



# CENTRE OF ADVANCED FACULTY TRAINING VETERINARY GYNAECOLOGY and OBSTETRICS Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana

## Introduction

Department of Veterinary Gynaecology & Obstetrics was established in 1976. Faculty is involved in; a) teaching animal reproduction to undergraduate & postgraduate students, b) carrying research to enhance reproductive efficiency of animals, and c) extending research to dairy farmers. Department has facilities of RIA/ELISA, ultrasonography, reproductive surgery and obstetrical maneuvering. About 119 students (94 M.V.Sc, 25 PhD) have earned degree in department. Recognized as 'Centre of Advanced Studies' in 1995 and designated as 'Centre of Advanced Faculty Training' in 'Veterinary Gynaecology & Reproduction' in 2009 by Indian Council of Agricultural Research. Under CAS/CAFT, department has conducted 21 courses and trained 208 teachers/scientists from State Universities/ICAR institutes. Several renowned scientists have visited to train faculty.



## Objectives of CAFT

Impart advanced training to the faculties from various State Agricultural Universities and ICAR institutes to enhance their professional capabilities and competence.

### Human Resource Development

Particulars of short courses/training program for HRD conducted during XI plan period

S.No.	Name of Programme	Period	No. of participants		
			Internal	External	Total
1	Improving post-partum fertility using nutritional and hormonal approaches in farm animals. Nov. 12 to Dec. 02, 2007	Nov. 12 to Dec. 02, 2007	4	4	8
2	Rational use of diagnostics for alleviating sub-fertility in domestic animals.	Jan. 23 to Feb. 12, 2008	2	5	7
3	“Investigating and advising on reproductive health management of dairy animals”	Oct. 30 to Nov. 19, 2008	2	13	15
4	Achieving dairy herd fertility objectives through integrated therapeutic and managerial practices.	Jan 09-29, 2009	2	3	5
5	Novel diagnostic preventive and therapeutic strategies in livestock and pet fertility	Jan 09-29, 2009	2	7	9
6	Advances in applications of diagnostic techniques in veterinary theriogenology.	Feb 16 to March 8, 2011	2	17	19
7	Prevention and therapeutic management of peri-parturient complications in domestic animals.	Aug 23 <sup>rd</sup> to 12 <sup>nd</sup> Sept, 2011	2	9	11

### Faculty Name & Designation (as on 30.9.2011)

S.No.	Name & Designation of the faculty members	Qualifications	Area of Expertise
1	Dr V K Gandotra, Professor-cum-Head-cum-Director CAFT	PhD, Post doctorate (UK)	Animal Reproduction, Gynaecology & Obstetrics

2	Dr S Prabhakar, CoE-cum-Professor	PhD, Post doctorate (UK)	-do-
3	Dr Jagir Singh, Senior Gynaecologist	PhD, Post doctorate (UK)	-do-
4	Dr Parkash Singh, Professor	PhD	-do-
5	Dr S P S Ghuman, Associate Professor	PhD (UK)	-do-
6	Dr V K Singla, Assistant Professor	MVSc	-do-
7	Dr Mrigank Honparkhe, Assistant Gynaecologist	PhD	-do-
8	Dr Ajeet Kumar, Assistant Professor	PhD	-do-
9	Dr Dinesh Dadarwal, Assistant Gynaecologist	MVSc	-do-
10	Dr Ashwani Kumar Singh, Assistant Professor	MVSc	-do-
11	Dr (Mrs) Ranjna S. Cheema, Reproduction Physiologist	PhD	Animal Reproduction
<b>*Subject-matter specialist faculty associated with CAS posted in other departments of the University</b>			
12	Dr G S Dhaliwal, Professor	PhD (UK), Post doctorate (UK)	Animal Reproduction, Gynaecology & Obstetrics
13	Dr H K Verma, Professor cum Head	PhD	-do-
14	Dr P S Mavi, Associate Professor	PhD	-do-
15	Dr Prahlad Singh, Associate Professor	PhD	-do-
16	Dr Rajesh Kasrija, Assistant Professor	MVSc	-do-
17	Dr Narinder Singh, Assistant Professor	MVSc	-do-

**Infrastructure development (equipment etc)**

Nil

**Renovation of Lecture room/Laboratories**

Nil

**Library Upgraded**

An updated library with latest books has been established at the Department. A total of 31 books have been purchased with CAS/CAFT funds during XI plan (2007-2011)

**Awards/Recognitions**

- Dr A.S. Nanda, Professor designated as Animal Husbandry Commissioner, Govt of India (July 2010 - till date).

