

## Chorological synopsis of genus *Salix* L. in the Iberian Peninsula

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The distribution map of every willow species growing in Spain and Portugal has been proposed, in UTM projection with points equivalent to 10 × 10 km squares. The study of this material has revealed that the species of *Salix* occurring in the Iberian Peninsula show similar characteristics and difficulties to those seen throughout the rest of Europe. The species covered are:

Subgenus *Salix*: (*Salix triandra* L. (*S. amygdalina* L.), *S. pentandra* L., *S. alba* L., *S. fragilis* L., *Salix alba* × *fragilis* (*S. neotricha* Goerz), *S. babylonica* L.).

Subgenus *Chamaetia*: (*S. reticulata* L., *S. herbacea* L., *S. retusa* L., *S. pyrenaica* Gouan, a Pyrenean endemic, *S. breviserrata* Flod.).

Subgenus *Vetrix*: (*S. hastata* L., *S. pedicellata* Desf., *S. caprea* L., *S. atrocinerea* Brot., *S. aurita* L., *S. salvifolia* Brot., an endemic in the western half of the Iberian Peninsula, *S. tarraconensis* Pau, an endemic of the limestone mountains in the border between the provinces of Tarragona and Castellón, *S. bicolor* Willd., *S. cantabrica* Rech. fil., *S. viminalis* L., *S. eleagnos* Scop., *S. lapponum* L. (subsp. *cereana* Montserrat?), *S. daphnoides* Vill., *S. repens* L., *S. purpurea* L.).

## Bud formation and sprouting pattern of coppice shoots in some North American and European willows

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Fast-growing willows are propagated as coppice in short rotation biomass plantations for energy and pulp. A number of internal and cultural factors influences the development and growth of new shoot generations from harvested stools. The morphological and structural basis for resprouting were studied in *Salix viminalis* L., subgenus *Vetrix*, section *Vimen*, *S. eriocephala* Michx., subgenus *Vetrix*, section *Cordatae* and *S. amygdaloides* Anderss., subgenus *Salix*, section *Humboldtiana*, and tested for short rotation forestry programmes. The initiation and development of buds, bud morphology, location and abundance of buds and the resprouting pattern after coppice treatment were investigated. All buds were axillary in origin and consisted of one main shoot primordium and two lateral primordia. The number of buds and their location were strongly correlated to number of developing shoots in all species. In *S. viminalis* and *S. eriocephala* the lateral buds at the basal portions of the stems contained several leaf primordia and usually sprouted shortly after the main bud in response to coppice treatment. In *S. amygdaloides* the further development of the lateral buds was inhibited after the formation of bud scales. The

prophylls of these buds were not formed until the buds were 'allowed' to sprout, e.g. after the main shoot had wilted. Syllepsis was common in *S. amygdaloides* and effected the resprouting ability. The significantly different growth pattern resulted in lower coppicing ability and productivity in *S. amygdaloides* compared to *S. viminalis* and *S. eriocephala*.

### **Nomenclature of the promising biomass coppice willows, *S. × sericans* Tausch ex Kern., *S. dasyclados* Wimm. and *S. 'Aquatica Gigantea'***

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*S. × sericans* Tausch ex Kern., the collective hybrid between *S. caprea* L. × *S. viminalis* L. is a tree 6 m high producing particularly vigorous coppice shoots. It is the basis of many of our current selections for biomass and would be an important component of any breeding programme. The hybrid of *viminalis* with *cinerea*, *S. × smithiana* Willd. is more rare than with *caprea*. Further a vigorous male clone grown in commerce in Western Europe as *S. × smithiana* is misnamed. Two clones obtained from different British nurseries as *S. × smithiana* and which differ appreciably in vigour and phenology are in fact both hybrids of *caprea* × *viminalis*, i.e. × *sericans*. Triple hybrids of *viminalis* × *caprea* × *cinerea* exist (Meikle 1952, 1978). It is within this complex that preferred biomass willows like *dasyclados* Wimm., *calodendrom* Wimm. have their affinity. These willows and the so-called *S. 'Aquatica Gigantea'* are being widely planted in biomass trials and an examination of their problematical nomenclature is therefore timely.

#### **References**

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### **Francis Buchanan White (1842–94) and the revision of the British willows**

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Francis Buchanan White (1842–94) of Perth, Scotland, entered the University of Edinburgh in 1860 to study medicine, graduating in 1864. Following his marriage in