

## **Grassland and Mountain Agriculture Research Institute (GMARI)**

The *Grassland and Mountain Agriculture Research Institute* (GMARI) is located in Banská Bystrica, central Slovakia. Since 1 January 2014, it has been included among the research institutes integrated in the newly established *National Agricultural and Food Centre*.

The Grassland and Mountain Agriculture Research Institute performs complex research on grassland ecology and management systems in upland and mountain regions. The scope of grassland research activities includes sustainable utilization and conservation of natural resources for crop production and animal husbandry; quality and competitiveness of agricultural products for food and non-food utilization purposes; production and non-production functions of grassland as well as effects on the environment and rural development. The research results are transferred and disseminated to practical users. Projects, prognoses, studies and concepts are made, these are devoted to individual types of sward, grassland management practices and animal grazing systems.

### **The Grassland and Mountain Agriculture Research Institute consists of the following departments:**

- A. Director`s Office
- B. Department of Administration and Estates Management
- C. Department of Grassland Management Practices and Ecology
- D. Department of Mountain Farming and Technology
- E. Department of Agrochemistry (Laboratory)
- F. Research Station in Liptovský Hrádok
- G. Research Station in Krivá na Orave
- H. The After-Harvest Seed Treatment Plant in Turčianske Teplice -Diviaky

**Department of Grassland Management Practices and Ecology** - specialises in a full scope of grassland research and management practices aiming at favourable conditions at meadows and pastures; assessment of current situation at grassland in relation to the environment, the soil and microbiological processes; production and non- production functions from the aspects of management and sustainability; proposing suitable grassland management practices considering ecological aspects and biodiversity; research into the individual types of grassland aiming at optimum selection and combination of species, varieties and good management techniques; testing newly-bred cultivars of grasses, legumes and their mixtures under different ecological conditions; problems of non-utilized or abandoned grassland and the revitalization; possibilities for ecological restoration and returning arable land to grassland; renovation and improvement of grassland by means of over-sowing and direct drilling with grasses and legumes.

**Department of Mountain Farming and Technology** – specialises in research on utilization of grassland and mixed grass/clover swards by animal grazing; assessing the effects of intensity of animal husbandry on landscape; ecological stability of areas; botanical composition of grassland; quantity and quality of animal production; harvesting and conservation of herbage from grassland and mixed grass/clover swards; non-traditional ways of landscape management including alternative use of grassland biomass for energy production and composting; proposals, tests and assessment of new technologies and machinery systems for grassland management and pasture husbandry; making prognoses and

outlooks for the development of mountain farming; working out projects of ecological protection and improvement measures including the projects of rural development plan.

**Department of Agrochemistry (Laboratory)** – performs agro-chemical analyses as required for the research projects and activities; chemical and physical methods of analyses are used to determine environmental loads in plants, soil, water and air; analyses of fresh, preserved and concentrate feeds as well as the analyses of soil and plants are carried out not only for the GMARI, but also for other organizations and agricultural farms.

**Research Station in Liptovský Hrádok** – specialises in research on sown grassland which includes testing the potential species suitable for the forage production in Slovakia from aspects of persistence as well as climate change; oversowing/direct drilling the cultural species into grassland; specialised grassland management practices under conventional, ecological and agro-environmental conditions considering the forage production and also the ecological and environmental functions; making prognoses, outlooks, methodology, advisory services for sward establishment, grassland management techniques and improvement under different agro-climatic conditions.

**Research Station in Krivá na Orave** – specialises in research on diversifying the agriculture in upland and mountain regions in Slovakia, such as: utilisation of poor-fertility acidic soil by growing berry fruits (high-bush blueberry and lingonberry); utilisation of agricultural land by growing energy crops (willow) to be used as biomass for energy production; effects of long-term fertiliser application on the production and non-production parameters of semi-natural grassland; advisory services, making projects of plantations for growing berry fruits and energy crops.

**The After-Harvest Seed Treatment Plant in Turčianske Teplice - Diviaky** – is involved in these activities: grass and legume seed crops production in cooperation with the local and international breeders and producers; the after-harvest seed treatment and storage; making mixtures for agricultural and other utilisation (sport turfs, ornamental lawns, amenity grassland).

**Currently, GMARI is involved in the following projects:**

1. “*Sustainable and efficient systems of grassland management*”; the departmental project.
2. “*Analysis, modelling and assessment of ecosystem services*”; the APVV project.
3. “*Klimapark*”; the cross-border cooperation project with Hungary.

**Lately, these projects and activities participated by GMARI have been completed:**

The national projects:

1. “Multi-function grassland utilisation in upland and mountain regions”;
2. “Manual of grassland management practices considering biungulate animals and favourable life conditions of black grouse (*Tetrao tetrix*) in mountainous areas”;
3. “Sustainable development of agriculture in the upland and mountain regions” – an educational project.

The international projects:

1. “Traditional United Food Europe (TRUEFOOD)” – The 6<sup>th</sup> FP (EU Framework Programme);
2. “Semi-natural grassland as a source of biodiversity improvement (SALVERE)” – Central Europe Programme;
3. “Successful Restoration and Rehabilitation Accompanying Infrastructural Interventions (SURE)” - INTERREG IIIB;