- Dr V.K. Gandotra, Professor designated as Vice-President, Indian Society for the Study of Animal Reproduction (Nov 2010 - till date).
- Dr Jagir Singh, SPS Ghuman and M Honparkhe (2010) received 'Appreciation Souvenir' from 'Smooch Gram Panchayat', Vill. Badbar, Barnala for improving dairy animal fertility Animal Welfare Camp, Dist. Barnala

### **Faculty**

- Dr Ajeet Kumar, Asstt Professor awarded Canadian Commonwealth Fellowship, Graduate Student Exchange Programme, University of Saskatchewan, Canada from Nov 2009 to April 2010.
- Dr M. Honparkhe, Asstt Gynaecologist awarded Canadian Commonwealth Fellowship, Graduate Student Exchange Programme, University of Saskatchewan, Canada from May - Oct 2010.
- Dr M. Honparkhe, Asstt Gynaecologist awarded Young Scientist Award (Poster) during XXIV Convention of ISSAR, Bangalore, 2008.
- Dr R.S. Cheema, Physiologist awarded 2<sup>nd</sup> Best Presentation (Poster) during XXV Congress of Andrology, Jodhpur, 2009.
- Dr R.S. Cheema, Physiologist awarded 2<sup>nd</sup> Best Presentation (Poster) during XXVI Convention of ISSAR, Pantnagar, 2010.
- Dr A.K. Singh, Asstt Prof awarded Young Scientist Award (Oral) during XXVI Convention of ISSAR, Pantnagar, 2010.
- Dr S.P.S. Ghuman, Assoc Professor awarded Best Presentation (Oral) during XXVI Convention of ISSAR, Pantnagar, 2010.
- Dr S.P.S. Ghuman, Assoc Professor awarded Best Presentation (Poster) during XXVI Convention of ISSAR, Pantnagar, 2010.
- Dr S.P.S. Ghuman, Assoc Professor awarded Best Presentation (Poster) during International Buffalo Congress, New Delhi, 2010.
- Dr S.P.S. Ghuman, Assoc Professor received 'Certificate of Honour' for The Best Article published in Intas Polivet, Vol. 11, No. 1, 2010.
- Dr S.P.S. Ghuman, Assoc Professor awarded Nils Lagerlof Memorial Award-2010' during XXVII Convention of ISSAR, Aizawl, Mizoram, 2011.
- Dr S.P.S. Ghuman, Assoc Professor awarded NC Sharma Memorial Award-2011' during XXVII Convention of ISSAR, Aizawl, Mizoram, 2011.
- Dr S.P.S. Ghuman, Assoc Professor awarded Best Presentation (Oral) during XXVII Convention of ISSAR, Aizawl, Mizoram, 2011.
- Dr M. Honparkhe, Asstt Gynaecologist awarded Best Presentation (Poster) during XXVII Convention of ISSAR, Aizawl, Mizoram, 2011.

### **Post graduate Students**

- Dr S. Sharma, MVSc Scholar awarded Young Scientist Award (Oral) during XXIV Convention of ISSAR, Bangalore, 2008.
- Dr S.S. Dhindsa, PhD Scholar awarded Young Scientist Award (Oral) during XXV Convention of ISSAR, Chennai, 2009.
- Dr G. Nazir, MVSc Scholar awarded Best Clinical Case Presentation (Poster) during XXV Convention of ISSAR, Chennai, 2009.

- Dr A.K. Pandey, PhD Scholar awarded Young Scientist Award (Oral) during XXVI Convention of ISSAR, Pantnagar, 2010.
- Dr Emy Elizabeth Varughese, MVSc Scholar awarded Best Clinical Case Presentation in Companion Animal Reproduction during International Symposium and 3rd Clinical Case Management Competition, Chennai, 2011.

