



ICAR - CSWRI

भा.कृ.अनु.प.-केन्द्रीय भेड़ एवं ऊन अनुसंधान संस्थान, अविकानगर
ICAR - CENTRAL SHEEP AND WOOL RESEARCH INSTITUTE, AVIKANAGAR
ISO 9001 : 2015 certified



NEWS LETTER



Volume II No. 1

Jan - June 2019

Chief Editor

A. K. Shinde

Editors

Davendra Kumar
Gopal Gowane
Leela Ram Gurjar
Jyoti Kumar
Vinod Kadam
Seiko Jose

Published by

A. Sahoo
Director (Acting)

Contents

Research Highlights	2
International Sheep News	3
Glimpse of Celebration	4
Training Programme	
New Publications	5
Visitors	5
Meeting	6
Swachh Bharat Abhiyan	6
Farmers Corner	7
Sports/Cultural Activities	8
Forthcoming Programme	8

From the Director's Desk

Greetings to all

The Institute and its three Regional Stations in the different agro-climate of the country constantly serving to the nation by finding solutions to challenges in sheep husbandry and enhancing income and livelihood of farmers. The shrinking grazing lands, climate change effect on sheep health, growing demand of mutton and volatility in wool prices are some of the challenges. The institute research is addressing these issues and developing technologies, processes and products for the farmers, stakeholders and industries. The new initiative on Patanwadi sheep for milk production has been taken. The nutritional and therapeutic aspects of sheep milk are being studied. Waste wool is being used for agriculture and development of the quilt, AC, mattress and yoga mat from sheep wool have been targeted. The institute is currently focusing on lamb incubator for protection from cold stress in harsh cold climatic condition. The institute is focusing on skill development of farmers to improve their income from sheep and rabbit rearing. Various training programmes are organized in the last six months. ICAR sponsored short course on laparoscope aided artificial insemination & embryo transfer and self-sponsored National Skilled Training Programmes received attraction. The trainings and other activities are also extended to poor and underprivileged farmers under the scheduled caste sub plan (SCSP) for the upliftment of their socioeconomic conditions. The foundation day of the institute and ARC, Bikaner and NTRS, Garsa celebrated and farmers are invited. Institute technologies are displayed and interactive between farmer-scientist are held for transferring technologies to farmers. Institute signed a MOU with Bihar Animal Science University (BASU), Patna for collaborative research and extending research facilities to postgraduate and Ph.D scholars. World Veterinary Day, Health Camps, International Yoga Day etc. celebrated. The activities on Swachh Bharat Abhiyan taken in large scale in institute to keep the campus clean. As we move ahead, I wish all the best to staff of Institute for overall growth and development of research in sheep and wool sectors.



(A Sahoo)
Director (Acting)

Research Highlights

Recent trends in the treatment of Johne's disease in animals and Crohn's disease in humans

G. G. Sonawane

Paratuberculosis (Johne's disease) is a chronic intestinal disease, caused by *Mycobacterium avium* sp. *Paratuberculosis* (MAP), primarily affects domestic and wild ruminants. This organism is also caused Crohn's disease (CD) in humans. The treatment of disease is not viable by antibiotics due to the chances of curing the animal are low, high cost of drugs and very long course of treatment. Recently, an ionophore antibiotic, monensin, as a possible therapeutic in adult cattle or chemo-prophylactic in calves have been reported. In humans, recently, RedHill Biopharma announced RHB-104 an investigational and proprietary oral antibiotic combination for treatment of CD patients.



Use of antioxidants in semen to improve fertility

Ashok Kumar

Vitamins and minerals play an important role as antioxidant in the reproductive physiology of mammals. Vitamin E combined with selenium is a potent antioxidant. Vitamin C exerts antioxidant effect by trapping radicals in the aqueous phase. The study at ARC, Bikaner on Magra ram inferred that injections of vitamin C and vitamin E combined with Se improved seminal attributes of Magra rams and suggested a protective effect on sperm that may lead to enhanced fertility.



Selective genotyping and single-step prediction selection for sheep in India

Gopal Gowane

Genomic selection involves creation of the reference of selected individuals for predicting the breeding values of juvenile animals. This helps in reducing generation interval, increasing accuracy and improve selection for difficult measure like carcass traits and low heritable traits. Reference populations for genomic selection usually involve selected individuals, which may result in biased prediction of estimated genomic breeding values (GEBV). In a simulation study carried out in institute,



the bias and accuracy of GEBV were explored for various genetic models with individuals selectively genotyped in a typical nucleus breeding program. The performance of three existing methods, i.e. Best linear unbiased prediction of breeding values using pedigree-based relationships (PBLUP), genomic relationships for genotyped animals only (GBLUP) and a single-step approach (SSGBLUP) using both pedigree as well as genomic information. In a typical sheep breeding program, where it is too expensive to genotype all animals, it would be appropriate to genotype phenotypically contrasting selection candidates and use a single-step approach to obtain accurate and unbiased prediction of estimated genomic breeding values.

Sheep milk: an incredible healthy food

Arpita Mohapatra

Sheep milk has a good proportion of calorie. It has twice the fat of cow milk and also twice the healthy fats like medium chain fatty acids and linoleic acids. It is naturally homogenized and easier to digest. It is higher in iron, calcium, phosphorous, zinc, thiamine, riboflavin and vitamin C. Therefore, now a day it is considered as an excellent source for delivering probiotic to humans. Bioactive peptides from sheep milk have a medicinal benefits besides nutritional impact. It has reported to have ACE inhibitory activity to combat cardiac diseases, antimicrobial and immunomodulatory activity. Institute has initiated research for determining the inherent unique functional qualities of sheep milk.



Lamb incubator for protecting neonatal lambs from cold

P.Thirumurugan & A. Sahoo

Protection of young lambs from cold stress is a challenging task in sheep farming at high altitude hilly region where inclement weather which, affect lamb and even lead to death. The lamb incubator developed using coarse wool to shield the inside chamber heat and also, protect the micro-environment from outside thereby effectively maintain a relative comfort temperature to protect from cold exposure. Further, since the lamb incubators are



conveniently foldable and portable, it can be very useful to protect young lamb en-route migration during winter.



Wool waste-based manures in fodder cultivation

R. L. Meena

Wool waste from industries and very coarse wool as a waste product, end up by burning or burying it. This causes serious environmental hazards and air pollution. Keeping this in view, wool waste manure developed for enhancing the production of long duration fodder crop. Waste wool @ 500 kg/ha, Avikhad @ 6.25 t/ha (30 % wool and 70 % sheep manure) and sheep manure @ 12.50 t/ha. Waste wool based manure significantly ($P \leq 0.05$) increased the growth attributes and green fodder yield of Napier. Among different manuring sources the application of Avikhad @ 6.25 t/ha resulted the highest green fodder yield, followed by sheep manure @ 12.50 t/ha and waste wool @ 500 kg/ha. Waste wool in the form of 'Avikhad' resulted in higher green fodder yield of Napier.



Designer mutton production by nutrition interventions

Y.P. Gadekar

Consumers now a days prefer natural preservatives than synthetic due to health issues. Lower lipid oxidation in the LD muscles of lambs stored at frozen temperature fed on natural antioxidants: senjana (*M. oleifera*) and flavonoid pigments: kaempferol, rhamnetin, isoquercitrin and kaempferitrin. Senjana leaves in the diet of lambs protect the lipid oxidation of meat during storage. This could be one of the strategy for production of designer meat with improved oxidative stability.



Rabbit meat- an ideal meat for human consumption

Arvind

Rabbits (*Oryctolagus cuniculus*) farming is popularizing in our country among the farmer's and youth due to better return. Rabbit meat comes under the white meat category and advantageous in terms of health benefit and price. It is lean, rich in proteins (20 percent) of high biological value, minerals, vitamins and low in fat, cholesterol and sodium. Rabbit has high dressing yield ranging from 60-65%. Institute has elite germplasm of rabbit breed/strains and provides training on rabbit farming. The institute has also undertaken research work on rabbit meat and its value addition to diversified products such as rabbit meat nuggets, pickle and soup and rabbit pelt processing into ladies purse, muffler, cup etc.



International Sheep News

Sheep pregnancy can be detected using wool? Yes, it can be!

Scientific team from the Western Sydney University have created a new and non-invasive approach for pregnancy diagnosis in sheep (Merino) by the analysis of reproductive hormones in wool fiber. Dr. Edward Narayan and team tested wool cortisol and progesterone levels in 46 maiden Merino ewes and compared their levels during pregnancy to determine how wool derived hormones vary for the physiological status. The results were well in agreement with the steroid hormone from the proven traditional testing using blood plasma. This has come out with a fact that supports wool as a non-invasive alternative assessment tool for reproductive hormone measurement. Dr. Narayan said, "Pregnancy in Merino ewes elicited significant increases in wool progesterone and cortisol levels while the progesterone levels decreased significantly after birth, cortisol levels did not. The paper was published in the Journal Plos One by Sawyer in 2019.



