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What priorities for European agroforestry?

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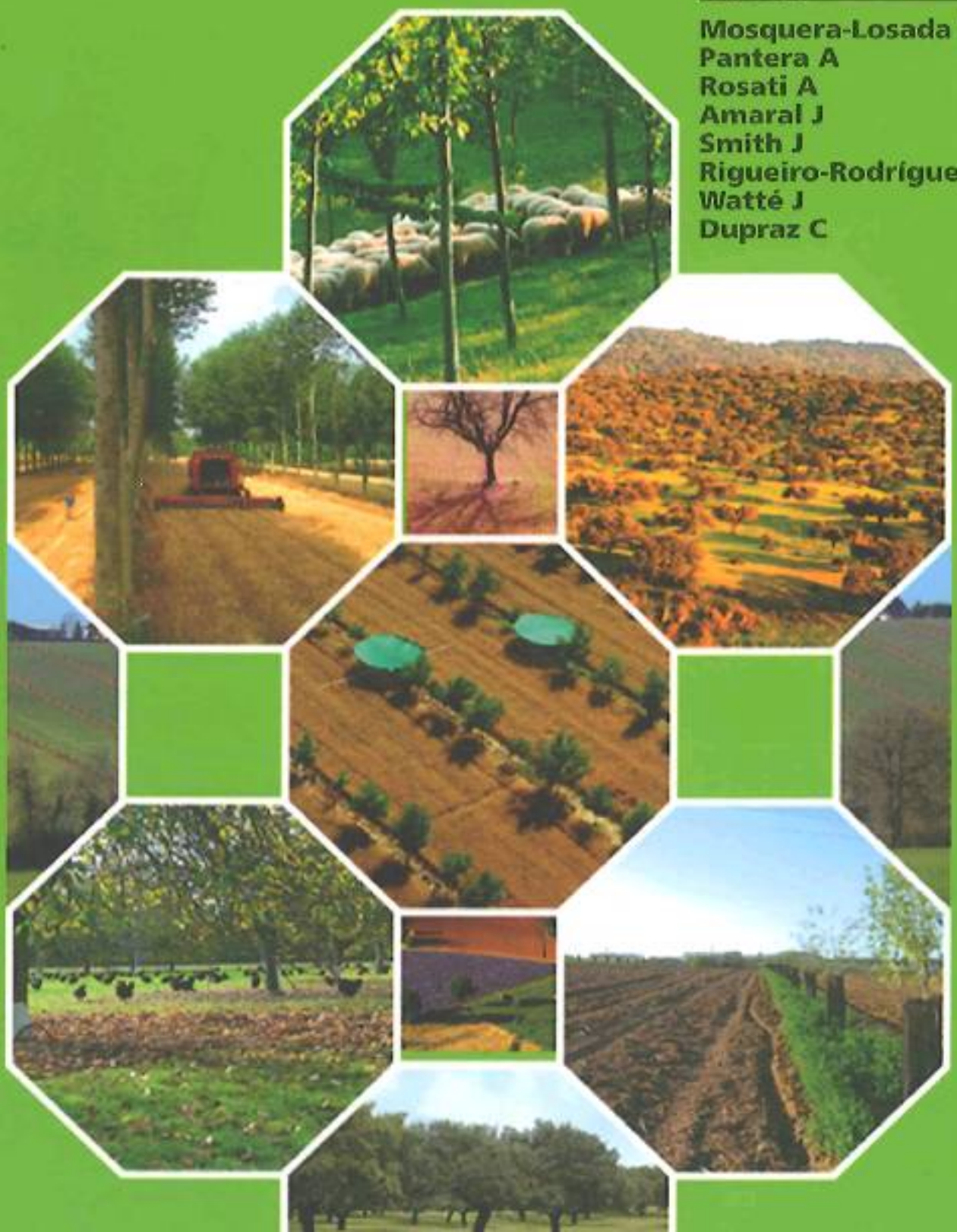

Farmer's Network for Fodder trees and Multifunctional Land Use

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This knowledge sharing network for farmers, advisors and researchers was set up in the Netherlands in 2011 to promote the multifunctional use of trees and shrubs in modern dairy farming systems. In these silvopastoral systems we want to combine pasture production with the benefits from trees as fodder, energy, nutrient cycling, carbon storage, biodiversity and landscape. Our aim is to create a third crop on dairy farms next to grass and maize. In this network we exchange and generate information from literature and field research on the value of trees for fodder (e.g. harvest, production, feeding value, phytotherapeutic value), energy (e.g. harvest, production, storage, market, woodstoves), nutrient cycling, carbon storage (e.g. deep roots), biodiversity (e.g. soil biota and insects) and landscape. In the first year of the project trees were established in combination with grass-clover at three dairy farms (goats and cows). On each farm a plantation plan was designed using a participatory approach. Stakeholders were involved (e.g. farmer, landscape organisation, advisors) during the designing phase of the project. On one farm the main focus is on willow (*Salty alba*) along ditches, while on another farm robinia (*Robinia pseudoaeacia*) was combined with willow (*Salty alba*), hazel-tree (*Corylus avellana*) and black alder (*Alnus glutinosa*) as a kind of forest at the entrance from the stable to the pasture. From willow four different clones were selected on basis of production, disease resistance and palatability for animals. The clones used are Sven, Klara, Gudrun, Tora. In the first year of the project, cuttings of willow were planted in April 2011. In this first year the total dry matter production of wood and leaves varied between 1139 and 5597 kg DM ha-1 with 18 to 33% of leaves. Sven was most productive and Gudrun had the biggest leaves. The cuttings and trees were planted in a rotavated and ploughed grass-clover sward. To reduce weeding in 2012 the trees were undersown with pure white clover. On one farm an undersowing of a small leaved white clover variety Pirouette is compared with a broad leaved variety Alice. In September 2011, June 2012 and September 2012 leaves of the different trees were sampled for feedings value and mineral content on sandy and clayey soil. In terms of crude protein and mineral content the different trees have potential but the in-vitro digestibility is in general lower than 65%. Possibly the results of the in-vitro digestibility are negatively affected by the content of tannins or other secondary metabolites in the leaves, while in-vivo this would be less of a problem. This is under investigation now. In January 2012 a desk study has been carried out on the phytotherapeutic value of tree leaves. In September 2012 leaves of willow were baled for silage, and first and second year growth of willow were grazed by goats. In our presentation the different results from the project are discussed.