## **Publications**

### **International**

- (1) Sathya, A., Prabhakar, S., Sangha, S.P.S. and Ghuman, S.P.S. 2007. Vitamin E and selenium supplementation reduces plasma cortisol and oxidative stress in dystocia-affected buffaloes. *Veterinary Research Communications*, 31: 809-818.
- (2) Honparkhe, M., Jagir Singh, Dadarwal, D., Dhaliwal, G.S. and Ajeet Kumar. 2008. Estrus induction and fertility rates in response to exogenous hormonal administration in postpartum anestrus and subestrus bovines. *Journal of Veterinary Medical Science*, 70: 1327-1331.
- (3) Ghuman, S.P.S., Kumar, A. and Honparkhe, M. 2009. A preliminary study on plasma haptoglobin concentrations in buffaloes following spontaneous or assisted delivery. *Buffalo Bulletin*, 28: 127-130.
- (4) Sharma, S., Davies Morel, M.C. and Dhaliwal, G.S. 2010. Factors affecting the incidence of postpartum oestrus, ovarian activity and reproductive performance in Thoroughbred mares bred at foal heat under Indian subtropical conditions. *Theriogenology*, 74: 90-99.
- (5) Sharma, S., Dhaliwal, G.S. and Dadarwal, D. 2010. Reproductive efficiency of Thoroughbred mares under Indian subtropical conditions: A retrospective survey over 7 years. *Animal Reproduction Science*, 117: 241-248.
- (6) Sharma, S., Davies Morel, M.C., Dhaliwal, G.S. and Dadarwal, D. 2010. The pattern of embryonic fixation and its relationship to pregnancy loss in thoroughbred mares. *Reproduction in Domestic Animals*, 45: e61-67.
- (7) Ghuman, S.P.S., Jagir Singh and Honparkhe, M. 2010. Protrusion of an ovary through vaginal tear subsequent to replacement of a post-partum uterine prolapse in a buffalo. *Buffalo Bulletin*, 29: 308-310.
- (8) Lalthazuali, Jagir Singh, Ghuman, S.P.S., Pandey, A.K., Uppal, S.K., Ahuja, C.S. and Dhaliwal, G.S. 2010. Effect of insulin treatment during post-AI mid-luteal phase on the blood biochemical profile and conception rate in buffaloes. *Buffalo Bulletin*, 29: 250-255.
- (9) Ghuman, S.P.S., Jagir Singh, Honparkhe, M., Dadarwal, D., Dhaliwal, G.S. and Jain, A.K. 2010. Induction of ovulation of ovulatory size nonovulatory follicles and initiation of ovarian cyclicity in summer anoestrous buffalo heifers (*Bubalus bubalis*) using melatonin implants. *Reproduction in Domestic Animals*, 45: 600-607.
- (10) Pandey, A.K., Dhaliwal, G.S., Ghuman, S.P.S. and Agarwal, S.K. 2011. Impact of pre-ovulatory follicle diameter on plasma estradiol, subsequent luteal profiles and conception rate in Buffalo (*Bubalus bubalis*). *Animal Reproduction Science*, 123: 169-174.

- (11) Cheema, Ranjana S., Bansal, A.K., Bilaspuri, G.S., and Gandotra, V.K. 2011. Correlation between the proteins and protein profile(s) of different regions of epididymus and their contents in goat buck. *Animal Science papers and Reports*, 29: 75-84.
- (12) Malik, A.A., Gandotra, V.K., Brar, P.S., Ghuman, S.P.S. and Dhaliwal, G.S. 2011. Attenuation of luteolytic response following fish meal supplementation in dairy buffaloes (*Bubalus bubalis*). *Animal Reproduction Science*, 126: 45-49.
- (13) Cheema, Ranjna S., Bakhri, G., Gandotra, V.K. and Dhanju, C.K. 2011. Characterization of mongrel dog seminal plasma proteins and their correlation with semen characteristics. *Journal of Reproductive & Stem cell Biotechnology*, 2: 55-63.

