

Appendix 22 – Consultancy and technical services related to research

CONSULTANCY AND TECHNICAL SERVICES PROVIDED BY DIFFERENT DEPARTMENTS AND LABORATORIES OF USAMV CLUJ-NAPOCA

Domain	Consultancy	Technical Services / Laboratory Analysis
Agrochemistry	Soil Fertilization and agro-chemical optimization	Soil-plant- fertilizers analysis
Agro-techniques	Weed recognition and control strategies for conventional or organic cultures	Phyto-toxicity of herbicides
Technologies Agriculture	Testing different machinery for agriculture Use of GPS in tractors for agriculture works Minimal soil tillage	Diagnosis and testing installations for phyto-sanitary treatments
Plant Science and Technology Plant Physiology and pathology	Diagnosis of pests in agriculture eco-systems Strategies for pest control Unbalances of plant physiology Soil bioremediation Cultivation of medicinal plants, seed production, hops production and potatoe cultivation for seed	Diagnosis of toxigenic fungi in seeds Diagnosis of diseases and control in horticulture plants
Environmental Engineering and Protection	Air and water Quality	Air and water quality, by analysis of different parameters (CO, Nox, SO ₂ , O ₃)
Food Science	Metabolic pathways in plants – as raw food resources - metabolomics Biorefinery & Enzymatic bioconversions Pro-and prebiotics Food microbiology	Biochemical parameters for plant and food authenticity (matabolomics) using HPLC, GC-separation methods and FTIR/MS spectroscopy
Food quality and safety	Food safety and security markers in food Food Additives and Ingredients Nutrition and health	Quality analysis of food (plant or animal origin) Pesticide and toxins analysis in food

Domain	Consultancy	Technical Services / Laboratory Analysis
Food Technology	Applied Biotechnology for Beverage production Dairy product technology Meat technology Confectionery and oil technology	New products obtained in specific pilot plants of the department (beer, meat products, dairy products , confectionery)
Horticultural technologies	Vegetable growing technology Viniculture and oenology Horticulture product processing Floriculture and landscape architecture (green areas) in ecologic systems Vergetable growing	Reconstruction of degraded fields, suspended gardens on roofs and vertical walls) Testing fungicides and insecticides on different vegetables
Forestry	Ecologic reconstruction by forests and fields remediation Protection and control of forestry pests	
Plant biotechnology	Micropropagation and tissue engineering Genomics Gene expression in plants	Evaluation and certification of GMOs (plants and food/feed) by molecular analysis (marker-assisted) based on PCR and EF separations of DNA
Biodiversity	Botanical and microbiological mapping Restoration of native vegetation Germoplasm storage	Cytologic and taxonomic analysis
Business administration	Business plans for rural affairs Managing European projects in rural areas Marketing in rural areas Impact studies regarding the economic-financial plans Trainin for tourism and services in rural areas	
Land management, ground measurements	Monitoring the Hydrologic areas (Somes), by GIS for dried lands, forest reconstruction, Geodezic improvements and topographic design and consultancy	

Domain	Consultancy	Technical Services / Laboratory Analysis
Animal technology	Investments in animal technology (cattle) feasibility studies, technical specifications) Design of sheep growing technology Improvement of reproduction and production of rabbits and fur animals Poultry growing technology	Milk and meat quality
Animal parasitology	Epidemiologic investigations in diagnosis of zoonotic (parasite) diseases	Chemoresistence tests –for antiparasitary drugs, plant extracts Clinic and molecular analysis (ELISA, PCR) applied in parasitology
Infectious diseases in animals	Diagnosis of infectious diseases Epidemiologic monitoring Monitoring the vaccination of animals	Microscopic examinations – incl resistance to antibiotics Molecular typing of bacteria (PCR) Immuno-cellular effectors in cells Molecular techniques applied for the diagnosis of infectious diseases
Beekeeping Sericulture	Management of apiculture and sericulture exploitations. Control of bee diseases	Quality control and expertise of apiculture and silk worm products
Genetics of farm animals	Genotyping of animals by molecular methods	Fingerprint of DNA using PCR, RAPD, AFLP, SSR and molecular techniques
Aquaculture	Aquatic exploitation, selection and imbreeding in fisheries New technologies for intensive growth of fishes	
Animal Nutrition	Animal nutrition and feed composition	Feed analysis for quality (proteins, lipids), pesticide and micotoxins eval.
Animal microbiology	Pathogenity of bacteria- Biochemical markers for mico-bacteriology diagnosis Epidemiology and immunology	Screening of bacterial contamination of animals and animal-based food products
Animal Reproduction	Reproduction of farm animals Biotehnologies of animal reproduction - certification and criopreservation of germoplasm	Oocyte and embryo preservation
Veterinary Anatomy	Morphologic recognition of animals , incl. from archeological areas	

Domain	Consultancy	Technical Services / Laboratory Analysis
Biochemistry	Exploratory biochemical investigations for animal science	Biochemical analysis of milk , meat, and other biological samples, identification of residues by GC- and HPLC analysis
Cell Biology, and Embryology	Specific animal cell biology and embryology	Histological techniques
Biophysics	-	Organic and inorganic structural analysis by IR and Raman and magnetic properties by ESR (Electronic Paramagnetic Resonance
Veterinary Physiology	Experimental models for studying the nervous and humoral influences on physiological regulatory mechanisms Blood compatibility and hemotransfusions	Hematology and metabolic profile
Animal Pathology	Animal pathology necropsy examinations	Hystopathologic diagnosis Contrastphase, confocal microscopy Immunofluorescence and immuno/histo/chemical investigations