Therefore F (irrigation interval every fifty days) are recommended for a, b, d (*Acacia nilotica, A. ehrenbergiana, A. oerfota*). *A. tortilis* could be planted under rain-fed condition.

Comparison of plantation with four indigenus Acacia species and determination of least irrigation period in the first year after plantation

M. A. Soltanipour

Abstract

In order to comparison of afforestation and selection of the best Acacia species as well as determination of their irrigation period, this project has been carried out for 4 years in Sarkhoon research station on 40 km far from north of Bandar-Abbas.

Acacia species are important for grazing, animal nutrition, medicinal and industerial consumption, soil conservation, ecosystem balance and supply of fuel-wood.

The lay out of this experiment was a split plot designe with 6 irrigation treatments as main factor and 4 Acacia species. Irrigation treatments were as follows :

A: rain-fed,

B: Irrigation interval every 10 days,

C: Irrigation interval every 20 days,

D: Irrigation interval every 30 days,

E: Irrigation interval every 40 days,

F: Irrigation interval every 50 days.

Different Acacia species were: *Acacia nilotica, Acacia ehrenbergiana, Acacia tortilis, Acacia oerfota.*

The survival of seedlings were studied at the end of every month. The canopy cover and height growth were measured at the beginning of every year.

According to statistical analysis of the fourth year, there was significant differences at level of one and five percent ($\alpha = 0.01$, $\alpha = 0.05$) between different species and irrigation treatments.

Investigation on poplar cultivated area change by aerial photographs and land control

F. Asadi, R. Bagheri

Abstract

In order to study the cultivated area change of poplar at Zanjan-Roud district and its economical and social reasons, the aerial photographs of the district in 1978 were studied then the change after 15 years (1993) was checked by land control and observation.

The results showed that during that period of time the cultivated area decreased by 22 percent. Cultivated area was estimated by point sampling method.

Overall, poplar farms were replaced with other agricultural crops by people and subsequently soil erosion has been increased.

This new map and functional classification for use of harvesting machinery were demonstrated as confirmation and restriction of using ground skidding methods, also type of machines in study area which using them have least erosion hazards.

The climate condition has also a great effect on wood transportation quantities which shows differences in soil stability between two different moisture condition (saturated and optimum condition). The fluctuation of soils' moisture in different seasons have the same situation with above.

This research as a classification system was the first enquiry which have been tested in practice in northern forest of Iran. The results are as follows:

1. Determination of slope percent is not enough to predict accessibility of forest by harvesting machines.

2. Climate conditions which were introduce as an optional parameters in fifteen session of FAO held at IZMIR (Turkey) in 1984 is suggested as an obligative factor in northern forests of Iran.

3. Soil strength is the other obligative parameter which was restricted ground skidding in forests (in the study area 15% of passable area were restricted by this parameter).

4. Off- road movement construction has a great effect on selecting suitable type of machines and accessibility was raised from 10% up to 37% of area by constructing 3 new skidding roads.

5. Restrictive and obligative parameters in this research were: soil strength, slope, climate condition and density of skidding road.

Ground roughness (microtopograpy) had not a great value. It is needed to do more enquires on it.

In this research that was only an optional parameter which has no significant effect on accessibility, also we need more enquires on silivicultre and forest management subject to determine excatly the quantity of each machines and reduce different aspects of erosion hazards.

Terrain classification for using of wood transporter machines in northern forests of Iran

S. J. Hashemi, N. Sarikhani

Abstract

The issue in hand is the result of terrain classification according to accessibility, to have a functional one for using of harvesting machinery in northern forest of Iran.

New concepts of soil stability and the relationship between soil strenght and accessibility, have been found.

The results of functional classification for the use of harvesting machinery in relation with slope percent are as following:

1. According to slope percent, Parcelle No. 11 has the easiest terrain condition for ground skidding.
2. We are able to select standard tractors for wood transportation in more than 50% of passable area.
3. 49% of study area are passable through ground skidding machines.

To determine the rate of soil strenght's effect, we made an enquiry on soil condition has been made. Soil is the best representative factor which demonstrates the capacity of ground stability to support vehicular off-road movement and interaction between vehicle and soil.

Soil strength was specified by determinating soil texture and drainage.

Then microtopography of study area has been studied, since lack of aerial photography with scale 1:5000 and inharmonious distribution of ground roughness an integrated inventory have been performed.

A descriptive classification with 3 parameters has been made to provide a functional classification, three maps extracted from slope, soil strength and microtopography tables were overlaid. The new one is called utilization unit map.

b. If decrease rate of annual ring growth is between 0.74 mm and 15 mm, then there will be light seeding cycle.
c. If decrease rate of annual ring growth is more than 15 mm, there will be heavy seeding cycle.

Determination of Beech (*Fagus orientalis* