

The Experimental Facility for Cattle (EFC) installations at the Leibniz Institute for Farm Animal Biology (FBN) – 4) BehavArena

<p>Research topics:</p>	<p>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 'BehavArena' is dedicated to research on dairy heifers and calves, especially behavioral investigations. Research topics deal with vocalization of heifers as an indicator of estrus, the application of behavioral tests to assess the individuality of animals and the use of cognitive abilities of calves to train their behavioural control over time and place of urination and defecation.</p>
<p>Activities and services currently offered by the infrastructure/installation:</p>	<p>The 'BehavArena' is a multipurpose facility for testing and analysis of the behaviour of cattle. The 'BehavArena' is divided in two parts, the long-term housing area and the arena. The animal housing area can be used as an open field for standardised behaviour tests with a maximum field size of 100 m². The housing area can also be divided in up to 4 parts equipped equally with water troughs and separate gates for individual access. Animals can enter the arena from any parts of the Experimental Cattle Facility. For long-term experiments animals are housed and fed in the area. Self-locking fences are included in the surrounding fence for examinations and sampling during the experiments. The open field area can be monitored from up to eight different camera angels depending on the experimental design. Ports for microphones are located right under the ceiling around the pen and in the centre of the open field for acoustic measurements. The whole animal housing part is acoustically shielded from the surroundings for bio-acoustic research. The behavioural arena is approximately 100 m² and used as control chamber. It is equipped with video recording devices connected to local and central storage units, control monitors, the regulation of the ventilation system and storage for experimental equipment. The behavioural arena offers also the possibility to do live observations through a semitransparent window, so the animals are not disturbed by movements of the observer.</p> <p>Selected publications of studies performed in the 'BehavArena' installation:</p> <p>Graunke KL, Nürnberg G, Repsilber D, Puppe B, Langbein J. Describing temperament in an ungulate: a multidimensional approach. PLoS One. 2013 Sep 10;8(9):e74579. doi: 10.1371/journal.pone.0074579. eCollection 2013.</p> <p>Röttgen V, Becker F, Tuchscherer A, Wrenzycki C, Döpjan S, Schön PC, Puppe B. Vocalization as an indicator of estrus climax in Holstein heifers during natural estrus and superovulation. J Dairy Sci. 101(3), 2383-2394, 2018. doi: 10.3168/jds.2017-13412.</p>
<p>Description of the access to be provided under SmartCow TNA calls:</p>	<p>Users are supported by experienced staff with total respect of confidentiality. Assistance in obtaining ethic approval can be</p>

	<p>provided (applications must be in German language). 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 a project may last 50 days. The estimated number of projects is 3. Access includes provision of animals, local feed, housing, feeding and daily care. Access does not include shipping of samples.</p>
<p>Animal types, diets, housing and experimental conditions that can be worked on in this infrastructure/installation:</p>	<p>Studies can be performed with German Holstein heifers or calves fed total mixed ration based on grass silage, maize silage and concentrate.</p>
<p>Travel and subsistence costs:</p>	<p>Travel and subsistence costs of users can be reimbursed. The reimbursement is limited to a total of 10 days spent at the installation (e.g. 1 person for a total of 10 days or 2 persons for a total of 5 days).</p>
<p>Infrastructure/installation ethical rules:</p>	<p>Researchers submit their protocols for authorisation to the „Landesamtes für Landwirtschaft, Lebensmittelsicherheit und Fischerei (LALLF), State of Mecklenburg-Vorpommern“. Assistance in applying for ethical approval can be provided (applications must be in German language).</p>