack foods are available to the consumers in the present Indian Food Market. These products often lack in optimum protein level. Therefore, snack food industry continually search for products and processes that are increasingly liked by the consumers and address nutritional concerns. The goat meat “Nimkee” can be a cost effective commercially and nutritionally viable answer to it.

The technology for preparation of Goat Meat Nimkee- a shelf stable meat snack was developed to address the nutritional concerns of the snack foods. The product is rich in animal protein (14%), high dietary fibre (8%) and fortified with natural herbal based bioactive compounds. It is a classic functional goat meat snack product with no trans fat, no added MSG and less cholesterol. The cost of production of 100 g of Goat Meat Nimkee is only Rs. 10. The technology is very simple, suitable for small scale industries and



commercially viable. This product can be safely stored at room temperature for 6 months in nitrogen flushed packing.

The product is currently available at institute and the consumer demand is very much positive and promising. Central Institute for Research on Goats has filed provisional patent for this consumer and industry friendly technology.

Goat milk “Shrikhand”

Jakhrana goat milk (4.0% fat) was transferred to a stainless steel container through a muslin cloth, heated to boiling and cooled to 30°C. Starter culture was added at 1.0 percent of milk, incubated at 30°C for 10 to 12 hours. After incubation semisolid contents (curd) were transferred to another stainless steel container through a clean and moist muslin cloth. The muslin cloth containing the curd was given a shape of bag and hung on a stand to facilitate the draining of whey. A semi solid mass (chakka) was obtained and weighed, and then transferred to a mixer. Good quality sugar was added at the rate of 40% of the weight of chakka and homogenized. Addible colour and nuts were added to enrich the product. The weight of Shrikhand was recorded and packaged in polystyrene cups and stored under refrigerator for use.

Contributors : R.B. Sharma & Hemant Bharadwaj



Dr K.M.L. Pathak : New Deputy Director General (Animal Science)

Dr K.M.L. Pathak has joined at ICAR head quarter as Deputy Director General (Animal Science) on 28 January 2010. Before joining Head Quater, Dr Pathak was holding the position of Director, National Research



Centre on Camel, Bikaner. Dr Pathak, a renowned Veterinary Parasitologist did his Masters in 1979 and doctorate in 1982 in Veterinary Parasitology from G.B. Pant University of Agriculture and Technology, Pantnagar and Post-doctorate in 1993 from Salford University, UK. Dr Pathak has 29 years of professional experience in research and teaching. He visited Netherlands, Brasil, Switzerland, UAE, France, South Africa and Japan for scientific meeting and international linkages for the development of Veterinary and Animal Science education and research. Dr Pathak is a member of WHO working group on "Echinococcosis" and of OIE ad-hoc working group on "non-tsetse transmitted animal trypanosomosis".

He is Vice-President of the International Zoonoses Association of Asia and Local Secretary of the Royal Society for Tropical Medicine and Hygiene, London. Dr Pathak, received the Commonwealth Academic Staff Fellowship from the British Council, UK in 1992. He is also the recipient of Dr Rajendra Prasad award, Dr B.V. Rao gold Medal, Dr R.S. Swaminathan Iyer Memorial Award, Smt. Nishamani Parija Oration Award for the commendable achievements in Veterinary Research. We are confident that Dr Pathak's vision will provide new insight of animal science research and education and under his leadership animal science division will achieve new heights of research and developments.



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