Glimpse of Celebration

58th Foundation Day of Institute

Institute celebrated its 58th foundation day on 4th January, 2019. On the occasion, 600 farmers participated in the Farmers-Scientist Sangosthi. An exhibition of institute technologies and elite ram, buck and rabbit arranged. Hon'ble MLA Shri Kanhaiya Lal Choudhary, Dr. R.S. Gandhi, ADG (Animal Science) ICAR, New Delhi and Directors from ICAR Institute Dr Gopal Lal (NRCSS), Dr Khem Chand (IGFRI), Dr R. K. Sawal (NRCC), Dr P. L. Saroj (ICAH) and Col. Sh. K.S. Shekhawat (CWDB) graced the occasion and provided valuable inputs for doubling the farmer's income.

मरू क्षेत्रीय परिसर, बीकानेर 46वां स्थापना दिवस

मरू क्षेत्रीय परिसर, बीकानेर ने अपना 46 वां स्थापना दिवस 4 अप्रैल 2019 को हर्षोल्लास के साथ मनाया। इस अवसर पर किसान - वैज्ञानिक संगोष्ठी का आयोजन किया गया जिसमें लगभग 250 किसानों को विशेषज्ञों ने भेड़ों के उचित

खान-पान, स्वास्थ्य सुरक्षा तथा प्रजनन संबंधी विषयों पर जानकारी दी। इस अवसर पर मगरा, मारवाड़ी, चोकला तथा अविशान किस्म के मेढों की सजीव पशु प्रदर्शनी भी आयोजित की गई। भेड़पालको एवं किसानों को वैज्ञानिक तकनीको से अवगत कराने के लिए लगभग दस शोध संस्थानों से प्रदर्शनी भी आयोजित की गई।



उत्तरी शीतोष्ण क्षेत्रीय केन्द्र, गढ़सा का स्थापना दिवस

संस्थान अविक्कानगर, के उत्तरी शीतोष्ण क्षेत्रीय केन्द्र, गढ़सा में दिनांक 09-02-2019 को केन्द्र का 57वाँ स्थापना दिवस का शुभारम्भ माँ सरस्वती के समक्ष दीपक प्रचलित कर किया गया। इस अवसर पर केन्द्र के प्राचार्य वैज्ञानिक एवं अध्यक्ष डॉ. ओमहरी चतुर्वेदी ने सभी अतिथियों एवं आगुन्तकों का स्वागत करते हुये वर्तमान ग्रामीण अर्थव्यवस्था में भेड़ पालन के महत्व पर प्रकाश डालते हुये भेड़ गीत का गान किया। कार्यक्रम के मुख्य अतिथि डॉ. आर्तबन्धु साहू, ने संस्थान द्वारा विकसित भेड़ पालन से सम्बन्धित नवीनतम तकनीकों एवं किसानोपयोगी योजनाओं के बारे में बताया।



World Veterinary Day Celebration

The World Veterinary Day (WVD) celebrated with organization of a workshop on the theme of WVD on 30.04.2019. The program was chaired by the Director of the Institute Dr. A. Sahoo. The chief guest of the function was Dr. S.A. Karim, former-Director of CSWRI.



अविकानगर में 70वें गणतन्त्र दिवस समारोह का आयोजन

संस्थान, अविकानगर में 70वें गणतन्त्र दिवस समारोह का आयोजन धूमधाम से मनाया गया। इस उपलक्ष में निदेशक, डॉ. अरुण कुमार तोमर ने ध्वजारोहण किया। संस्थान के समस्त अधिकारी, कर्मचारी अपने परिवार सहित उपस्थित हुए। इस अवसर पर संस्थान में निम्न कर्मचारियों ने 25 वर्ष भारतीय कृषि अनुसंधान परिषद में सेवा दी है - डॉ. साहू, डॉ. आर एस भट्ट, डॉ. एस जी शर्मा, श्री मोहन सिंह एवं श्री कैलाश चंद मीना को स्मृति चिन्ह प्रदान किया गया। विशिष्ट अतिथि के रूप में डॉ. अरुण कुमार रावत, निदेशक, डी.बी.टी. नई दिल्ली उपस्थित थे।



Training Programme

राष्ट्रीय कौशल विकास प्रशिक्षण कार्यक्रम

संस्थान द्वारा दिनांक 12 मार्च, 2019 को राष्ट्रीय कौशल विकास प्रशिक्षण कार्यक्रम के अन्तर्गत वैज्ञानिक पद्धति से भेड़-बकरी एवं खरगोश पालन

विषय पर 8 दिवसीय प्रशिक्षण कार्यक्रम का शुभारम्भ किया गया। कार्यक्रम का उद्घाटन संस्थान की अनुसंधान सलाहकार समिति के अध्यक्ष डॉ. प्रभाकर राव द्वारा किया गया। संस्थान द्वारा इस तरह का यह पहला प्रशिक्षण कार्यक्रम आयोजित किया जा रहा है इस कार्यक्रम में भाग लेने वाले 15 किसान हैं जो आन्ध्रप्रदेश, दिल्ली, महाराष्ट्र, छत्तीसगढ़, तेलंगाना, हरियाणा, गुजरात एवं राजस्थान प्रान्तों से आये हैं। संस्थान के निदेशक डॉ. अरुण कुमार ने उद्घाटन समारोह में बताया कि यह कार्यक्रम में भाग लेने वाले किसान स्वेच्छा से प्रशिक्षण कार्यक्रम का शुल्क जमा करवाकर प्रशिक्षण प्राप्त कर रहे हैं।



Training on Advances in Small Ruminants Production System

A six days training on "Advances in Small Ruminants Production System" held at institute on 18 February 2019, sponsored by Directorate of Sheep Husbandry, Jammu, to update the knowledge of Veterinary Officers in recent trends in production and management of sheep and goats.



ICAR-Sponsored Short Course

A 10 days short course on "Laparoscope Aided AI & Embryo Transfer" organised from 14-23 January 2019, at institute. Thirteen participants belonging to five states (Haryana, Andhra Pradesh, Rajasthan, Karnataka and West Bengal) attended the training.

ऊनी फैल्ट द्वारा हस्तशिल्प उत्पादों के निर्माण पर प्रशिक्षण

संस्थान में वस्त्र निर्माण एवं वस्त्र रसायन विभाग के तत्वाधन में दिनांक 01 मार्च 2019 को भारत सरकार द्वारा चलायी जा रही अनुसूचित जाति-उप

योजना के अन्तर्गत, महिलाओं के कौशल विकास के लिए “ऊनी फैल्ट द्वारा हस्तशिल्प उत्पादों का निर्माण” विषय पर प्रशिक्षण कार्यक्रम आरम्भ किया गया।



Life Sciences Students visited SRRC, Mannavanur

A team comprising 83 students and faculty members from the Department of Life Sciences, Kristu Jayanti College, Bengaluru made an industrial visit to SRRC, Mannavanur on 25 January 2019.



- Gowane GR, Swarnkar CP, Misra SS, Kumar R and Kumar A. 2018. Construction of selection criteria for *Haemonchus contortus* resistant strains of Avikalin and Malpura sheep. *Animal*, <https://doi:10.1017/S175173-1118003749> (NAAS – 7.87)
- Singh D, Swarnkar CP and Khan FA. 2018. Epidemiology of gastrointestinal parasites and impact of worm management schemes in sheep flocks of Rajasthan. *Small Ruminant Research* 164: 22-27. (NAAS Score – 6.97)
- De Kalyan, Swarnkar CP, Prince LLL and Ali SF. 2019. Interrelationship between late gestational ewe factor and early life lamb factors in semi-arid tropical region. *Tropical Animal Health. Production*, 51: 249-255. (NAAS – 6.98)

ISSGPU fellow award to Dr. D.B. Shakyawar



Dr. D.B. Shakyawar appointed as Chairman of Sectional Committee, Textile Division Council, Bureau of Indian Standards (BIS) for three years (2019-21).

Distinguished Visitors

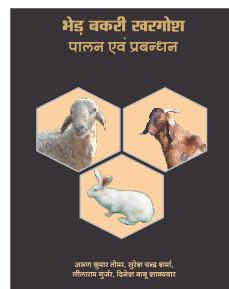
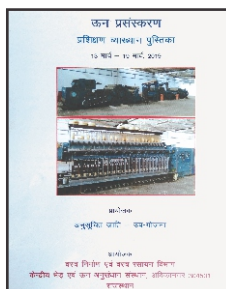
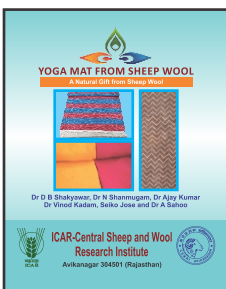
Shri Akhilesh Kumar Singh, GB Member of ICAR visited institute on 4-5 March 2019.

Dr Ravinder Singh Gandhi, ADG (AP&B), ICAR visited SRRC, Mannavanur on 9-10 April 2019.



