



CIRG news

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ICAR-Central Institute for Research on Goats
(An ISO 9001:2008 Certified Organization)



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Published by Director,
ICAR-Central Institute
for Research on Goats,
Makhdoom, Farah-
281122, Mathura (U.P.)
India
<http://www.cirg.res.in>

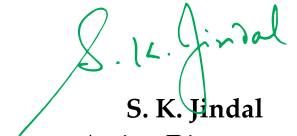
From the Director's Desk

The goat sector has far reaching implications for the rural poverty, rural employment, women empowerment, youth involvement, female and child nutrition, protein hunger, soil quality management and production system sustainability as well as ecosystem stability. Exploitation of goat production to its full potential offer great scope but has not been efficiently utilized to its inherent capacity of revenue generation, value addition and marketing. Endemic diseases (foot and mouth disease, goat plague (PPR and goat pox) and a high incidence of endoparasites, coupled with poor access to preventive and curative health care, result in a high mortality rate (35-45 per cent in the field condition). The low productivity of goats is also due to lack of awareness about superior quality breeds, inadequate feeding caused by complete dependence on free grazing, lack of preventive health care, and poor connectivity to markets. The adoption of good goat management practices along with value chain development can transform small goat keepers, including women, into micro entrepreneurs and pave the way for accelerated development of the weaker sections. India is the world's second largest producer of goat meat, second only to China. Goat husbandry has been the focus of attention in recent decades due to the medicinal properties of goat milk and consistent demand for chevon in India. CIRG scientists have emerged as important resource personnel in disseminating the knowledge, experience and know-hows of goat rearing to goat farmers from small landless to commercial large scale. CIRG has recently kick started the 'Mera Gaon Mera Gaurav' scheme involving all the scientists for adoption of villages. With the infusion of positive energy among the scientists, the villages have been identified and developmental works are undertaken by the team members under the scheme. The institute organized 'Farm innovator's day' to motivate goat farmers for their innovations and technologies in goat rearing. This programme was attended by chief guest Dr. Suresh S. Honnappagol, Animal husbandry commissioner. The institution was energized and honored with the visit of Hon'ble Minister of State for Agriculture and Farmers Welfare (Government of India) Dr. Sanjeev Kumar Balyan on 18th September 2015 at ICAR-CIRG Makhdoom. We are indeed inspired by his commitment for agriculture research and support for farmers in India. With the new energy CIRG is destined to make significant impact qualitatively and quantitatively in terms of increased goat milk and meat production in the country and improving the quality of life of millions of goat farmers and stakeholders in the



country. ICAR-CIRG has become favourite knowledge provider for interested entrepreneurs as evidenced by increasing farmers visit to the institute and growing numbers of trainees for our training programmes on 'Commercial Goat Farming'. The Institute has undertaken several new initiatives in the area of value chain analysis, goat enterprise and market development planning and policy analysis to help the goat farmers in a more effective

and sustainable manner. I hope the Institute will be a harbinger to improve rural food security and enable rural men and women to overcome poverty in the country and generate rural employment.



S. K. Jindal
Acting Director

Novel visual LAMP for quick detection of epidemic abortions caused by *Brucella melitensis* in Goats

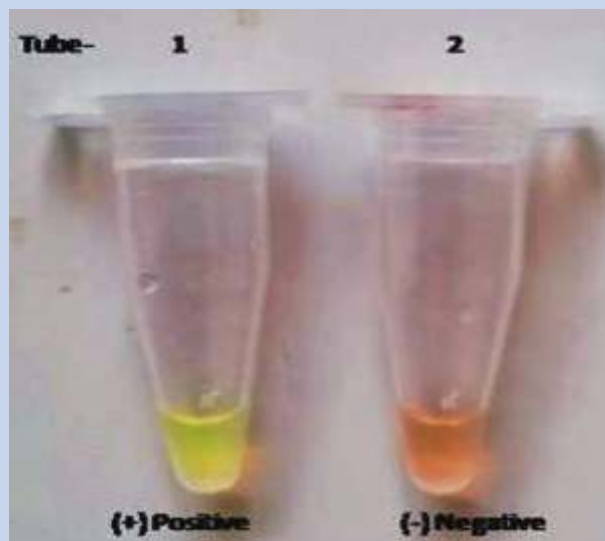


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Abortions in goats cost dear and affect the valuable crop, with Brucellosis being significant causing abortion storms during late gestations. Goat being an animal with high fecundity, next to only pig, has more value in terms of the crop per year, that can be coped up with the input costs for expanding the enterprise in an efficient manner. In a farm set-up, abortions gradually aggravates owing to poor management and knowledge or ignorance with hidden economic losses. However, if diagnosed properly, animals with carrier status and early stages of infection can be detected and excluded from breeding. In the Division of animal health we have developed a novel visual Loop mediated isothermal amplification (LAMP) that can aid the detection of positive samples by a change in colour from pink to apple green. Unlike conventional

