



## Report on 38<sup>th</sup> Annual Convention of The Indian Society for Study of Animal Reproduction (ISSAR) and International Symposium on 'Frontiers in Theriogenology: Research and Practice'

December 6<sup>th</sup> to 8<sup>th</sup>, 2023

The inauguration of 38<sup>th</sup> Annual Convention of 'The Indian Society for Study of Animal Reproduction' (ISSAR) and International Symposium on 'Frontiers in Theriogenology: Research and Practice' was held on 6<sup>th</sup> December 2023 at 10 AM in the Golden Jubilee auditorium, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala. The Chairman of the organizing committee, ISSAR 2023 and Faculty Dean, CVAS, Mannuthy, Prof. (Dr.) K. Vijayakumar welcomed the gathering. The programme was presided over by Prof. (Dr.) Shiv Prasad, President, ISSAR and Prof. (Dr.) M. Selvaraju, Gen. Secretary, ISSAR presented the annual report. The symposium was inaugurated by the chief guest Prof. (Dr.) Mohanan Kunnummal, Hon'ble Vice- Chancellor, Kerala University of Health Sciences. The guest of honour, Prof. (Dr.) M.R. Saseendranath, Hon'ble Vice- Chancellor of Kerala Veterinary and Animal Sciences University addressed the august gathering and released the compendium. The former senior faculty members of the Department of Animal Reproduction, Gynaecology and Obstetrics, Kerala were honoured during the occasion. Felicitations were offered by Prof. (Dr.) T.S. Rajeev, Director of Entrepreneurship, KVASU and Dr. R. Rajeev, Managing Director, Kerala Livestock Development Board. Dr. C. Jayakumar, Organizing Secretary, ISSAR 2023 & Associate Professor and Head, Department of ARGO, CVAS, Mannuthy offered vote of thanks. Dr. Brig. N. M. Singhvi VSM and Dr. Sudhir Kumar Agarwal have been awarded with Life Time Achievement Award 2022 and 2023 respectively. Dr. G. N. Purohit, Dr. Pankaj Sood,

and Dr. M. K. Tandle received ISSAR Fellowship Award 2023. Further following ISSAR awards were given during inaugural function.

### Prof. NILS LAGERLOF AWARD – 2023

Dr. Thirumala Rao Talluri  
Dr. Arumugam Kumaresan  
Dr. Manish Kumar Sinha  
Dr. Nilendu Paul  
Dr. John Peter Ebenezer Samuel King  
Dr. Tirtha K. Datta

### Dr. G. B. SINGH MEMORIAL AWARD – 2023

Dr. Ramesh Kumar G  
Dr. Ashish Mishra  
Dr. Arindam Dhali  
Dr. Ippala Janardhan Reddy  
Dr. Debpriyo Kumar Dey  
Dr. Dintaran Pal  
Dr. Raghavendra Bhatta

### Dr. R. D. SHARMA MEMORIAL AWARD – 2023

Dr. Ravjibhai K. Chaudhari  
Dr. Tarunkumar V. Sutaria

Dr. Arunkumar C. Patel

Dr. Chandrakant F. Chaudhari

**Dr. N. C. SHARMA MEMORIAL AWARD – 2023**

Dr. Parveen Kumar

Dr. Anand Kumar Pandey

Dr. Sandeep Kumar

Dr. Pradeep

Dr. Gitesh Saini

Dr. Hitesh

Dr. Gyan Singh

**ISSAR BEST STATE CHAPTER AWARD – 2023**

Tamil Nadu State Chapter

*Ramanathan Kasimanickam*

2. Role of nutrition on resumption of postpartum cyclicity in cows

*M. Selvaraju*

Selection of dairy animals for high fertility

*A. Kumaresan*

**Oral presentations**

Chair: Dr. M. K. Tandle

Co-chair: Dr. S. K. Sahatpure

Rapporteur Dr. V. Prabakaran

**Poster presentations**

Chair: Dr. Ibraheem Kutty

Co-chair: Dr. Jerome A.

