

## **The role of total proteins, peroxidases and polyphenoloxidases in metabolisms of *Juniperus* spp.**

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### ***Abstract***

In this study, role of total proteins, peroxidases and polyphenoloxidases in metabolisms of juniper were studied. For this purpose, seasonal alteration (quantitative and qualitative) of total proteins, peroxidases and polyphenoloxidases from branches, leaves, male cone and berry were analysed by electrophoresis and spectrophotometric methods in male, female and male-female plants.

Results indicated that in spite of specific differences in each stand, activity pattern of enzymes were similar. The highest activity of peroxidases from leaves and branches were seen in spring and autumn and the lowest activity were in summer and winter. Protein, peroxidases and polyphenoloxidases rates of male cone decreased in winter. Comparison of peroxidases with polyphenoloxidases activity during female maturity indicated that maximum activity of polyphenoloxidase was in the first stage growth and minimum activity of peroxidase was in second stage growth.

This results indicated this enzymes involves in juniper metabolisms such as, growth and development, photosynthesis, hormonal balance, organogenesis, morphogenesis and resistance to environmental conditions.

## **Preliminary results of elimination trial with needleleaved species in Mazandran (Nowshahr)**

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### ***Abstract***

This paper presents the results of an elimination trial with 9 species, varieties and provenances under rainfed condition six years after establishment in Kheyroud forest area of Nowshahr Mazandaran (North of Iran).

The altitude of area is 450 meters above sea level and has a cool and very humid climate with about 30 days dry seasons.

The results of 6 years (1990 - 1995) studies showed that:

- *Sequoia sempervirens* (seed collected from Nowshahr nursery) was the most promising species.

- According to survival and growth rate following are promising species respectively:

*Pinus taeda* (origin U.S.A), *Cryptomeria japonica* (seed collected from Kelardasht nursery), *Pinus nigra* var. *calabrica* (origin south France).

## **Study of *Populus euphratica* OLIV. community in the margin of Karoon river**

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### ***Abstract***

*Populus euphratica* Oliv. in Iran is distributed naturally in vast regions. But the largest area is located along the margins of the large rivers in Khuzistan province, such as Karkheh, Dez and some area in Maroon (nearly 20,000 ha). It is spread in the form of coppices covering at the large area, which are very important from the economical point of view and environmental purposes because of production of wood, animals fodder, protection and stabilization of the river border. Also it can be useful for the protection of the natural ecosystem and wildlife. *P. euphratica* in Khuzistan is adapted to arid and semi-arid regions. Also the dry period consider to Ombrothermic curves is between 7 and 8 month per year (late Feb. to late Oct.). The mean annual rainfall is between 230-340 mm, and the mean annual temperature is between 23-25°C. Soil of the studied sites are alluvial which contribute from erosion of lime, marl and salty matters of Zagroos formations. Soil texture of upper horizons is sandy-loam and lower horizons change to loam. Electrical conductivity (EC) value is higher in south and western than north regions. The overall hydrological characteristics such as, meander, flood river and light texture of soil are the reasons for presence of *P. euphratica* communities in the natural regions. The number per hectare of stands was 357 and 329, the crown cover percentage of stands was 72.6 and 68.4. Also the mean annual diameter increment was 9.6 mm and 9.5 mm and the approximate age estimated 35 and 36 years.

Key words: *Populus euphratica*, crown cover, annual growth

**Study of site quality of Caucasian Alder**  
**(*Alnus subcordata* C. A. Mey.)**  
**in the Caspian Region (west of Mazandaran province)**

*Yosef Gorji Bahri*

***Adstract***

In order to determine the site quality on pure and even-aged stands of *Alnus subcordata*, 65 sample plots of 500 m<sup>2</sup> area were selected in different diameter (age) classes and all of trees were studied in sample plots. Site index curves, based on dominant height/diameter (age) were compiled for caucasian alder. Number of trees varies from 82 to 1640 stem per hectare in different diameter (age) classes. The standing volume with 60 cm mean diamer at breast height is estimated up to 720 m<sup>3</sup>/ha.

Height of dominant trees on the dominant diameter (age) with 35 cm at breast height differs from a lower limit of 20 and an upper limit of 32 meters.

