

Taxonomical identification on the present status of Poplar clones in India

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Poplars have been successfully incorporated in agroforestry plantation. Wood of poplar plays an important role in the national economy of the country. As clonal material is bound to mix up while exchanging the stock during plantation and distribution by the planters and non-technical hands, there is loss of identity and subsequently resulting in to poor yield of wood for any specific purpose. Due to poor yield of wood, the national economy is also affected. To solve this problem studies were carried out based on morphological characters of leaf phyllotaxy, leaf stalk, petiole, leaf base, kinds of leaf, leaf texture and number, shape and colour of glands on the taxonomical features of useful clones of *P. deltoides* viz. WSL-56 [C-5], WSL-16 [C-8], ST-71 [C-18], ST-153 [C-36], WSL-12 [C-38], 112107 [C-92], WSL-9 [C-135], G-48 [C-194], D121 [C-195], and S7C15 [C-197]. Artificial key for identification of taxa has been developed for removal of confusion, duplication or materials with superfluous identity. Difficult botanical terms have been avoided in the key. The leaf characters in the key are intended to apply to mature foliage on the lower third of long shoots of medium vigour taken in the second half of the summer.

Key words : Agroforestry, Artificial key, Clones, Foliage, Poplar.

INTRODUCTION

Family Salicaceae, embracing poplars (*Populus*) and willows (*Salix*). Genus *Populus* Linn. includes 35 species in five sections. These are White poplars (Leuce), Black poplar (Aigeiros), Balsam poplars (Tecamahaca), Leucoides and Turanga. According to Jobling (1963) the genus *Populus* contains 32 species. They occur throughout the Northern Hemisphere in cold and temperature zones between the sub-arctic and sub-tropical regions. According to Edlin (1963) the Latin *Populus* can be traced back to the Greek verb *papaillō* meaning to 'Shake and tremble'. The Onondaga Indian name for Aspen (*Populus* and Cottonwood) is Nut-ki-e, meaning noisy leaf. The word poplar is one of the few trees name to be shared, in different forms, by several modern European languages. It is Pipals (corruption of *Populus*), Kapasi, Pahari papal in colloquial Indian language.

In India, Poplars (*Populus*) have a restricted zone of distribution due to their specific photoperiodic requirements. It has shown good performance in the areas lying north of approximately 28 degree N latitude in the states of Uttar Pradesh, Jammu and Kashmir, Punjab, Haryana and Himachal Pradesh and parts of Arunachal Pradesh. In a very limited way it has been planted in parts of Maharashtra as well. Poplars are dioecious and inter crossing among various types is fairly common. The feature of hybridization between different species and varieties has resulted in the development of a large

numbers of clones (FAO, 1979).

Realizing the importance of poplars, a National Poplar Commission was created in France in 1942 and subsequently an International Poplar Commission was set under aegis of the FAO during 1947. India become member of the International Poplar Commission during 1965 and constituted a National Poplar Commission with the basic objective of cultivating poplars extensively to meet the requirements of timber, fuel wood, material for light boxes suitable for fruit baskets and poplar straw etc. Poplar wood is widely used in plywood and match splints. Market has been developed for Poplar in Haryana, Punjab and Uttar Pradesh.

MATERIALS AND METHODS

The study was undertaken on leaf characters of one year old of ten exotic clones of *Populus deltoides* viz. WSL-56 [C-5], WSL-16 [C-8], ST-71 [C-18], ST-153 [C-36], WSL-12 [C-38], 112107 [C-92], WSL-9 [C-135], G-48 [C-194], D121 [C-195], and S7C15 [C-197] grown at Forest Research Institute, Dehradun, Uttarakhand during 1996-1998.

At the time of introduction, transplantation, and distribution of the clonal materials, the basic identity of the propagating and harvested germplasm is by and lost as a result of mixing up by the non-technical hands. Therefore, authenticity of the plant for desired growth and yield becomes doubtful. Sometimes the losses are heavy when the estimated yield is not obtained, just

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