Rapporteur: Dr. Upasana Ratnakaran

**38<sup>th</sup> Annual Convention of the Indian Society for Study of Animal Reproduction (ISSAR) and International symposium on**

**“Frontiers in Theriogenology: Research and Practice”  
December 6<sup>th</sup> – 8<sup>th</sup>, 2023**

**6.12.2023**

**CR SANE oration – Status of sexed semen in bovines and its future contribution in changing milk production potential in India**

*Rahul Gupta*

Chair: Dr. Shiv Prasad

Co-chair: Dr. M Selvaraju

Rapporteur: Dr Ajeet Kumar

**Recommendations**

1. For optimum fertility with sexed semen  
Selection of heifers on the basis of body weight
2. Recommendations to be duly followed for thawing and handling of sexed semen
3. Technique of artificial insemination, handling of the tract and site of deposition should be critically followed

**TECHNICAL SESSIONS**

**A. BOVINE GYNAECOLOGY AND OBSTETRICS  
(6.12.2023, AN)**

**Lead papers**

1. Clinical teaching, practice and research in Theriogenology....what does the future hold?

**Recommendations**

1. The role of nutrition in transition period should be given due importance
2. Therapeutic protocols for the management of infertility in cattle and buffaloes should be disseminated
3. Synchronisation of estrus with progesterone patch is a minimally invasive and economic technique to conserve Kangayam breed

**B. CLINICAL CASE PRESENTATION (6.12.2023, AN)**

**Lead papers**

1. Bovine reproductive ultrasonography: a boon in clinical diagnosis of routine and idiopathic infertile cases  
*S. Satheshkumar*
2. Infrared thermal imaging: a non-invasive technology to monitor temperature and its application in animal reproduction  
*S. Jeyakumar*

**Oral presentations**

Chair: Dr. R. G. Shah

Co-chair: Dr. Ramsingh

Rapporteur Dr. Tarun Sutaria

**Poster presentations**

Chair: Dr. Ajeet Kumar

Co-chair: Dr. A. D. Patil

Rapporteur: Dr. Amarjeet Bisla

## Recommendations

1. Ultrasonography for precise diagnosis of pregnancy and infertility should be highlighted
2. The modern tools like thermal imaging – Thermography and Artificial Intelligence have wide applicability in animal reproduction
3. Handling of obstetrical problems precisely in large animals is of utmost importance. The technique of foetotomy is an extremely useful obstetrical tool for relieving dystocia due to monstrosities or foetal malpositions, while ensuring better prospects of dam survival and post-partum fertility than caesarean section.
4. Immunohistochemistry should be routinely used for better assessment genital tract tumours in pet animals

### C. REPRODUCTIVE BIOTECHNOLOGY (7.12.2023, FN)

#### Lead papers

1. Estrogen signaling: Setting new paradigms in gene regulation  
*Sreejith, J. Nair*
2. Development of ART in Camels: From Research to Practice  
*Nisar Ahmad Wani*

#### Oral presentations

Chair: Dr. S. Selvaraju  
Co-chair: Dr. G. K. Mishra  
Rapporteur Dr. Vishal Suthar

#### Poster presentations

Chair: Dr. A. Kumaresan  
Co-chair: Dr. Nishant Kumar  
Rapporteur: Dr. T. Sarath

## Recommendations

1. Government of India should be requested to provide financial assistance to promote research directed at improving fertility in the field
2. Basic research on aspects of canine reproductive health should be initiated in India
3. Improving proportion of blastocysts formed *in vitro* should be focused for augmenting fertility in ART
4. Use of nanotechnology in animal reproduction should be promoted to promote development of cost effective applications

5. Use of salivary biomolecules and exosomes for estrus detection and pregnancy diagnosis in livestock has to be intensified and explored

### D. ANDROLOGY, SEMINOLOGY AND ARTIFICIAL INSEMINATION (7.12.2023, FN)

#### Lead papers

1. Regulation of sperm function and fertility prediction in bulls  
*Jacob Thundathil*
2. Spermatogonial stem cells: Current biotechnological advances, challenges and applications in livestock  
*Binsila, B. K.*

#### Oral presentations

Chair: Dr. S. K. Ghosh  
Co-chair: Dr. Binsila B. K.  
Rapporteur: Dr. Ankit Ahuja

#### Poster presentations

Chair: Dr. K. Promod  
Co-chair: Dr. S. Manokaran  
Rapporteur: Dr. Mayur Pawshe

## Recommendations

1. Identification of bull fertility markers and improvement of semen freezability should be stressed
2. The agro-climatic condition need to be taken into account while studying the impact of season on sperm quality from different agro-climatic zones of the country.