### **National**

- (14) Behl, K.S., Gandotra, V.K., Nanda, A.S. and Mavi, P.S. 2007. Efficacy of GnRH in inducing ovulation and improving the conception rates in crossbred cattle with history of prolonged estrus. *Indian Journal of Animal Sciences*, 77: 173-174.
- (15) Dhindsa, S.S., Gandotra, V.K. and Prabhakar, S. 2007. Plasma and blood volume in dystocia affected buffaloes. *Indian Journal of Animal Sciences*, 77: 837-839.
- (16) Bedi, M., Jagir Singh, Dadarwal, D. and Dhaliwal, G.S. 2007. Effect of intravenous supplementation of soyabean oil on pregnancy rate in repeat breeding cross-bred cows. *Indian Journal of Animal Sciences*, 77: 293-296.
- (17) Bedi, M., Jagir Singh, Gandotra, V.K., Dadarwal, D. and Dhaliwal, G.S. 2007. Incidence of repeat breeding; variation of fertile estrus with respect to season and duration of estrus, and progesterone profile of repeat breeding cross bred cattle. *Indian Journal of Animal Sciences*, 77: 355-358.
- (18) Dadarwal, D., Honparkhe, M., Jagir Singh, Cheede, G.S. and Ajeet Kumar. 2007. Efficacy of double injection of Buserelin in improving pregnancy rates in prolonged oestrus repeat breeding crossbred cattle. *Indian Journal of Animal Sciences*, 77: 544-548.
- (19) Dadarwal, D., Jagir Singh, Honparkhe, M., Dhaliwal, G.S. and Cheede, G.S. 2007. Field efficacy of E coli lipopolysaccharide intrauterine infusion in treating endometritis in cross-bred cows. *Indian Journal of Animal Sciences*, 77: 1224-1227.
- (20) Saini, J.S., Dhaliwal, G.S., Ghuman, S.P.S. and Ajeet Kumar. 2007. Reliability of ultrasonography for detecting the ovarian changes across the estrous cycle in buffaloes. *Indian Journal of Animal Sciences*, 77: 940-944.
- (21) Honparkhe, M., Gandotra, V.K. and Nanda, A.S. 2007. Ultrasonographic size and characteristics of reproductive organs of repeat breeder buffaloes (*Bubalus bubalis*). *Indian Journal of Animal Sciences*, 77: 821-824.
- (22) Brar, P.S. and Nanda, A.S. 2007. Effect of prepartum supplementary feeding of urea molasses multi-Nutrient block on postpartum production and fertility in dairy buffaloes. *Indian Journal of Animal Sciences*, 77: 965-969.
- (23) Kang, R.S., Nanda, A.S., Brar, P.S., Honparkhe, M., Gandotra, V.K. and Jindal, R. 2007. Plasma biochemical alterations in relation to induction of oestrus

- through supplementary feeding and hormonal treatment in summer anoestrus buffaloes. *Indian Journal of Animal Sciences*, 77: 359-362.
- (24) Prabhakar, S., Matharu, S.S., Gandotra, V.K. and Brar, R.S. 2007. Corpus luteum does not contribute to higher progesterone concentration around parturition in buffaloes with uterine torsion. *Indian Journal of Animal Sciences*, 77: 956-959.
- (25) Honparkhe, M., Dhindsa, S.S., Ghuman, S.P.S. and Kumar A. 2007. Dystocia due to muscular hypertrophy of fetal neck in a buffalo. *Indian Journal of Animal Reproduction*, 28: 82-83.
- (26) Brar, P.S. and Prabhakar, S. 2007. A case of atypical monster in a buffalo. *Indian Journal of Animal Reproduction*, 28: 92-93.
- (27) Brar, P.S., Singh, H. and Prabhakar, S. 2007. Rupture of pre-pubic tendon and ventral abdominal wall in a pregnant mare. *Indian Journal of Animal Reproduction*, 28: 94-95.
- (28) Brar, P.S., Singh, H., Sharma, D.K. and Nanda, A.S. 2007. Antibigram of bacteria isolated from the peritoneal fluid of uterine torsion affected buffaloes. *Indian Journal of Animal Reproduction*, 28: 72-73.
- (29) Ajeet Kumar, Honparkhe, M., Jagir Singh and Dhaliwal, G.S. 2008. Infertility due to unilateral hypoplasia with excessive sperm abnormalities in a male dog. *Indian Journal of Animal Reproduction*, 29: 222-223.
- (30) Ajeet Kumar, Jagir Singh, Honparkhe, M., Dadarwal, D. and Dhaliwal, G.S. 2008. Gonadal Steroids and Thyroid Hormones in Non-responding GnRH Treated Poor Libido Breeding Bulls. *Indian Journal of Animal Reproduction*, 29: 181-184.
- (31) Narinder Singh, Nanda, A.S. and Jagir Singh. 2008. Assessment of factors affecting conception rate in cross-bred cows following AI under field conditions. *Indian Journal of Animal Reproduction*, 29: 211-215.
- (32) Saini, J.S., Dhaliwal, G.S., Ghuman, S.P.S. and Kumar, A. 2008. Reliability of ultrasonography for diagnosing genital tract abnormalities in buffaloes. *Indian Journal of Animal Reproduction*, 29: 106-111.
- (33) Sathya, A., Prabhakar, S., Ghuman, S.P.S. and Mishra, Y. 2008. Plasma cortisol concentrations in calves delivered from uterine torsion affected buffaloes. *Indian Journal of Animal Reproduction*, 29: 64-65.
- (34) Honparkhe, M., Kumar, A., Ghuman, S.P.S. and Dhaliwal, G.S. 2008. Dystocia due to fetopelvic disproportion in a squirrel monkey. *Indian Journal of Animal Reproduction*, 29: 123.
- (35) Honparkhe, M., Ghuman, S.P.S., Kumar, A. and Sathya, A. 2008. Delivery of a macerated buffalo fetus by left-flank laprohysterotomy. *Indian Journal of Animal Reproduction*, 29: 115-116.
- (36) Ghuman, S.P.S., Nanda, A.S., Prabhakar, S., Gandotra, V.K. and Honparkhe, M. 2008. Recurrent vaginal prolapse in a crossbred cow due to Cystic Gartner's ducts. *Indian Journal of Animal Reproduction*, 29: 219.
- (37) Ghuman, S.P.S., Honparkhe, M., Sood, N.K. and Gupta, K. 2008. A rare case of placental lipoma in Holstein Friesian crossbred cow. *Indian Journal of Animal Reproduction*, 29: 230-231.

