

INFORMATION

WE PRESENT THE DEPARTMENT OF FORAGE CROPS PRODUCTION

The Department of Forage Crop at the Czech University of Agriculture is relatively young workplace. It was founded as an independent formation in 1963. This branch belongs to old and traditional disciplines in the study of at agricultural universities. Particularly in the beginnings lectures and scientific activities of grasslands and pastures have been already developed before 1918.

Present Department of Forage Crops Production represents a unified whole to ensure education as well as scientific and research and consulting activities. As to pedagogy and scientific and research, we are dealing with perennial and annual forage crops on arable land, forage production and pratotechnics of permanent grasslands. Besides that more and more attention is devoted to out-production functions of stands and their task in the protection of environment and landscape formation. There are five teachers at the Department (3 associate professors, 2 assistant professors), one researcher, four engineers, eight doctorands and three external co-operators.

Of eight subjects taught in 1993 independently or in co-operation with other departments we take part in teaching of 18 subjects. For last six years eight textbooks were published, three of them in 1998. Two scientific publications were presented to the special public annually. Specialization of the studies in different orientations in deepening including aids, other suitable lecture notes for the other faculties are planned for publishing. Special lectures of external specialists for students are organized. Teachers participate in lectures for further education of teachers of secondary agricultural schools, vocational schools and universities of the third age. Specialization of subjects results in significantly higher interest of students in optional subjects and themes for theses. Some textbooks are ordered also by foreign institutions. Modern equipment and aids, demonstration plot and areas of agricultural plants, sports clubs, technical lawns etc. are available for education. Assistant students (five to seven) from the first to fifth year work annually in total on average 400 hours. At the present 40 diploma theses solving different forage problems are elaborated now at the Faculty.

To ensure long-term research of grasslands the network of continuous trials serves to the Department in the regions as follows: Písecko, Benešovsko and Pelhřimovsko. The second scientific and research basis of the Department of Forage Crops Production is the division of field forage crops at the re-

search station at Červený Újezd what is an institution of the Faculty of Agronomy. At this workplace are solved mainly biological, agroecological and agrotechnical aspects of alfalfa and red clover first above all. Of annual forage crops a primary attention has been paid to silage maize. The research is also adequately quipped for regular arrangement of special activities. The third important object where research and solution of some grants together with practical education is an experimental field of CUA in the area of the University in Prague-Suchdol.

In the centre of attention are polyfactorial, extensive trials concentrated on setting arable land aside means of fodder crops, seed production of grasses, effect of feed infestation of silage maize stands on its production ability, various trials from the field of grass production. An attention should be devoted also to the maintained wide assortment of registered species and varieties of forage crops serving to educational purposes.

The Department of Forage Crops Production is sufficiently equipped with personal computers with corresponding software. It utilizes plots of the research station at Červený Újezd, five lysimetric bases in different regions of the CR for grassland trials, one lysimetric basis on arable land and other experimental plots. Some trials are conducted also in other places (plots of agricultural plants etc.). Pot trials may be conducted in a heated glasshouse of the University and in aviaries. We have different mowers and mulching machines for harvest in experiments. The Department of Forage Crops Production has two laboratories for processing of plant samples in the building of the Faculty and in addition laboratories in the premises of the research station at Červený Újezd. Chemical analyses are mostly carried out in service in accredited laboratories, some of them also at departments of the Faculty of Agronomy.

Publication activities of the Department of Forage Crops Production have been significantly improved, to involve in solution of external and internal grants. Three to five external grants are submitted annually, some of them are solved together with research institutes. International scientific co-operation is developing induced by active participation in international conferences. Co-operation with Ministry of Agriculture of CR, research institutions, schools – domestic and foreign ones – is very intensive. Many studies serve also to profession decision-making activities of central authorities, they are a part of methodologies for various users. Co-operation of the Department of Forage Crops Production with agricultural practice presents roughly 550 hours. Increasing demand for consultancy follows from growing interest as well as from topical tasks being solved at the workplace. Annually the Department of Forage Crops Production organizes special and scientific workshops – conferences. Propagation of the results of research is rich in regional and national activities.

Two basic directions can be defined for further period in orientation of the research, which follow for forage production.

1. Agronomic cultivation and economic conditions of yield formation of quality forage on arable land and grasslands for regions with different intensity of agricultural production (including alternative agriculture).

1.1 Arable lands:

- in all directions profitable establishment and cultivation of yielding, complete and operationally permanent stands of legumes and grass-legumes mixtures in connection to the need of animals in different regions
- legumes and grass-legumes mixtures in conditions of reduction of supply of nutrients and use of pesticides (shortage of finance, territory with special regulations of management)
- expansion of knowledge on the effect of legumes stands density eventually of cover crops (traditional and new ones) and terms of sowing on their yield and qualitative parameters after inoculation with new Rhizobia strains
- systems of treatment of legumes stands during the growing season and their utilization in relationship to yield capacity, their health conditions and operational persistence
- forecrop value of legumes and their influence on soil structure and productivity
- possibilities of replacement of fertilizers in traditional and other sources of nutrients (application to the straw of cereals and cabbage family, use of wastes)
- study of allelopathic relationships in silage maize stands
- nutrition and dynamics of silage maize growth
- yield indicators of various silage maize hybrids.

1.2 Permanent grassland

- yields, botanic structure, physical and chemical properties of soils of grasslands at rational nutrition of stands and soil microbiology (with Dept. of Microbiology)
- leaching out of nutrients at the possibility of high intensity of utilization of stands
- problems of regeneration of grasslands and aspects on increased protection in solution of spheres of concern.

2. Setting the soil aside by means of permanent and perennial forage crops stands in conditions of restructuring of plant production in CR and its economic aspects.

2.2 Arable lands:

- selection of suitable grass species, legumes and their mixtures with lower production of mass and good representation, proposal of technologies of their cultivation in conditions of temporary giving of soil into rest with minimum costs and proposal of utilization of produced mass at maintenance of soil fertility and control of ecological impacts.
- new species or mixtures of crops for "preserving" of arable lands in drier conditions of warmer production regions.

2.3 Permanent grasslands:

- study of the effect and absence of nitrogen fertilizers on yields, forage quality, botanic structure of the stand, development of root system and soil
- rational PK-fertilization of grasslands and possibilities of distribution of cultural and non-cultural legumes and other meadow species
- investigation of contamination and possibilities of protection of underground waters at establishment of grasslands
- structure and testing of mixtures for permanent grassing with possibility of expansion of selected regions of flower-bearing meadow species
- evaluation of the possibilities of breeding of beef cattle in conditions of selected regions of mountain and submontane territories
- effect of cultivation of pasture on characteristics of grassland, washing out of nutrients and grazing animals.

Another solving problem at the Department of Forage Crops Production is "Determination of qualitative properties of grass seeds by new methods".

In the past two-year period we consider as important: improvement and expansion of publishing activities, submission of higher quality grants as to the theme and content, technical reports and projects, higher number of contributions presented in foreign conferences, increased demand of research institutes for co-operation, organization of seminars and conferences, improvement of the milieu of the Department of Forage Crop including modernization of education premises.

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