### E. SMALL RUMINANT AND SWINE REPRODUCTION (7.12.2023, AN)

#### Lead papers

1. Pig Reproduction: opportunities, challenges and way forward  
*Sunil Kumar*

#### Oral presentations

Chair: Dr. K. Promod  
Co-chair: Dr. A. K. Pandey  
Rapporteur: Dr. Krishnappa Balaganur

#### Poster presentations

Chair: Dr. S. Jeyakumar

Co-chair: Dr. Sudhir Kumar

Rapporteur: Dr. Chhavi Gupta

## Recommendations

1. Efforts should be made to enhance reproductive efficiency of small ruminants through nutraceutical/therapeutic approaches and use of field applicable ARTs
2. Pig AI laboratories/stations should be established in colleges, state departments as per National Action Plan on Pig in the country to disseminate elite chilled boar semen to farmers door step for upgrading nondescript pigs
3. Resilient reproductive research should be in focus for optimization of reproductive efficiency in pig
4. Osteopontin could be used as the fertility marker in buck semen
5. Use of specific fractions of boar semen for augmenting preservability and cryosurvival has to be promoted

## F. COMPANION ANIMAL REPRODUCTION (7.12.2023, AN)

### Lead papers

1. Preparturient caesarean in the bitch – recent developments  
*K. De Cramer*
2. Advances in Management of Feline Pregnancy  
*Sarita, U. Gulavane*

### Oral presentations

Chair: Dr. N. Arunmozhi

Co-chair: Dr. Gyan Singh

Rapporteur: Dr. M.V. Ingawale

### Poster presentations

Chair: Dr. K. Murugavel

Co-chair: Dr. A. Methai

Rapporteur: Dr. Sonu Kumari

## Recommendations

1. Companion animal fertility management should be done with applications of newer diagnostic modalities and pin point diagnosis for better results
2. Emphasis should be given on medical management of specific cases of pyometra with use of ultrasonography for grading
3. Other pathies should be explored for ensuring health of animal and future fertility

## G. EQUINE CAMEL AND WILD ANIMAL REPRODUCTION (8.12.2023, FN)

### Lead papers

1. Applications of assisted reproductive technologies for the conservation of rare and endangered species  
*Budhan S. Pukazhenth*
2. Equine Embryo transfer in Indigenous horse breeds- Challenges and hurdles  
*Thirumala Rao Talluri*

### Oral presentations

Chair: Dr. Arjan Dhama

Co-chair: Dr. T. Sarath

Rapporteur: Dr. Ambili John

### Poster presentations

Chair: Dr. M. Palanisami

Co-chair: Dr. Harpreet Singh

Rapporteur: Dr. Rubina Kumari B.

## Recommendations

- Measures to ensure *In situ* and *ex situ* conservation of endangered and prized wild animals to be promoted
- Non invasive pregnancy detection in wild felids employing enzyme immunoassays is promising

## ABSTRACT OF PAPERS PRESENTED

	Oral Scheduled	Pre-sented	Poster Scheduled	Pre-sented
Bovine Gynecology and Obstetrics	38	18	17	6
Clinical Case presentation	41	30	53	28
Reproductive biotechnology	28	21	4	4
Andrology Semiology and AI	27	17	8	6
Small ruminant swine	18	11	6	6
Companion animal reproduction	20	14	8	8
Equine, camel and wild animal reproduction	13	11	9	7
<b>TOTAL</b>	<b>185</b>	<b>122</b>	<b>105</b>	<b>65</b>

**Total 187 presented out of 290 listed**

**Awards of the 38<sup>th</sup> Annual convention of ISSAR and International Symposium on 'Frontiers in Theriogenology: Research and Practice' held at College of Veterinary and Animal Sciences, Mannuthy from 6<sup>th</sup> to 8<sup>th</sup> December, 2023**

**1. Session I Bovine Gynaecology & Obstetrics (Oral) Young Scientist Award**

- Dr. Sakhare Abhijeet

Letrazole: A non-steroidal alternative for oestrus synchronization in cattle

**Best paper presentation award** No. of papers presented: 18

1. Dr. Selvaraju M.

Impact of different oestrus induction protocols with progesterone on ovulation and conception rate in Kangayam cows

2. Dr. Manokaran S.

Trans-gluteal aspiration of follicular cyst: a novel minimal invasive approach to resolve the non-responsive ovarian follicular cyst in cows

3. Dr. Raja S.

Postpartum ovarian rebound and fertility of crossbred cows supplemented with high energy diet during transition period

**2. Session 1 Bovine Gynaecology & Obstetrics (Poster) Young Scientist Award**

- Dr. Ankit Ahuja

Additional intracervical prostaglandin reduces induction to calving time in buffaloes affected with incomplete cervical dilatation post-uterine detorsion