PCR, the LAMP technique doesn't require costly equipments like thermocycler or gel electrophoresis and gel documentation. The isothermal amplification can be done in a dry bath or water bath set at 60°C with an incubation time of 45 minutes. This technique was highly sensitive that the infection cannot be missed out even in animals with early infection containing *Brucella* DNA as low as 10 femtogram [1 femtogram being 9 orders of magnitude (10^9) lesser than that of microgram]. The diagnostic capability of detection of Brucellosis in the field samples was also enriched by limit of detection (LOD) assay. The LOD was performed by spiking known *Brucella melitensis* bacilli into various clinical samples such as vaginal washings, preputial washings, foetal contents, milk etc., and the LOD was found to be 3×10 cfu/ml. This test has a specificity of 98 per cent compared to iELISA. This novel visual LAMP technique has the potential to fill the gap between the serological assays and high end referral tests including probe based qPCR assays combining quick detection, high specificity, high sensitivity, LOD and user-friendly protocol.



Expression of androgen and estrogen receptors in male reproduction



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Androgen is one of its kind of steroid hormones in male animal body that exists mainly in the form of testosterone and dihydrotestosterone (DHT), which plays an important role in maintenance of the male signs as well as in the growth and development. The development and function of male sexual organs are mainly regulated by androgen and estrogen, which is a steroid hormone synthesized in ovary and testis. It regulates a variety of functions in vertebrates, including reproductive, immune, and central nervous systems. There are meagre reports on the biological roles of estrogen in vertebrates, especially in reproductive performance. The physiological functions of androgen and estrogen can be achieved only through their receptors viz. androgen & estrogen receptors. Androgen receptor gene (AR) and estrogen receptor gene (ER) are members of nuclear

hormone receptor family. AR gene mutation or deletion can cause developmental abnormalities in male reproductive organs or infertility. Estrogen has an important effect on the development and function of the male reproductive organs. Transgenic experiments have evaluated that the testes of ER α knockout male mice are significantly smaller than those of wild-type mice, and the seminiferous epithelium shows thinning, sperm count and animals mating reduces which leads to decreased fertility. Experiments of our study on male reproduction establish that estrogen receptor expression varies widely in different tissues. This expands our understanding of estrogen receptors responsiveness in tissues. In particular, the finding that the head of epididymis has the highest level of expression among the organs studied validated that ESR1 play a role in spermatogenesis and male fertility. Moreover, genotypic effect of ESR1 also showed different genotypes which indicates association of estrogen receptor gene in goat breeds. This further supports the candidacy of ESR1 gene to be used in selection of fertile breeding goat bucks.

Chlamydiosis in Goats



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Chlamydial infections in goats are responsible for arthritis, keratoconjunctivitis, respiratory diseases and most important one, abortion. Abortion in goats is caused by *Chlamydia abortus*. In many areas, chlamydial abortion is the second cause of infectious abortions after brucellosis, and the main cause where brucellosis is controlled. The abortion is generally seen during the last months of pregnancy with stillbirths or premature births of weak kids with low birth weight. The abortion affected doe generally does not show clinical signs, and the placenta is usually not retained. Fertility of the does usually remains normal after the subsequent abortions. Infected doe excretes a large number of *Chlamydiae* in placenta and fetal fluids at the time of kidding and abortion. *Chlamydiae* may come in vaginal fluids for a period of two weeks before, and after abortion. *Chlamydiae* gain access to fetus and placenta

through intestine, genital tract and conjunctiva. The placenta of aborting does is very precious for diagnosis of the chlamydiosis. Presumptive diagnosis of the disease can be done by demonstration of elementary bodies in impression smear using special stains such as Giemsa, Stamp, Macchiavello, modified Ziehl-Neelsen etc. The confirmatory diagnosis can be done by isolation of the organism in cell culture or in embryonated eggs, ELISA, IFT, CFT, PCR etc. Oxytetracycline (long acting; @ 20 mg/kg of body weight on every 3rd day) or tylosin (orally; 20 mg/head/day) significantly reduce outbreaks of chlamydial abortions. For prevention of occurrence of chlamydial abortions, all biological materials associated with the abortion (fetus, placenta, fluids etc.) should be removed, and properly disposed off. The concerned area should be made sterile. The aborting females should be separated for several weeks until they stop shedding *Chlamydiae*. Contamination of feed and water with the soil must be avoided. Transmission of the disease from animal to man is well known for *C psittaci*, *C abortus* and *C felis*. Likewise, chlamydial species of man (*Chlamydia trachomatis*) has been detected in numerous animal species.

