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## Impact of 12 Years Poplar Cultivation on Availability of Some Soil Nutrients in Safrabasteh, North of Guilan

EHSAN KAHNEH<sup>1</sup>, ROGHAYEH GHANBARPOUR DIZBONI<sup>2</sup>, MASOUMEH MOSHFEGHI MOHAMMADI<sup>2</sup>

<sup>1</sup>*Guilan Research Center of Agriculture and Natural Resources, Natural Resources, Iran*

<sup>2</sup>*Novin Sanjesh Gil, Soil & Water Analysis Laboratory, Iran*

### Abstract

Fast growing plantations are likely to provide a huge quantity of raw material quickly and at a relatively low cost. Hybrid poplars, in Iranian conditions and suitable soils, offer a high productivity. Thanks to the use of clonal varieties it is possible to obtain material with homogeneous and well-known properties. The stand density is 400 stems ha<sup>-1</sup>. RIFR (Research Institute of Forest and Rangeland) planted many plots of hybrid poplar in Safrabasteh Poplar Research Station at 1993. This study was carried out in order to study influence of four poplar clone plantation on availability of some soil nutrients in Safrabasteh Poplar Research Station (Astaneh, Guilan Province). Experimental design was completely randomised block with 3 replications and four treatments (25 trees in each plot) as: 1. *Populus euramericana* 214 2. *Populus euramericana* 45/51 3. *Populus deltoides* 77/51 4. *Populus deltoides* 69/55. Some of soil properties as pH, O.M, N, P, K, Ca and Mg were determined. The data were subjected to analysis of variance using the ANOVA procedures of the SAS program. Statistical significance was determined at  $p = 0.01$ . Analysis of variance showed that effects of different poplar clones are significant on soil parameters. The phosphorous, potassium, magnesium and organic matter contents in the upper layers varied in each plot. The rates of nitrogen and calcium did not change, except N and Ca. The Duncan's multiple range tests following a significant F test compared means. Mean's comparison showed that the *Populus euramericana* 45/51 had greater effects on the soil parameters than other clones. Thus, it is suggested that suitable poplar clones should be used for future plantations projects, in the Guilan province.

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