- (38) Sathya, A., Prabhakar, S., Ghuman, S.P.S. and Mishra, Y. 2008. Plasma cortisol concentrations in calves delivered from uterine torsion affected buffaloes. *Indian Journal of Animal Reproduction*, 29: 64-65.
- (39) Singh, A.K. and Brar, P.S. 2008. Hydrocephalic fetus: A rare case of fetal dystocia in a cow. *Indian Journal of Animal Reproduction*, 29: 124-125.
- (40) Kumar, A., Jagir Singh, Dhaliwal, G.S. and Pawan Singh. 2008. Incidence and factors associated with poor libido in breeding buffalo bulls. *Indian Journal of Animal Sciences*, 78: 143-145.
- (41) Jagir Singh, Kasrija, R., Dhaliwal, G.S., Gandotra, V.K. and Honparkhe, M. 2008. Effect of post insemination progesterone supplementation on conception rate in repeat breeding cattle. *Indian Journal of Animal Sciences*, 78: 281-282.
- (42) Jagir Singh, Dadarwal, D., Honparkhe, M., Dhaliwal, G.S. and Gandotra, V.K. 2008. Endocrinological interventions and subsequent conception of repeat breeding cows having cystic ovarian follicles. *Indian Journal of Animal Sciences*, 78: 353-356.
- (43) Jagir Singh, Singla, P., Dhaliwal, G.S., Ajeet Kumar and Banga, H.S. 2008. Histopathological alteration in uterus and effect of immunomodulatory therapy on fertility of repeat breeding cows with subclinical endometritis. *Indian Journal of Animal Sciences*, 78: 710-713.
- (44) Honparkhe, M., Dadarwal, D., Ghuman, S.P.S., Jagir Singh, Dhaliwal, G.S. and Singh, N. 2008. Influence of rectal message of ovaries in anestrus buffaloes. *Indian Journal of Animal Sciences*, 78: 1376-1377.
- (45) Dhindsa, S.S., Dhaliwal, G.S. and Ghuman, S.P.S. 2008. Biochemical alterations in bovines due to caesarean operation with reference to suture material and intra-peritoneal lubricant. *Indian Journal of Animal Sciences*, 78: 1082-1085.
- (46) Dhindsa, S.S., Dhaliwal, G.S. and Ghuman, S.P.S. 2008. Effect of delay in dystocia on biochemical alterations in bovines. *Indian Journal of Animal Sciences*, 78: 1119-1120.
- (47) Brar, P.S. and Nanda, A.S. 2008. Improving reproductive performance of anoestrus buffaloes through supplementary feeding of urea molasses multi-nutrient block. *Indian Journal of Animal Sciences*, 78: 606-608.
- (48) Brar, P.S., Saigal, R.P., Nanda, A.S. and Sharma, R.D. 2008. Role of broad ligament in the causation of uterine torsion in dairy buffaloes. *Indian Journal of Animal Sciences*, 78: 940-942.
- (49) Brar, P.S., Saigal, R.P., Sharma, R.D. and Nanda, A.S. 2008. Histology and histochemistry of broad ligaments in buffaloes. *Indian Journal of Animal Sciences*, 78: 464-467.
- (50) Brar, P.S., Saigal, R.P., Sharma, R.D. and Nanda, A.S. 2008. Is weak broad ligament a predisposing factor for uterine torsion in dairy buffaloes? *Indian Journal of Animal Sciences*, 78: 943-946.
- (51) Honparkhe, M., Kumar, A. and Ghuman, S.P.S. 2008. Dystocia due to *Scistocormus fissispinalis* in a buffalo calf. *Indian Veterinary Journal*, 85: 770-771.
- (52) Ghuman, S.P.S., Honparkhe, M., Gandotra, V.K. and Kumar, A. 2008. Multiple fetal monstrosities during a gestation in a bitch. *Indian Veterinary Journal*, 85: 772-773.