Polymorphism and genetic similarity within different breeds of goats at molecular level



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The four polymorphic random primers i.e. PI₁₄, PI₁₈, PII₁₁ and PII₁₄ were used for further analysis using individual DNA samples from each of the five goat breeds i.e. Marwari, Sirohi, Barbari, Jamunapari and Jakharana. Two primers i.e. PI₁₈ and PII₁₁ detected polymorphism within all the five goat breeds however all the primers could not detect polymorphism within all the breeds. Primer PII₁₄ could detect polymorphism within four breeds of goat except produced monomorphic RAPD profile within Jamunapari. Similarly primer PI₁₄ produced polymorphic RAPD profile within Sirohi, Barbari and Jakharana breeds but monomorphic RAPD profile within Jamunapari and Marwari breeds. From 4 polymorphic primers, total of bands amplified in Marwari, Sirohi, Jamunapari, Barbari and Jakharana breeds were 30, 31, 23, 30 and 33, respectively. The proportion of polymorphic bands in these five goat breeds was 33.33 %, 38.70 %, 17.39 %, 37.50 % and 33.33 % respectively. Ghosh et al. (2001) observed limited, but easily detectable DNA polymorphisms among different

Indian goat breeds. Li et al. (2002) reported out of 76 fragments amplified by 8 primers only 44 fragments (57.89 %) were polymorphic among three populations of goat.

Within line genetic similarity as band sharing proportion and band frequency estimated from 4 polymorphic primers. The magnitude of the within breed genetic similarity for these breeds differed with the primer used. The band sharing estimates for Within breed genetic similarity ranged from 0.874 to 0.947 in Barbari, 0.808 to 0.973 in Sirohi, 0.865 to 1.000 in Jamunapari, 0.880 to 1.000 in Marwari and 0.796 to 0.937 in Jakharana. The overall Within-Breed genetic similarity pooled over primers was 0.907, 0.899, 0.949, 0.924 and 0.862 in, Barbari, Sirohi, Jamunapari, Marwari and Jakharana respectively. While Jakharana showed minimum within breed genetic similarity, Jamunapari showed maximum within breed genetic similarity. The overall within breed genetic similarity pooled over primers was 0.890, 0.803, 0.935, 0.892 and 0.832 in Marwari, Sirohi, Jamunapari, Barbari and Jakharana breeds respectively. While Sirohi showed minimum within breed genetic similarity, Jamunapari showed maximum Within-Breed genetic similarity. Anbarasan et al. (2001 & 2002) reported very high within breed genetic similarity (0.84-0.92) within 4 goat breeds.

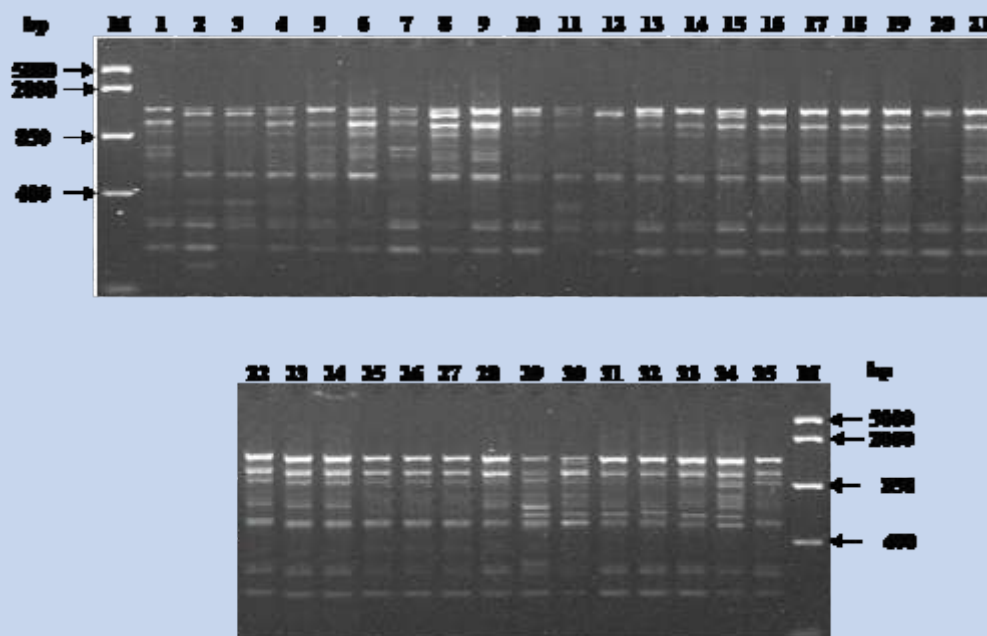


Fig 1: RAPD profiles from individual DNA samples of different goat breeds with random primers PI 18 (Lane 1-7: Barbari, lane 8-14: sirohi, lane 15-21: Jamunapai, lane 22-28: Marwari, Lane 29-35: Jakhrana)

