Determination of diameter increment of persian oak (*Quercus brantii*) in West- Iran

(Chaharmahal va Bakhtiari Province).

H. Jahanbazi, A. Mirbadin, M. Talebi.

Abstract

Six sample plots (each 0.5 ha) were established randomized systematicaly in oak forests of West-Iran. Five trees were selected in each sample plot from 10-50 cm diameter classes. Using increment borer, the age and diameter increment of trees were determined. More over some of qualitative characteristics were also studied.

The main results can be summarized as follows:

1- 2.2% of trees showed high stem quality, 33.4% medium, 60% low quality and 4.4% defect.

2- The form factor for persian oak was calculated about f= 0.2

3- Mean annual diameter increment was determined 0.56 cm in bark and 0.53 cm without bark.

4- Total annual volume increment was calculated to 0.2 silve/ha

5- Relationship between diameter and height was:

$$h=0.1799 d+ 3.1869 \quad \text{with } R^2= 0.87$$

6- Relationship between heigth and age was:

$$h= 0.0359a+5.3889 \quad \text{with } R^2= 0.69$$

Investigation on phenological stages of some trees species in the Caspian Region

A. Mirbadin, M. Dastmalchi

Abstract

In this investigation, the phenological stages of six important tree species in four elevations of three zones (east, west and central part of Caspian Region) have been studied.

Twenty well developed crown individual trees of Beech (*Fagus orientalis*), Oak (*Quercus castaneifolia*), Hornbeam (*Carpinus betulus*) and Iron wood (*Parrotia persica*) as well as 10 trees of caspian Alder (*Alnus subcordata*) and Maple (*Acer velutinum*) were selected at each site.

The results are as follows:

1- The flowering and leaf flashing time depend on climatological conditions, but differ between one or two weeks every year.

2- The phenological stages, according to the temperature, beginn earlier at eastern parts of Caspian Region.

3- About 67% of tree flash between 21 and 30 of March. The rest flash before this date.

4- Trees with dbh of 40 to 80 cm, showed the highest rate of flowering and seed production.

Effects of lime and chemical fertilizer application on growth and mineral uptake in Pinus sylvestris seedlings

A. Rahmani

Abstract

This study was conducted to determine the effects of young Scote pine (Pinus sylvestris L.), under field condition. Treatments consisted of quicklime, Ca+Mg, Ca+Mg+NPK and Ca+Mg+NPK+ microelements. After three years, the growth rate was affected by fertilization in all treatments, although liming alone did not modify significantly the height growth compared with the control. Fertilization increased the concentrations of Ca, Mg and K and decreased Mn in organs. The accumulation of macroelements was greater in all organs when they were treated with microelements, compare with other treatment. Concentration of Fe, Na and N were not affected by fertilization. There was a greater accumulation of the less mobile elements; Ca, Mn, Fe and Na, in old needles. Whereas the concentration of mobile nutrients, K and Mg were greater in current growing needles.

Investigation on mechanical soil properties within Ziarat-Gorgan

R. Arefian and N. Rafatnia

Abstract

This investigation was carried out in an area within Ziarat- Gorgan Forest Management Project .The materials and methods consisted of two stages :1-Informantion and map collection and perparation ,2-Soil mechanics tests .

Different maps including geology, hydrography ,slope percentag ,slope direction and soil flow were obtained and made. Overall, 30 soil samples were collected by random - systematic method which were located near the main and secondry roads. The mechanical properties of the soil samples, including natural water content ,optimum water content ,liquid limit (LL), plastic limit (PL) and particle size distribution were tested. The results showed that the soil moisture was high and sometimes as high as the plastic limit. The liquit limit of half of the soil samples was more than 50 percent.Overall,based on U.S.C.S method, four soil types were determined: CL, ML ,MH, and CH (C,M,L,H,represents clay, silt ,low LL and high, respectively).Finally ,based on soil mechanical properties and solpe direction and percentage ,the soil stabililty map was made. The map consisted of three stability classes :1-Low stability ,2-Medium stability and 3- Approximate stability .