- (53) Honparkhe, M., Ghuman, S.P.S., Kumar, A. and Dhaliwal, G.S. 2008. Crooked calf disease leading to dystocia in a buffalo. *Indian Veterinary Journal*, 85: 906-907.
- (54) Jagir Singh, Ghuman, S.P.S., Honparkhe, M. and Singh, N. 2009. Investigations on dominant follicle development, estrus response, ovulation time and fertility in PRID-treated anestrous buffalo heifers (*Bubalus bubalis*). *Indian Journal of Animal Sciences*, 79: 773-777.
- (55) Honparkhe, M., Ghuman, S.P.S., Dadarwal, D., Jagir Singh and Dhaliwal, G.S. 2009. Embryonic mortality and luteal profile in buffaloes administered GnRH at the onset of estrus or hCG 5 days after AI. *Indian Journal of Animal Sciences*, 79: 778-780.
- (56) Cheede, G.S., Pangaonkar, G.R. and Jagir Singh. 2009. Effect of ascorbic acid and chloroquine diphosphate on the quality and fertility of buffalo (*Bubalus bubalis*) semen. *Indian Journal of Animal Sciences*, 79: 858-860.
- (57) Dadarwal, D., Ghuman, S.P.S., Honparkhe, M. and Jagir Singh. 2009. Synchronization of ovulation and subsequent fertility in buffaloes following PGF<sub>2α</sub> - PGF<sub>2α</sub> protocol, with or without GnRH. *Indian Journal of Animal Sciences*, 79: 861-865.
- (58) Honparkhe, M., Ghuman, S.P.S., Kumar, A., Sood, N.K., Gupta, K. and Ahuja, C.S. 2009. Cervical massage with sodium carboxy methyl cellulose for achieving complete cervical dilatation in successfully detorted uterine torsion affected buffaloes. *Indian Journal of Animal Sciences*, 79: 26-29.
- (59) Dhindsa, S.S., Dhaliwal, G.S., Sood, N.K. and Ghuman, S.P.S. 2009. Blood biochemical and uterine tissue alterations in relation to duration of dystocia in caesarean-operated bovines. *Indian Journal of Animal Sciences*, 79: 30-33.
- (60) Kumar, A., Ghuman, S.P.S. and Honparkhe, M. 2009. Effect of oral fluid therapy in combination with intravenous dextran-40 and hypertonic saline solution on plasma and blood volume in dystocia affected buffaloes. *Indian Journal of Animal Sciences*, 79: 479-82.
- (61) Singh, A.K., Brar, P.S. and Gandotra, V.K. 2009. Status and costs of raising replacement dairy heifers in rural, rural commercial and peri-urban areas of Punjab. *Indian Journal of Animal Sciences*, 79: 692-695.
- (62) Singh, A.K., Brar, P.S., Gandotra, V.K., Nanda, A.S. and Prakash, B. 2009. Variation in hypophyseal responsiveness to synthetic GnRH induced LH release and reproductive performance in dairy buffalo with luteal activity during early postpartum period. *Indian Journal of Animal Sciences*, 79: 866-870.
- (63) Honparkhe, M., Jagir Singh, Dadarwal, D. and Dhaliwal, G.S. 2009. Progesterone profiles and fertility in relation to metoestrus bleeding in crossbred dairy cows. *Indian Veterinary Journal*, 86: 328-329.
- (64) Kumar, A., Jagir Singh, Honparkhe, M. and Dhaliwal, G.S. 2009. Teratozoospermia due to unilateral varicocele in a breeding bull: a case report. *Indian Veterinary Journal*, 86: 427-428.
- (65) Jagir Singh, Ajeet Kumar, Honparkhe, M., Dadarwal, D. and Dhaliwal, G.S. 2009. Effect of GnRH therapy on plasma testosterone, estradiol, T3, T4 and libido in breeding bulls. *Indian Veterinary Journal*, 86: 627-629.