Production of Caprine tetraploid embryos by electrofusion



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In vertebrates, each chromosome of most somatic cells is paired with one sister somatic chromosome or with a sex chromosome to form a diploid genome. As a result of cell fusion or mistakes during cell division, cells and occasionally whole organisms can become polyploid wherein then ploidy of the genome accumulates several multiples of the haploid genome number (n). Spontaneous duplication of the mammalian genome occurs in approximately 1% of fertilizations. As a research tool, polyploidy embryos may provide useful insights into normal development. Because spontaneous embryonic tetraploidy is rare, tetraploid animals must be generated experimentally to determine the effect of polyploidy on growth and development. The molecular mechanisms governing specific cell type resistance to polyploidy remain unclear. Most often, divergence of ploidy from the diploid (2n) norm results in a disease state. Complete tetraploidy, as a general rule, is not compatible with normal development and viability. Various physical and chemical methods have experimentally induced tetraploidy in mammals. Tetraploidy can be achieved by Sendai virus infection,

Chytochalsin B, surgically adding a diploid nucleus to a zygote, by duplicating the genome without cell division using inhibitors of cytokinesis, or by application of an electric field. As the development by electrofusion avoids the possible toxic effect of the other methods on embryos, it has become most popular due to its easy use and has many applications in various embryological experiments. The aim of this study was to assess the developmental potential of Caprine 2-cell in-vitro fertilized embryos subjected to electrofusion. Embryos selected at the 2 cell stage between 24 and 30 hrs post insemination, were equilibrated in fusion medium (D (+) Mannitol (0.3M), MgSO₄.7H₂O (0.1mM), CaCl₂.2H₂O (0.05mM), HEPES (0.5mM), BSA (1mg/ml)) for 30 seconds before they were placed individually between two platinum electrodes of a microslide fusion chamber (0.5mm) filled with fusion medium. An alternating current pulse of 5V for 5 sec was given to align the blastomeres in parallel with the electrodes following a single direct pulse of 1.0 kv/mm to fuse the blastomeres together using BTX Electrocell Manipulator. After 1 hr of incubation, the fused embryos were selected and further cultured in microdrops of RVCL/mCR2aa medium under mineral oil at 38.5°C with 5% CO₂ in humidified atmosphere. After 48 hr of incubation, embryos were evaluated under phase contrast microscope for cleavage rate and embryo development up to morula and blastocyst stages.

Honour's, Awards and Recognitions

- ICAR-CIRG stall received Third Prize showcasing goat technologies at Krishi evam Gramya Vikas Pradarshni at Deen Dayal Dham, Farah, Mathura on 9-11 October 2015.
- The Diagnostic technology on 'Taqman probe based OMP31 gene Real time PCR for Brucella melitensis in small ruminants' has been included in the DARE/ICAR achievements-2015 by Director General, ICAR in his letter D.o. No. Secy (DARE) & DG (ICAR)/2015/dated 30.12.2015. This technology was developed by scientists, Dr. K. Gururaj, Dr. V.K. Gupta and Dr. RVS Pawaiya of the Animal Health Division, ICAR-CIRG, Makhdoom.



Conservation of Sorghum fodder as silage for Goats



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Multi-cut sorghum fodder crop is generally sown in summer season. During the summer season its fodder yield gives very valuable support to goats for their fodder needs, however at later stage of monsoon in semi-arid areas, there are lots of seasonal vegetation grown up at grazing site i.e. fallow lands as well as waste lands which is utilized by the goats as their feed under semi intensive system of goat rearing. During Monsoon goat fulfils their green fodder requirement from the grazing of lush green pasture, it leads low consumption and no consumption of cultivated green fodder. On the progress of monsoon season, the sorghum biomass gets mature and



deteriorates in nutritional quality. Therefore, conservation of sorghum fodder in the form of silage not only provides fodder biomass during post monsoon season but also improves nutritional attributes. Experimental observations have demonstrated that after the period of adaptation, silage was relished and well consumed by goats at CIRG, Makhdoom with dry matter intake 2.91% of live body weight.