New Publications

Research Publications



RAC Meeting of Institute

The meeting of the Research Advisory Committee (RAC) held on 11 and 12 March, 2019 at Institute under the Chairmanship of Dr Prabhakar Rao, Former Hon'ble Vice Chancellor, SVVU, Tirupati. Dr R.S. Sahota, Retired Director, Extension Education, GADVASU, Ludhiana, Dr Avtar Singh, Retired Principal Scientist, NDRI, Karnal, Dr Arun Kumar Tomar, Director, ICAR-CSWRI, Avikanagar and Dr A.K. Shinde, Principal Scientist and Member Secretary attended the meeting. All Heads of Divisions, In-charges and Principal Scientists participated in the meeting.



Telecast/Webcast of inauguration of PM Kisan Samman Nidhi Scheme

The Institute organized a webcast of **Man ki Bat** followed by launching of **Pradhan Mantri Kisan Samman Nidhi** on 24.02.2019. Local representatives /officials attended. Shri Sukhbir Singh Jounapuria, MP, Shri Kanhiya Lal Choudhary, MLA, Shri. Shankar Lal Thanda and Sh. Jugal Kishor Sharma, attended the programme. ADJ Prashant Vinod Giri, SDM Mr. Ajay Arya, Malpura, Tahsildar and other officers were also present. More than 500 farmers and 25 invitee along with 300 employees have participated in the meet.



IMC Meeting and Hindi Workshop at SRRC Mannavannur



The Institute Management Committee meeting was held at Southern Regional Research Centre, Mannavannur (Tamil Nadu) on 03.06.2019. The meeting was presided over by Dr. A. Sahoo, Director ICAR-CSWRI and Chairman. In the following day, a Hindi workshop was also conducted at the centre.



MoU between ICAR-CSWRI, Avikanagar and BASU, Patna developed for research, teaching and extension in areas of sheep and rabbit on the occasion of National Seminar on Current Scenario and Future Strategies for Augmenting Productivity of Small Ruminants from 14-16 Feb 2019 at BASU, Patna, Bihar



स्वच्छ भारत अभियान

अंतर्राष्ट्रीय श्रमिक दिवस, 2019 के अवसर पर संस्थान के सभी वैज्ञानिकों, अधिकारियों, कर्मचारियों एवं अनुबन्ध कर्मचारियों ने स्वच्छता के प्रति जागरूकता के लिए निदेशक महोदय की उपस्थिति में स्वच्छता शपथ ग्रहण की गई। इस अवसर पर निदेशक महोदय ने संस्थान में चलाई जा रही स्वच्छता गतिविधियों की प्रशंसा करते हुए भविष्य में स्वच्छता मिशन को और आगे बढ़ाने का आवाहन किया।



International Yoga day celebration

Institute celebrated “International Day of Yoga” on 21st June 2019. Yoga session of about one and half hour was organized early in the morning at 6.00 AM with all the staff members, their family members, school teachers, children of the campus.

In the auspicious occasion of International Yoga Day, institute released 4 varieties of yoga mat made up of sheep wool prepared at TMTC.



Farmer's corner

SCSP Scheme, Kisan Sangoshtis, Health Camps

In this year, Schedule Caste Sub Plan (SCSP) implemented through various to uplift the schedule caste families' livelihood in the selected villages. Three health camps at TOT villages (Beepur, Rajpura & Rindaliya Bujurg) organized to

ensure health care support to the animals. About 84 farmer's participated and about 520 sheep, goat, cow and buffalos treated during health camps. Five sangoshtis also conducted in the field and addressed the queries of sheep and goat breeders as well as farmers on the spot.

Farmer FIRST Project

Two evening chaupals at Arnia and Chosla were organized under Farmer FIRST project on 17.4.2019 and 26.4.2019, respectively. 90 male and 50 female farmers of the villages benefited.



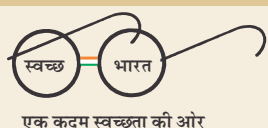
Sports Activities

The sports team of the institute performed well in ICAR's Inter-Zonal Sports Tournaments at ICAR-IVRI, Izatnagar, Bareilly from 25-28 February, 2019. In Inter-zonal tournament, 13 players of the institute represented West Zone of the Council for basketball, volleyball smashing and volleyball shooting and bagged medals in all the 3 events. The institute secured ICAR Championship for the consecutive second time in volleyball smashing.



Forthcoming Programme

ICAR sponsored short course on “Quality evaluation and value addition to sheep produce with special reference to wool and mutton” 16-25 Sept. 2019 at ICAR-CSWRI, Avikanagar.



एक कदम स्वच्छता की ओर

भा.कृ.अनु.प.-केन्द्रीय भेड़ एवं ऊन अनुसंधान संस्थान,

अविकानगर - 304501

दूरभाष : 01437-220162, फैक्स : 01437-220163

ईमेल : director.cswri@icar.gov.in • website : www.cswri.res.in