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- (67) Kumar, A., Ghuman, S.P.S., Ahuja, C.S. and Honparkhe, M. 2009. Effect of oral fluid therapy on endocrine and biochemical status of dystocia affected buffaloes. *Indian Veterinary Journal*, 86: 1021-1023.
- (68) Singh, A.K., Brar, P.S., Gandotra, V.K. and Prabhakar, S. 2009. Congenital Perocephalus brachyrhynchus with Perocephalus anomatus in a buffalo calf. *Indian Veterinary Journal*, 86: 732-733.
- (69) Singh, A.K., Brar, P.S., Pandey, A.K., Gandotra, V.K. and Prabhakar, S. 2009. Amorphus globosus monster in a buffalo. *Indian Veterinary Journal*, 86: 846-847.
- (70) Sharma, S., Dhaliwal, G.S., Ghuman, S.P.S. and Jagir Singh. 2009. Efficacy of prostaglandin and antiseptic therapy for endometritis in buffaloes. *Indian Veterinary Journal* 87: 400-401.
- (71) Singh, A.K., Brar, P.S., Singla, V.K., Gandotra, V.K., Nayyar, S. and Jindal, R. 2009. Effect of obstetrical maneuvers on mineral and biochemical profiles in dairy buffaloes. *Veterinary Practitioner*, 10: 116-121.
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- (73) Ghuman, S.P.S., Jagir Singh, Honparkhe, M. and Dadarwal, D. 2009. Induction of ovulatory estrus using Ovsynch protocol and subsequent fertility in true anestrous buffalo heifers (*Bubalus bubalis*). *Indian Journal of Animal Reproduction*, 30: 1-5.
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- (75) Honparkhe, M., Malik, A.A., Ghuman, S.P.S. and Jagir Singh. 2009. A rare case of dystocia in a bitch due to fetal cervico-thoracic hematoma along with Amelia of hind limbs. *Indian Journal of Animal Reproduction*, 30: 83-84.
- (76) Ghuman, S.P.S., Nazir, G., Ganie, M.A. and Phawa, B. 2009. Delivery of Arthrogyposis-Scoliosis fetus in a buffalo through partial fetotomy. *Indian Journal of Animal Reproduction*, 30: 92-93.
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- (78) Singh, A.K., Prabhakar, S., Banga, H.S., Brar, P.S. and Gandotra, V.K. 2010. Histopathological observations in cervix of dystocia affected vis-à-vis normally calved buffaloes. *Indian Journal of Animal Sciences*, 80: 842-846.
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- (81) Dhindsa, S.S., Dhaliwal, G.S. and Ghuman, S.P.S. 2010. Prevention of uterine adhesion formation following caesarean section in bovines. *Indian Journal of Animal Sciences*, 80: 626-628.
- (82) Dhindsa, S.S., Dhaliwal, G.S., Ghuman, S.P.S. and Sood, N.K. 2010. Alterations in uterine and peritoneal fluid cytology as well as uterine histopathology following caesarean operation with reference to suture material and intra-peritoneal lubricant in bovines. *Indian Journal of Animal Sciences*, 80: 523-527.
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### Financial Statement

Expenditure under CAFT during XI Plan

<b>Head</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>
Operating cost of Training	108969	221829	150000	253906	98476
Recurring contg.	199995	199989	149960	199989	9058
Non-recurring Contg.	-	-	-	-	-
TA	48360	26285	8589	12784	3155
Library	46797	49602	4314	27320	-
<b>Total</b>	<b>404121</b>	<b>497705</b>	<b>313589</b>	<b>493999</b>	<b>161337</b>