Muzaffarnagari Sheep – An Excellent Mutton Breed of India



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Muzaffarnagari, the heaviest sheep breed of India, has its breeding tract in Muzaffarnagar and its adjoining districts of Western Uttar Pradesh. The breed has also penetrated in some parts of Rajasthan, Haryana and Delhi states due to its high adaptability and tremendous growth potential. The animals of this breed are mainly reared for mutton production as wool production is quite low with coarse quality, thus not suitable for manufacturing any kind of carpets. Under Network Project on Sheep Improvement, a research project entitled “Genetic evaluation and improvement of Muzaffarnagari sheep for body weights” has been in operation at CIRG, Makhdoom since 1992 to improve the breed for higher body weights through selective breeding. The overall flock average of



6 and 12 month body weights have increased from 20.0 to 26.0 (6.0 kg or 30.0%) and 25.0 to 36.0 kg (11.0 kg or 44.0%), respectively. The growth potential in terms of body weights and average daily weight gain of Muzaffarnagari sheep is highest among all sheep breeds available in the country. Being large sized, the twinning rate is low in this breed but due to proper screening of ewes and rams having records of multiple birth were extensively used in the breeding of animals which has resulted improvement in the twinning rate from 5.0 to 17.0%. In recent past years, few cases of birth of triplet lambs have also been recorded. During year 2011, triplet lambs born from an ewe attained a total of 46.2 and 79.4 kg live weight respectively at 6 and 12 month age and showed additional gain in body weights of 25.1 kg (118.9%) and 49.0 kg (161.2%) over single born lambs. At CIRG, a Muzaffarnagari ram has attained as high as 86.0 kg live weight at three years of age. This ram had 20% extra growth than its contemporaries. In addition to growth and twinning rate, this breed is also very hardy and overall mortality ranges between 2-3% under farm conditions. Thus, Muzaffarnagari sheep is fulfilling all characteristics of an excellent mutton breed like higher growth, twinning rate, hardiness etc.

Integrated Goat Farming: A Tool for Sustainable Livelihood Security in Rain-fed Regions of India



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Bundelkhand is one of the least developed regions of central India with low per capita income and substantial out migration (40 %). Gently sloping upland, distinguished by barren hilly terrain with sparse vegetation, scanty rainfall and its uneven distribution, lack of irrigation resources, run-off of rain water, depleted ground water resources, top soil erosion, low productivity of crops and livestock species, scarcity of feed- fodder and very poor adoption of technologies are important reasons for its livelihood insecurity. Crop farming quite often realized with negative income due to recurring draughts. A study was conducted in participatory mode by involving more than 870 farmers to develop goat based integrated livelihood models to address issues of rural livelihood particularly for rain-fed Bundelkhand and other such regions of India under NAIP- comp-3 project. Innovative/improved goat



rearing, poultry, fodder crop, pulse production and capacity building of villagers were major interventions. Under goat farming superior germ-plasm, concentrate ration, prophylactic measures, mineral mixture, low cost goat shelter, cooperative goat farming, kids nursery farms and smart marketing were provided to farmers. Chicks under poultry and seeds/seedlings under fodder and pulse crop production were also made available to farmers for adoption of technologies. Following livelihood models for different categories of farmers were developed based on adoption of implemented interventions and their performances.

Recommended Goat based Integrated Livelihood Models for Rain-fed Regions

Model	Unit(s)	Net income (Rs)	Suitability
Goat+ Poultry	15 adult F+ 25 chicks	Rs 82,727 (71,115+11,612)	Landless Marginal
Goat+ Cow+ Poultry+ Crops (rain -fed)	10 adult F+ 2 cows + 50 chicks + 1 ha.	Rs 1,00,634 (47,410+22,000+ 23,224+8,000)	Landless Marginal Small
Goat+ Buffaloes+ Cows+ Crop (semi -irrigated)	5 adult F + 2 buffaloes+ 2 cows + 2 ha.	Rs 1,09,705 (23,705+34,000+ 22,000+30,000)	Marginal Small Medium large
Goat Buffaloes Cows Crop (semi -irrigated)	10 adult F 2 buffaloes 2 cows 2 ha.	Rs 1,19,000 (47,410+32,000+ 22,000+30,000)	Semi-medium Medium Large

A goat has secured a sought-after role in the British Army after a gruelling selection process led to him being appointed to a key position in the Royal Welsh Regiment.

Source : http://mashable.com/2016/01/22/regimental-goat-appointed-british-army/?utm_source=inshorts&utm_medium=inshorts_full_article&utm_campaign=inshorts_full_article#sR3AjcXM6iqh



Black Bengal Breed of Goat: Black Diamond of India



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The Black Bengal breed of goat is considered as one of the best meat breed of the tropics due to high prolificacy, high feed conversion efficiency, lower age at first kidding, excellent skin quality and high adaptability to hot-humid climate. The main coat color of Bengal goat is black.



