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Training of women and men veterinarians on cattle artificial insemination in northwest Vietnam

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Name of training event	**Training of women and men veterinarians on cattle artificial insemination in northwest Vietnam**
Aim of the course	This course aimed to build the capacity of women and men veterinarians in cattle artificial insemination. Following successful completion of the training course the trainees were certified as qualified cattle artificial insemination service providers.
Dates	24/11–16/12/2020; 21 days ((on class; on slaughterhouse; on farm)
Venue(s)	Agricultural Service center of Mai Son district; a slaughterhouse in Chieng Mung commune; Khoa village (Chieng Chung commune) and Mon 1 village (Chieng Luong commune), Chieng Chung People committee; Chieng Luong people committee; on some cattle farms in Chieng Chung and Chieng Luong communes.
Instructors and their affiliation	▪ Nguyen Van Hanh, head of the Department of Embryo Technology, Vietnam Academy of Science and Technology ▪ Tran Son Ha, former Department of Artificial Insemination and Embryo Transfer, Department of Livestock Systems and Environmental Research, National Institute of Animal Science (NIAS), Vietnam ▪ Nguyen Huu Huan, Animal Husbandry Research and Development Center for Mountainous Zone, NIAS, Vietnam ▪ Luu Van Chinh, TH milk company, Nghia Dan district, Nghe An province
Participant information, including number by gender	19 participants comprising village and communal veterinarian workers and bull keepers; of which three (16%) were of H'Mong ethnicity, four (21%) Kinh ethnicity and 12 (63%) Thai ethnicity; and seven (37%) were female and 12 (63%) were male.
Linked project or program	This training was offered under the Livestock-led interventions towards equitable livelihoods and improved environment in the Northwest of Vietnam (Li-Chan) project, implemented by partners of the CGIAR Research Program on Livestock. See https://livestock.cgiar.org/news/community-engagement-key-success-livestock-systems-transformation-project-northwest-vietnam for more details.
Funder	Livestock CRP
Course summary or agenda	The training was one of a series around cattle and pig genetics implemented as part of the Li-Chan project. The training series comprised that on: (a) cattle and pigs breeds, breeding and artificial insemination (b) Ban boar semen collection and semen quality evaluation (c) artificial insemination procedure in pigs (d) artificial insemination procedure in cattle (this training) This course aimed to build the capacity of veterinary workers and bull keepers in cattle artificial insemination, resulting in qualified and certified cattle artificial insemination service providers. The certification was issued by the Animal Husbandry Research and Development Center for Mountainous Zone, National Institute of Animal Science (this is one of the organizations mandated by the Ministry of Agriculture and Rural Development (MARD) for issuing the professional certification of cattle artificial insemination). Training topics including how to detect cattle in heat; the advantages of

	artificial insemination over natural mating; theory and practice of performing artificial insemination in cattle; and that on cattle breeds / semen types and semen suppliers. The course was implemented over 21 days comprising both theoretical and practical sessions. **Training agenda:**

Day	Topic: morning session 0830–1130	Topic: afternoon session 1400–1700
1	- Opening - Orientation and development strategy for cattle breeding in Vietnam.	- New breeding techniques for cattle breeds in Vietnam.
2	- Physiological characteristics reproductive in cows. - Genital surgery of cows.	- Breeding techniques for some breeds - Theory of artificial insemination for cows - Using sexed semen and technologies related to some new breeds of cattle in Vietnam.
3	- Methods of detecting heat in cows and appropriate timing of insemination. - Taking notes and managing artificial insemination	- Practice manipulation on artificial insemination tools..
4	-Technical process of breeding cows to improve their fertility.	-Practice artificial insemination on a cow's uterus.
5	- Methods of diagnosing pregnant female cattle	- Practice artificial insemination on a cow's uterus.
6	- Reproductive diseases in cows and treatments	- Practice on live cows (slaughterhouse)
7	- Some common diseases in cow breeding	- Practice on live cows (slaughterhouse)
8	- Introduction of technology and techniques of embryo transfer	- Practice on live cows (slaughterhouse)
9	- The process of inducing heat in cows	- Practice on live cows (slaughterhouse, farm)
10	- Practice on live cows (slaughterhouse)	- Practice on live cows (slaughterhouse)
11	- Practice on live cows (slaughterhouse)	- Practice on live cows (slaughterhouse)
12	Practice on live cows (farm)	Practice on live cows (farm)
13	Practice on live cows (farm)	Practice on live cows (farm)
14	Practice on live cows (farm)	Practice on live cows (farm)
15	Practice on live cows (slaughterhouse)	Practice on live cows (slaughterhouse)
16	Method of supporting cow when calving and intervening in difficult calving cases in cows.	Introduction of drugs and hormones commonly used to treat fertility disorders in cows
17	Nutrition and feed for cows to improve the efficiency of breeding and reproduction	- Use some tools and equipment to recognize cow in heat and diagnose reproductive disorders
18	Review; additional practices	Review; additional practices
19	Review skills and manipulate artificial insemination on the uterus and pelvis.	Examination of trainee's artificial insemination skills on live cows (slaughterhouse)

		20	Some problems related to reproductive physiology, reproductive diseases, and artificial insemination to improve the efficiency of breeding and reproduction for cows. - Some techniques to remember in artificial insemination	- Trainees review the theoretical parts of artificial insemination techniques introduced by themselves. - Oral Exam
		21	- Questions and Answers; discussions - Closing classes, granting practice certificates to students.	
Links to training material, if available	Hard copies of training materials in Vietnamese were distributed to all participants.			
Any other remarks	• All of 19 participants were certified • 100 cows were selected based on body scoring conditions in which 60 cows were examined; 27 cows meeting the requirements for artificial insemination (13 in Chieng Luong commune and 14 in Chieng Chung commune) • 13 cows in Chieng Luong were artificially inseminated. After 42 days, nine cows did not return to heat (thus likely pregnant) whilst four cows returned to heat (thus not pregnant) • 14 cows in Chieng Luong were artificially inseminated. After 42 days, 11 cows did not return to heat (thus likely pregnant) whilst three cows returned to heat (thus not pregnant) • After the training course, the problems of reproductive disease and poor body condition of the local cattle herd were discussed among the project team. Improved animal health and nutrition were noted as being necessarily to improve this situation. This attests to the need for packaged interventions, particularly on health, feed and genetics. • The newly certified trainees have had discussions with the local Department of Agriculture and Rural Development (DARD) and other local authorities re continued future support to enable them to be practicing artificial insemination service providers.			

Photos	
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