National Seminar
On
"Current Scenario and Future Strategies for Augmenting Productivity of Small Ruminants"
Bihar Animal Sciences University, Patna-14
&
Indian Society for Sheep and Goat Production and Utilization

No. /ISSGPU/DR/BASU,Patna/ Dated : 25.03.2019

**Proceedings of the National Seminar on "Current Scenario and Future Strategies for Augmenting Productivity of Small Ruminants" held at Bihar Animal Sciences University, Patna on 14-16th February 2019.**

The Indian Society of Sheep and Goat Production and Utilization (ISSGPU) organized three days National Seminar on "Current Scenario and Future Strategies for Augmenting Productivity of Small Ruminants" at Bihar Animal Sciences University, Patna in collaboration with ICAR-CSWRI Avikanagar and ICAR-CIRG Makhdoom on 14-16th February 2019. The seminar was inaugurated in presence of Dr. Prem Kumar Ji, Hon'ble Minister of Agriculture, Govt. of Bihar, Dr. Rameshwar Singh, Vice Chancellor, BASU, Patna , Sh. Deepak Kumar Singh, Principal Secretary, Govt. of Bihar, and other dignitaries on 14th Feb. 2019. The aim of the seminar was to discuss the emerging issues on production and health aspects of small ruminants in the country and find out the ways to tackle problems and several issues faced by the sheep and goat farmers in the country. In this perspectives, we have grouped the objectives into six major technical sessions namely, 1. Genetic resources and genomics of small ruminants, 2. Physiology and Reproductive Biotechnology, 3. Nutritional and feed manipulation, 4. Animal Health Management, 5. Post-Harvest Technology, 6. Socio-economic aspects of Small Ruminants, and followed by Industry and academia Interface and Goat Fair.

A total of 155 delegates participated in the seminar and took part in active presentation, deliberation and discussion on different issues to bring out the following major recommendations:

1. The Central and State Govt. should take initiatives to use the community pasture or land for grazing of the sheep and goats.
2. There is need to devise nationwide grading system of sheep and goat breeds and their records.
3. Sufficient veterinary aids should be provided to the sheep and goat farmers by State Government or concerned Govt. Department/ agencies.
4. There is a scarcity of good quality of semen of buck and ram. Hence, the high quality buck and rams needs to be provided to the farmers for genetic improvement of the local sheep and goat.

5. Government should formulate the policy to avoid the sale of lambs and kids at an early stage of age for meat purposes. A viable marketing system for sheep and goat products should also be developed to make the small ruminant system profitable and sustainable.
6. Sufficient credit or financial support for production of sheep and goat in the country should be extended from NABARD/Banks/ concerned Department or cooperative societies.
7. There is need to improve the prolificacy of non-prolific sheep breeds in the country by using *FecB* gene introgression programme by which the sheep population could multiply in faster way.
8. Research efforts are required to use the genomic selection strategies for economically important traits in sheep and goats using high density SNP chips and sequencing technologies.
9. Application of genome editing has several avenues in small ruminant production system, hence CRISPR/Cas9 technique should be utilized for enhancing the mutton and improving the meat and milk quality of sheep and goat in the country.
10. There is need to identify the candidate gene (s) for high prolificacy in Black Bengal goats, therefore it could be utilized in improving the prolificacy of non-prolific goats breeds in India.
11. More extensive research is required to use the stem cells in restoration of the fertility in infertile sheep and goat or it can be used as animal models for treatment of several diseases.
12. There is need to devise strategies to ameliorate the detrimental effects of heat stress on small ruminants by supplementing nutrition and construction of the housing system to dissipate the heat stress on these animals during hot summer season.
13. Emphasis should be given on the use of frozen semen based artificial insemination to improve the productivity and conservation of sheep and goat.
14. Research work on early pregnancy of small ruminants is required so that it could be utilized in the field conditions.
15. There is need to work on the functional aspects of sheep and goat milk, as it is more rich than the cow and buffalo milk. Efforts should be made to prepare the baby milk formula or probiotics without having any allergies to infants and childrens.
16. Commercial farming of small ruminants is the future need of the stakeholders for improving the productivity of sheep and goat by using feed additives and feed manipulation.
17. There is need to produce meat with less cholesterol with more CLA and omega fatty acids for better health aspects of the human being.
18. It is advised that nutritional manipulation can also be used to reduce the submandibular oedema of small ruminants in winter season.
19. Refugia based strategies should be applied in the monsoon season to reduce the anthelmintic resistance in the parasites of small ruminants.
20. There is need to diagnose the anthelmintic resistance in major parasites of small ruminants in different states or region for proper implementation of the drenching program. Herbal preparation may be alternate option to reduce the parasitic load in small ruminants.

21. Application of *D. flagrans* fungus can be used as an alternative for biological control of the *Haemonchus contortus* larvae of small ruminants on pasture, but the cost of the treatment should be economical.
22. Respiratory infection are very common in sheep and goat neonates of Rajasthan and foot root in Bihar and Bengal. Therefore, preventive measures should be taken to avoid these diseases in such areas.
23. There is need to use the lycopodium along with ammonium chloride for the control of the urolithiasis in goats.
24. Precautionary measures or proper vaccination should be applied in time to reduce the incidences and mortality rate due to PPR and other diseases in small ruminants.
25. There is need to process the sheep and goat meat to enhance the shelf life using thermal processing, drying, chemical and biological process.
26. Better packaging practices should be applied for the meat products for more attraction and demand of the stakeholders.
27. Development of the value added products from goat rumen may be utilized into useful products.
28. Value addition of pashmina with other specialty fiber like angora, camel, and yak hairs may improves their functional and aesthetic properties of pashmina.
29. There is need to better utilize the low grade pashmina fiber for the development of knitwear through value addition.
30. Sheep and goat plays an important role in improving the socio-economic status of the landless farmers, however, the lack of rearing houses, infrastructure, lack of quality feed and fodder resources, insufficient control of diseases, improper uses of anthelmintic drugs are the major constraints, which need to be improved through better management.
31. There is need to double the income of the farmers through small ruminant production system.
32. There is need to provide the basic infrastructure, community pasture, proper disease control and vaccination, and availability of good quality buck and ram semen may provide opportunities for sheep and goat production to make this system as viable enterprise.

25/3/19

**(Dr. Satish Kumar)**
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Organizing Secretary
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The above recommendations are prepared for your kind approval, please.

30.3.19

**Dr. M.S. Chauhan**
President ISSGPU & Director ICAR-CIRG