However, these goats are also found in two other coat colour i.e. white and brown. The pure-bred goats are mainly available in the islands of Sunderban of West Bengal state of India and in Bangladesh. Black Bengal goats are also prevalent in Bihar, Jharkhand, Orissa, Assam, parts of Madhya Pradesh, Chhattisgarh, Tripura and North-Eastern Hilly regions (Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Tripura, Mizoram, Upper Assam) of India. Bengal goats are also found in other neighboring countries like Bangladesh, Bhutan and Nepal. These goats (>97%) are mainly maintained on zero-input in small (2-5) size flocks (>65%) mostly maintained by women and children and contributing as significant secondary source of income ie (Rs 12000 to 30000 per household per year).

Major phenotypic and production characteristics of Bengal goats are presented below:

- Size: Small (dwarf)
- Coat Colour: Predominately (80%) black followed by brown and white.
- Face profile: Concave (depressed)
- Ears: Short, flat and horizontally placed.
- Horn: Stumpy directed upward and backward
- Body Weight at 9 months: 10-14 kg.
- Height at withers at adulthood (9 month): 45-55 cm.

- Udder: small
- Age at first kidding (AFK): 10-12 month
- Multiple births: 65-85%.
- Milk yield: 0.2 kg/d with 20-30 litre/ Lactation
- Lactation period: 40-50 days.



The potential of Black Bengal breed, however, had never been expressed to optimum level due to subsistence management. Unavailability of genetically superior and pure-bred bucks is major constraint in field conditions as majority of high potential males with better growth rate castrated at one to two months of age. Higher pre-weaned mortality ranges from 10 to 25% in kids is another limiting factor of Bengal goats. Economic studies on relative breed performance indicated that under proper management conditions, net profit from Bengal Goats is Rs. 6000 per year which is higher than breeds of north- western region.

Strategies for Improvement

Breeding strategy for goat improvement should be framed considering overall productivity and economic efficiency in relation to local environment. Trait(s) of local importance (adaptability, resistance, reproduction etc.) should not be diluted through crossbreeding. Technological interventions suitable to different management and farming systems should be made popularized among stakeholder. Availability of potential purebred bucks should be ensured for farmers and sell/castration of high potential males for slaughter minimized. Capacity building of goat keepers has to be done for supplementation of concentrate ration, adopting improved breeding practices, health prophylaxis and smart marketing along with data recording on performance traits. Goat keepers should be made aware and exposed for proper marketing places and agencies. Self-help groups of goat keepers may play an important role in fetching higher price.

Extension and Farmer's Education Programme

Farmers' Training Organised

- 63rd National Training Programme (10 days) on Scientific Goat Farming from 18th - 27th August 2015. In this training programme 72 participants attended from 11 states.
- 64th National Training Programme (10 days) on Scientific Goat Farming from 27th October to 5th November 2015. This training programme was attended by 44 participants from 9 different states of the country.



Exhibition/Kisan Mela Participated

- Participated in Agriculture Exhibition in Bihar on 20-21 August 2015 at Motihari, Bihar.
- Showcased goat production technologies on the occasion of Annual Review Meet of AICRP on Goat Improvement on 7-8 September 2015 at ICAR-CIRG Makhdoom.
- Goat production technologies were displayed on the occasion of Farm Innovators' day on 10 September 2015 at ICAR-CIRG Makhdoom.
- Goat production technologies were displayed on account of the visit of Hon'ble Minister of State for Agriculture and Farmers Welfare (GoI) **Dr. Sanjeev Kumar Balyan** on 18th September 2015 at ICAR-CIRG Makhdoom.
- Participated in Krishi evam gramya vikas pradarshni at Deendayal Dham, Farah, Mathura on 9-11 October 2015



Events

● 36th Foundation Day of the Institute

The institute foundation day (36th) was celebrated on 13th July 2015. The foundation day kickstarted with plantation of trees by the Director, Dr. S.K. Agarwal with participation of all the staff of the institute. The Director highlighted the scientific achievements of the institute during the year. He informed that six technologies were transferred to the industries and three patents were filed. He congratulated all the staff for their contribution in ICAR-CIRG being awarded with ISO 9001:2008 this year. On this auspicious day, nine winner participants of Farm School on Air which was broadcasted from Akashwani Mathura from August 14 to January 15 in 26 episodes were awarded. This prize money was sponsored by the Punjab National Bank, Farah, Mathura. The Programme ended with the vote of thanks by Dr. Ashok Kumar.



