



E-25

Patuchev: an experimental device to assess low input goat breeding systems, using local resources and complying with agro-environmental sustainability goals

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The experimental platform Patuchev is aimed at assessing and proposing strategies in order to lead to low input and sustainable goat farms. Main issue is self-sufficiency based on local resources, in order to link production and territory. The project is to explore dairy goat rearing systems allowing: A positive impact on the environment by (1) limiting high energetic cost inputs (pellets, mineral fertilization, mechanization), (2) limiting pesticides, veterinary drugs and exogenous hormones use, (3) providing environmental services (landscape, biodiversity, carbon storage). A productive and attractive business taking into account the consequences of technical adjustments related to environmental issues on productivity and economic output. The attractiveness of breeder's profession should be improved regarding workload, technicality and image. An activity offering products of high organoleptic and sanitary and quality, fitting into the landscape and social surrounding. Multi-specific cultivated grassland and solar-heated air dried hay are the key points of the forage system, combined with cereals and protein plants. Crop will be fertilized with composted manure from the herd. The device is composed of 3 x 10 hectares and a 180 French alpine goats-herd equally divided into three groups: one group in seasonal reproduction and grazing, two groups out of sexual season, one of them grazing and the other one bred inside and fed on hay. The inputs and outputs flows, including energy, will be handled separately for each group. Evaluation and comparison of breeding systems will be assessed by 1) zootechnical performances: production and health, especially regarding parasitism. Results will be collected through lactation and throughout dairy goats' careers. 2) Environmental criteria, such as energy consumptions, greenhouse gases emissions, biodiversity and soil biological activity; 3) Economic criteria (gross margin). For a better dissemination of knowledge, Patuchev is strongly linked to a 28 goat farms research and development network involved in self-sufficiency and grassland-based systems (REDCap). This network will enable the research carried on Patuchev to be extended in farm conditions. This organization gives a wide place to exchange and thereby facilitates the emergence of innovative research issues. All the buildings have been built on purpose for the project (goat shed and solar dryer) and the operational launching will occur on September 2012.