The Experimental Facility for Cattle (EFC) installations at the Leibniz Institute for Farm Animal Biology (FBN) – 1) Barn

Research topics:	The EFC infrastructure at the Leibniz Institute for Farm Animal Biology (FBN) offers services in four installations: (1) Barn, (2) RespCham, (3) ExpPhysRoom, and (4) BehavArena. The installation experimental **Barn** is dedicated to research on dairy cows including aspects of Nutritional and Behavioral Physiology but also allows carrying out in vivo experimental vaccinations. Other research topics deal with the comparison of different phenotypes or genotypes when kept under the same environmental, feeding and housing conditions.
Activities and services currently offered by the infrastructure/installation:	The **Barn** was built in 2013 and offers space for 60 free-ranging lactating German Holstein dairy cows plus space for 12 dry cows in straw-bedded boxes and 14 tied-stall places. The older barn buildings offer room for further 40 free-ranging cows. Both barns are equipped with automated feeding troughs to measure individual feed and water bouts and from these, daily feed and water intake is calculated. Roughage feeding is based on grass and maize silage and usually offered as total mixed ration. The herd is housed in the barn the whole year and all animals are genotyped. The barn is equipped with a balance to determine body weight and with an in-house developed device to measure signs of lameness. Animals are milked twice daily in an auto-tandem milking parlour. Individual milk yield is determined twice per day and milk samples are analysed routinely once per week. The body condition score is measured usually every two weeks manually. A GreenFeed® system (C-Lock Inc.) for estimating individual CH_4 production is available. Individual movements of cows through the barn are recorded daily by use of the Track-Lab system (Noldus). An ultrasound instrument is available for back-fat measurement. Air temperature and humidity are automatically recorded in the barn three times a day. Publication of a study performed in the **'Barn'** installation: Rischewski J, Bielak A, Nürnberg G, Derno M, Kuhla B. Rapid Communication: Ranking dairy cows for methane emissions measured using respiration chamber or GreenFeed techniques during early, peak, and late lactation. J Anim Sci. 95:3154-3159, 2017.
Description of the access to be provided under SmartCow TNA calls:	Users are supported by experienced staff with total respect of confidentiality. Assistance in obtaining ethic approval can be provided. Users can be present and may actively participate in the experiment, according to their preferences and practical competencies. The unit of access is defined as one cow*week. Duration of access may last 100 days. Access includes provision of animals, local feed, housing, veterinary services, assistance with sample collection feeding, milking and daily care. Access does not include shipping of samples.
Animal types, diets, housing and experimental conditions that can be	Studies can be performed with German Holstein cows fed total mixed ration based on grass and maize silage.

worked on in this infrastructure/installation:	
Travel and subsistence costs:	Travel and subsistence costs of applicants can be reimbursed. Applicants should limit their stay to a total of 12 days spent at the infrastructure. Reimbursement is provided for a total of 12 days (e.g. 1 person for a total of 12 days or 2 persons for a total of 6 days).
Infrastructure/installation ethical rules:	Researchers submit their protocols for authorisation to the „Landesamtes für Landwirtschaft, Lebensmittelsicherheit und Fischerei (LALLF), State of Mecklenburg-Vorpommern“. Assistance in obtaining ethic approval can be provided (applications must be in German language).