Events

● ICAR- CIRG signed MOU with Kamdhenu University, Gujarat

ICAR-CIRG and Kamdhenu University signed MOU for research in goat development on 3rd August, 2015 at Gandhinagar (Gujarat). Dr. S. K. Agarwal, Director of Institute and Dr. M. C. Varshneya, Vice Chancellor, Kamdhenu University expressed that the knowledge sharing between the two organizations will improve the productivity of goat. On this occasion, Sri Babubhai Bokhiria, Hon'ble Minister of Agriculture, cooperative and animal Husbandry, Govt. of Gujarat, stated that scientific support of CIRG will be beneficial to the teachers, Students and farmers of the State. This programme was attended by Director Research, Director Extension, Dean of different faculties of the University, I/ C PME and Coordinator, Academic CIRG, Makhdoom, Mathura, Uttar Pradesh.



● Independence Day celebration

Institute celebrated 69th Independence day with devotion and joy on 15th August, 2015. Dr. S.K. Agarwal, Director of the institute in his address congratulated the scientific staff for their contribution in uplifting goat farmers of the country on this great occasion. He encouraged the staff to showcase their hard work with sincerity and dedication to improve the livelihood of goat farmers of the country.



● RAC Meeting

The 21st Research Advisory Committee meeting was held on 20th August 2015. The committee was chaired by Dr. A.K.Mishra, Vice-Chancellor, Maharashtra Animal & Fishery sciences University (MAFSU), Nagpur (Maharashtra). The other members of the committee were, Prof. S.A. Ashokan, Director of Distance Education, TANUVAS, Dr. D.V.Rangnekar, Former programme coordinator, BAIF, Ahmedabad, Dr. B.S.Prakash, ADG (AN&P) ICAR, New Delhi, Dr. Mohammed Nadeem Fairoze, Prof & Head, Department of LPT, Veterinary college, KVAFSU, Hebbal, Bengaluru, Dr. R.K. Tanwar, Ex-director Clinics, CVAS, Bikaner, Dr. S.K. Agarwal, Director CIRG. Persons representing agricultural/ rural interest were Shri. Ashok Rangnath Kale, Ahmednagar, Maharashtra and Shri. K. Venkatesh, Vijay Farms, Villupuram, Tamil nadu and Dr. P.K.Rout, Principal Scientist and I/C PME cell acted as member secretary. The Chairman and Members appreciated programme implemented, activities undertaken and achievements by CIRG. All the scientists of the institute participated in meeting.



● Farm Innovator's Day

Institute organised Farm Innovator's day on 10th September, 2015. Programme started with invocation of ICAR song and garlanding the idol of Goddess Saraswati and lightening of lamp by the dignitaries. Chief Guest of the function was Dr Arvind Kumar, Vice Chancellor, Rani Lakshmi Bai CAU, Jhansi; Dr. Suresh S. Honnappagol, Animal Husbandry Commissioner, GOI and Dr A C Varshney, Vice Chancellor, DUVASU, Mathura as special guests. Dr. S. K. Agarwal, Director, CIRG presided over the function. The function was moderated by Dr. Ashok Kumar, Principal Scientist, Animal Health Division, CIRG. Dr A K Patel, Head, LPM, CSWRI, Bikaner and Dr S K Singh Principal Scientist, AR, IVRI, Izatnagar were invited as Panelists of the function.



Events

He welcomed the Staff of the Institute and the gathering of 113 farmers from different villages of 14 states across the country. The progressive goat farmers cum Entrepreneurs Mr. Venkatesh, Vijay farms, Tamil Nadu; Mr. Deepak Patidar, Ekta Ergonomics, Madhya Pradesh were also invited to share their experiences and success stories of their commercial goat farming. Dr. S.K. Agarwal, Director, CIRG emphasized the importance of these type of interactions between scientist and farmers for better exchange of ideas. Dr A C Varshney in his address expressed satisfaction over the adoption level of available agriculture technologies by the farmers for rural development that increased the farm and family income.

Dr. Suresh S. Honnappagol presented the livestock population and production trends vis-à-vis goat husbandry in India. Dr Arvind Kumar appraised the farmers regarding the medicinal importance of goat milk and requirement of low investments in goat rearing. He further expressed that farmers who rear goats never faced financial crisis. Dr. Ashok Kumar, Principal Scientist, Animal Health Division, CIRG appraised the house regarding the purpose of celebrating the farm innovators day.