**Best paper presentation award** No. of papers presented/considered: 5

1. Dr. Teja Allu

Effect of feeding sesame (*Sesamum indicum*) seeds on reproductive events in postpartum Murrah buffaloes

**3. Session II Clinical Case Presentation (Oral) Young Scientist Award**

- Dr. Gurbeer Singh Sandhu

Dicephalous derodimus tetrabrachius tetrapus thoracosternopagus dicaudatus monster in buffaloes: a case series

**Best paper presentation award** No. of papers presented: 30

1. Dr. Sunil Anand E.

Unilateral infectious orchiepididymitis and its therapeutic management in a German Shepherd dog

2. Dr. Aravind Suresh M

Surgical management of dystocia due to emphysematous foetus in a bitch

3. Dr. Aiswarya D.

A case of retained cystic ovaries with early neoplastic changes in a hysterectomised cat

**4. Session II Clinical Case Presentation (Poster) Young Scientist Award**

- Dr. Shalini G.

Successful surgical management of pyometra with uterine torsion in a cat – A case report

**Best paper presentation award** No. of papers presented/considered: 17

1. Dr. Satnam Singh

Successful management of dystocia due to foetal arthrogyrosis and polydactily through partial foetotomy in a Sahiwal cow

2. Dr. Venkannagowda Doddagaudar

Successful management of Dicephalous dystocia in non descript buffalo

3. Dr. Pradeep Singh

Dystocia due to foetal ascites in two crossbred cows

**5. Session III Reproductive Biotechnology (Oral) Young Scientist Award**

- Dr. Lavanya M.

Electrodynamic encapsulation of progesterone in pullulan nano fibres for controlled breeding in cattle: Fabrication, characterization and in vitro release behavior

**Best paper presentation award** No. of papers presented/considered: 19

1. Dr. Shiva Pratap Singh

Culture media and glucose dependant kinetics, cell migration and wound healing characteristics of caprine adult dermal fibroblast cells

2. Dr. Tomcy A.T.

Effect of varying concentrations of sheep serum on spermatogonial stem cells cryopreservation

3. Dr. Revathy M.M.

Evaluation of in vitro development after supplementing oocyte maturation medium with bovine follicular fluid exosomes

**6. Session III Reproductive Biotechnology (Poster)**

**Young Scientist Award**

- Dr. Sophia Xavier

Isolation and characterization of seminal plasma protein PDC 109 in Vechur bull and molecular characterization of Svsp 109 gene exon1 and exon4

**Best paper presentation award** No. of papers presented/considered: 5

1. Dr. Revathy M.M.

Characterization of bovine follicular fluid exosomes and evaluation of their impact on embryo viability

**7. Session IV Andrology, Seminology and Artificial Insemination (Oral)**

**Young Scientist Award**

- Dr. Nivethitha K.K.

Preservation of microencapsulated buck spermatozoa in goat milk extender at 4°C

**Best paper presentation award** No. of papers presented/considered: 16

1. Dr. Ajeet Kumar

Lameness in relation to libido, semen quality and freezability in crossbred bulls

2. Dr. Pradeep Kumar

Development of technologies to increase semen production and conception rate in buffaloes

3. Dr. Krishnappa B.

Successful separation of motile and immotile sperm from frozen thawed bull semen using the density media

**8. Session IV Andrology, Seminology and Artificial Insemination (Poster)**

**Young Scientist Award**

- Dr. Nilendu Paul

Combo nanopurification of semen: A novel approach for superior sperm selection

**Best paper presentation award** No. of papers presented/considered: 6

1. Dr. Ruthrakumar R.

Exemplary findings of prostatic involvement in seminoma affected dogs

2. Dr. Lekshmi Bhai K.

Post-thaw supplementation of seminal plasma improves the fertilization potential of cryopreserved spermatozoa of Malabari bucks

**9. Session V Small Ruminant and Swine Reproduction (Oral)**

**Young Scientist Award**

- Dr. Ruthrakumar R.

Trans-rectal pulse wave Doppler ultrasonography based comparative analysis of haemodynamic profile in pregnant and pre-cervical uterine torsion affected ewes

**Best paper presentation award** No. of papers presented/considered: 10

1. Dr. Sunil Kumar

Andrological and marker based investigation for fertility prediction in pigs

2. Dr. Prakash S.

A novel cervical balloon fixation technique to manage imperfect cervical dilatation in does

**10. Session V Small Ruminant and Swine Reproduction (Poster)**

**Young Scientist Award**

- Dr. Swatish V.S.

