Food and Agriculture Organization of the United Nations

CIHEAM

Joint Meeting FAO-CIHEAM Networks on Sheep and Goats and Mediterranean Pastures

Joint Meeting of the FAO-CIHEAM Network for Research and Development in Sheep and Goats (Subnetworks on Nutrition and Production Systems) and the FAO-CIHEAM Subnetwork for the Research and Development of Mediterranean Pasture and Forage Resources

Réunion conjointe du Réseau FAO-CIHEAM de Recherche et Développement sur les Ovins et les Caprins (sous-réseaux Nutrition et Systèmes de Production) et du sous-réseau FAO-CIHEAM de Recherche et Développement sur les Pâturages et Fourrages Méditerranéens

Efficiency and resilience of forage resources and small ruminant production to cope with global challenges in Mediterranean areas

Efficience et résilience des ressources fourragères et de production de petits ruminants pour affronter les défis globaux dans la région méditerranéenne

Ecole Nationale d'Agriculture de Meknès, Morocco, 23 - 25 October 2019

BOOK OF ABSTRACTS – LIVRE DE RESUMÉS

Framework and objectives of the Meeting

The first Joint Meeting of FAO-CIHEAM's Networks is organised this year at Morocco's National School of Agriculture in Meknes. The event is of particular significance as it coincides with the 50th anniversary of IAMZ-CIHEAM. Secondly, it is the first joint meeting of the FAO-CIHEAM Network for Research and Development in Sheep and Goats (Subnetworks on Nutrition and Production Systems) and the FAO-CIHEAM Subnetwork for Research and Development of Mediterranean Pasture and Forage Resources. Thirdly, it addresses the efficiency and resilience of feed resources and small ruminant production in the light of global challenges in the Mediterranean region.

The small ruminant sector plays an important role in the agriculture and rural economy in different Mediterranean countries. However, farmers and shepherds find difficulties to earn a decent living or have a satisfactory lifestyle, due to many reasons: low product prices and high input prices, low productivity and capitalisation, harsh working conditions, social disregarding, lack of services in rural areas, competence for land or conflicts of use with different land management objectives... Productivity, profitability, and environmental and social benefits of this sector are mainly linked to grazing resources that unfortunately undergo continuous and often severe degradation due to the changes to which they are submitted. In some cases, they are subject to abusive and often excessive use and, contrarily, in others they are abandoned. The effects of climate change are already being felt, such as reduction in rainfall, rise in temperatures, successive years of drought or other climatic extreme events… This situation has led to a change from extensive grazing to farming based on supplementation. A correct management of these systems requires better knowledge of the "soil-plant-animal" system interactions and its integration with the socio-economic system. In order to prevent dire, irreversible consequences for the rangelands, animal-stocking rates must adjust to the forage production of the pastures. The resilience of small ruminant grazing systems requires an efficient management of forage resources in order to face climatic and social challenges.

The objective of the Meeting is to encourage the participation of and interaction between scientists, technicians and professionals to improve small ruminant productivity and enhance the conservation of pastoral forage resources in Mediterranean countries.

The Meeting is organised by the National School of Agriculture of Meknes (ENAM) under the aegis of Morocco's Ministry of Agriculture, Maritime Fisheries, Rural Development, Water and Forests (MAPMDREF), and by the Mediterranean Agronomic Institute of Zaragoza – International Centre for Advanced Mediterranean Agronomic Studies (IAMZ-CIHEAM), with the collaboration of the Food and Agriculture Organization of the United Nations (FAO) and the H2020 Project iSAGE (Innovation for Sustainable Sheep and Goat Production in Europe, Grant Agreement n 679302).

The joint meeting will last for three days, running from 23 to 25 October 2019, including a day's field visit. It will provide a framework for scientific and technical exchange. The scientific and technical presentations will be structured in different plenary and group sessions, with invited lectures and oral or poster contributions. The full articles will be edited and published in a special issue of the CIHEAM journal Options Méditerranéennes.

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With the collaboration of

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Alley cropping: developing a suitability index of different shrub species grown under semiarid Mediterranean conditions

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Abstract. In dry environments alley cropping has the potential to diversify the production through integration of shrubs/trees with crop and livestock. This study investigated the performance of various shrubs species integrated within field crops consisting of wheat, vetch and barley in Mushaqqar Research Station, Jordan. Each crop was planted in 10 m wide and 100 m long, while shrubs were planted in between the crops' alleys. Shrub species incorporated included leguminous species (Medicago arborea, Colutea istria and Coronilla glauca), Atriplex species (A. canescens, A. nummularia, A. undulata) and spineless cactus (Opuntia ficus-indica). Shrubs were clipped to 25 cm aboveground in the summer of 2018. An alley cropping suitability index was formulated based on four factors for each shrub: stem diameter, stomatal conductance, plant height and estimating shrub biomass production. The results showed that the Atriplex species showed higher suitability index after clipping. A. canescens recorded the highest plant height, stem diameter, stomatal conductance and estimated biomass production across all three field crops. While leguminous species such as C. glauca will improve the soil nutrient status in an alley cropping system, their low biomass productivity in the beginning of summer (May/June) results in a low suitability index as they are not reliable for providing supplement forage for livestock. Therefore, when implementing alley cropping systems, a tradeoff should be considered for shrub species which produce high forage biomass for livestock sustenance and are accessible to livestock after harvesting crop, or shrubs which improve soil nutrient status for improving field crop growing conditions.

Keywords. Agroforestry – Dry areas – Shrub species – Atriplex – Spineless cactus.