● Annual Review Meet of AICRP on Goat Improvement

The XV Annual Review Meet of All India Coordinated Research Programme on Goat Improvement was held at ICAR-Central Institute for Research on Goats (Mathura) on Sept 7-8, 2015. The inaugural session was presided by Dr KML Pathak, Deputy Director General, Animal Science, ICAR, New Delhi. Dr S. K. Agrawal, Director, CIRG, Farah, Mathura welcomed Dr KML Pathak, DDG (AS), Dr R. S. Gandhi, ADG (AP&B), Dr Arjava Sharma, Director, NBAGR, Karnal, Dr SMK Naqvi, Director, CSWRI, Avikanagar, Dr Vineet Bhasin, Principal Scientist, ICAR, all the incharges of AICRP units, I/C AICRP on Goat Improvement and scientists of the institute. Dr S K Agarwal, Director CIRG presented briefly the achievements of this project and the institute. Dr R. S. Gandhi, ADG (AP&B) in his inaugural deliberation emphasised on research on goat improvement through self-help groups, formulation of multiplier flocks, conservation of threatened goat breeds, value addition of goat milk and meat, capacity building of stakeholders and development of package of management practices. Dr KML Pathak, DDG (AS) in his address congratulated the CIRG for the significant achievement of the goat improvement project contributing towards higher productivity in terms of higher body weight gain & milk yield. Following the speech, he released the PC report, CIRG at a glance along with Sirohi Bakari Palan book. The inaugural session ended with vote of thanks by Dr S K Singh, Principal Scientist and I/C AICRP, CIRG, Farah, Mathura. After inaugural session the exhibition was also organised at CIRG wherein all the AICRP centres displayed Breed Photographs, Management, Feeding and Innovations. The PC report was presented by Dr. S. K. Singh, I/c AICRP on Goat improvement. Different field units of AICRP on Goats presented the progress report.



● Hindi Pakhwara

Hindi Pakhwara was celebrated at ICAR-CIRG from 14th to 28th September 2015. The event started with a meeting organized on the inaugural day with participation of all scientists and staff of the institute. It was reiterated that all the official proceedings will be communicated in Hindi. Different competitions were held from 16th to 17th September 2015 and various staff from the institute actively participated and awards were distributed. Shri Rajkumar Singh, Dr. A.K. Dixit and Shri. J.S. Gaithe were awarded 1st, 2nd and 3rd prizes respectively in the Hindi Shruith Lekh competition held on 15th September 2015 as a part of Hindi pakhwara celebrations.



Distinguished Visitors

Dr. S. K. Balyan, MoS, A & FW, GoI

Dr. Sanjeev Kumar Balyan Hon'ble Minister of State for Agriculture and Farmers' Welfare, Government of India visited ICAR-Central Institute for Research on Goats, Makhdoom on 18th September 2015 along with Dr. K.M.L. Pathak, DDG (AS), Dr. A.K. Sikka, DDG (NRM), Dr. A.C. Varshney, Vice Chancellor, DUVASU, Mathura, Dr. Dheeraj Kumar, Director, DRMR, Bharatpur, Dr. D.K. Sharma, Director, CSSRI, Karnal, Dr. B.S. Prakash, ADG (AN&P), Dr. B.V. Singh, ADG (OP) and Dr. S.K. Dubey, Incharge, IISWC, Chalesar, Agra. Dr. S.K. Agarwal, Director, CIRG, Makhdoom highlighted the achievements of the institute in the area of research, transfer of institute technologies to the industries, teaching, training, maintenance of elite germplasm of goat and Muzaffarnagari sheep. Hon'ble Minister and Dignitaries visited goat farms, laboratories and agriculture farm and appreciated their maintenance and progress. He stressed upon making plan for improvement of animal husbandry for enhancing income and employment generation for rural youth.



Delegation from Kenya, Liberia and Malawi

A group of 40 members delegation of extension functionaries from Kenya, Liberia and Malawi visited ICAR-CIRG on 12th August 2015. The delegation was informed about the research work of the institute and its efforts in the field of goat development.

Shri Giriraj Singh, MoS, MSME, GoI

Shri Giriraj Singh, Union Minister of State for Micro, Small and Medium enterprises visited Institute on 4th November 2015. Delegation from feed industry along with Hon'ble Minister and Dignitaries visited institute, livestock farms and interacted with scientists. Dr. U.B. Chaudhary, Head, Nutrition Feed Resources and Product Technology, presented the progress of the *Moringa olifera* leaves feeding experiment. Minister appreciated the fodder value of Moringa and emphasized how the farmers can reduce the cost of feed by replacing conventional feed by Moringa. He also suggested the role of Moringa based feed in bridging gap between demand and supply of fodder in the country. The feed industry delegation has shown keen interest for taking Moringa biomass production and its value addition at commercial level.



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