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Poplars and Other Fast-Growing Trees - Renewable Resources for Future Green Economies



Abstracts of Submitted Papers and Posters

Forestry Policy and Resources Division
Forestry Department

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ADVANCES IN A WILLOW (*Salix* spp) BREEDING PROGRAMME IN ARGENTINA FOR DIFFERENT WOOD APPLICATIONS

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Willows are cultivated in Argentina for different applications, mainly pulp and paper industry and particleboard, and, secondarily, for saw-timber. With the aim to improve the clonal offer, a breeding programme is being developed by INTA in collaboration with other official institutions and private agreements. The strategy is based on inter- and intra-specific hybridisation and selection, considering: growth, adaptability, resistance to pests and diseases, stem form and wood quality. A broad series of trials to test the material are located in different areas of the country, the most in the Paraná Delta, the main core of willow production in the country; other tests are established in Patagonia region and Salado River Basin. In addition to the industrial use of its wood, new willow genotypes are being explored for other applications, as forestry-livestock systems, biomass production and environmental strategies.

Evaluations of a series of screening and yield trials in the Delta area have led to select six new clones in 2012, and three more in 2016. Clonal identification by genetic markers were carried out for all genotypes. Six of these genotypes were originated from controlled crossings (*S. matsudana x S. aba* and *S. matsudana x S. nigra*), and three from open-p ollination (individuals of *S. alba*, *S. nigra* and *S. matsudana*). In yield trials of six years old, localized in average site qualities of the Delta region, the new clones showed a mean volume of 22.8m^3.ha-^{1}.yr^{-1}, which was 45.3% better than the mean of the older traditional clones. The three top clones of the nine selected clones yielded 33.2m^3.ha-^{1}.yr^{-1}, 28.7m^3.ha-^{1}.yr^{-1} and 26.5m^3.ha-^{1}.yr^{-1}. Regarding wood traits, six of the nine new improved clones showed outstanding characteristics (basic density, fiber length, whiteness of the wood; and tear strength, tensile strength and scattering of the pulp) and suitability for sawing. The genotypes selected have different degrees of flooding tolerance, in consequence specific clones could be recommended according to the risk of flooding of each area.

Key words: Willows, improvement, clones, wood.

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