Preservability of boar cauda epididymal sperm, post incubation with specific seminal plasma fractions

**Best paper presentation award** No. of papers presented/considered: 5

- Dr. Senthilkumar K.

Conception and fecundity rates following synchronization of ovulation in Tellicherry goats

**11. Session VI Companion Animal Reproduction (Oral)**

**Young Scientist Award**

- Dr. Rahul Ram S.

Ultrasonographic grading of uterus and its prognostic value in medically managed cystic endometrial hyperplasia-pyometra complex in bitches

- Dr. Ananthapadmanabhan T.P.

Efficacy of buserelin, cabergoline and neutraceuticals on semen quality of subfertile male dogs

**Best paper presentation award** No. of papers presented/considered: 10

1. Dr. Hiron M. Harshan

Systemic inflammatory response syndrome, ultrasonographic grading of uterus, Doppler indices of uterine artery and bacterial biofilms – potential prognostic markers in canine pyometra

2. Dr. Mohit Kumar

Metabolic dynamics associated with medicinal management of canine pyometra

**12. Session VI Companion Animal Reproduction (Poster)**

**Young Scientist Award**

- Dr. Hitha K. Thilak

Clinico-pathogenic changes in canine pyometra, cystic endometrial hyperplasia and CEH-pyometra complex

**Best paper presentation award** No. of papers presented/considered: 5

1. Dr. Hiron M. Harshan

Borescope, a viable and affordable diagnostic aid in companion animal reproduction

**13. Session VII Equine, Camel and Wild Animal Reproduction (Oral)**

**Young Scientist Award**

- Dr. Bhathra N.R.

Salmonella induced abortion storm in donkeys at southern Tamil nadu

**Best paper presentation award** No. of papers presented/considered: 11

1. Dr. Sutharia T.V.

Growth rate and pre-ovulatory size of follicle in Marwari mares during estrus

2. Dr. Kalyan U.S.

Caesarean section due to dystocia in an Indian wild ass (*Equus hemionus khur*) (endangered species) – first case report

3. Dr. Nikitha P.

Non-invasive pregnancy detection in wild felids using enzyme immunoassay of fecal 13, 14 – dihydro 15 – keto – PGF<sub>2α</sub> metabolite (PGFM)

4. Dr. Mansuri M.M.

Investigating microbiome snap-shot during the oestrous cycle and early pregnancy in mares

**14. Session VII Equine, Camel and Wild Animal Reproduction (Poster)**

**Young Scientist Award**

- Dr. Nikitha P.

Reproductive parameters and behavior exhibited during estrus and copulation in lions and tigers

**Best paper presentation award** No. of papers presented/considered: 6

1. Dr. Sajjan Kumar

Production of live Marwari foals via embryo transfer technology for the first time in the country

2. Dr. Mayur Pawshe

Positive reinforcement conditioning in a tigress to voluntarily allow the collection of vaginal swabs

3. Dr. Dinesh J.

Per vaginal delivery in ventro-transverse presentation

The valedictory function of the International Symposium of ISSAR 2023 was held on 8<sup>th</sup> December at 12.30 PM. Dr. C. Jayakumar, Organizing Secretary, ISSAR 2023 offered welcome address and Prof. (Dr.) Shiv Prasad, President, ISSAR presided over the function. Valedictory address was given by Prof. (Dr.) K. Vijayakumar, Chairman of the organizing committee, ISSAR 2023 and Faculty Dean, CVAS, Mannuthy, followed by address of guest of honour, Prof. (Dr.) M.R. Saseendranath, Hon'ble Vice- Chancellor of Kerala Veterinary and Animal Sciences University. Prof. (Dr.) M. Selvaraju, Gen. Secretary, ISSAR presented the report of 38<sup>th</sup> Annual Convention and announced the awards of present symposium. The function was felicitated by Prof. (Dr.) P. Sudheer Babu, Registrar, KVASU, Prof. (Dr.) S.N. Rajakumar, Dean, VKIDFT, Mannuthy and Prof. (Dr.) N. Madhavan Unny, Director of Clinics, KVASU. During Valedictory function Dr. A. Fazil, Dr. P. Rakshita and Dr. M. Periannan have received ISSAR Best Field Veterinarian Award-2023 and Dr Gunjali Lattu has won Dr. S.N. Luktuke Extempore Young Scientist Award 2023. Dr. Shibu Simon, Gen. Convenor, ISSAR 2023 delivered vote of thanks.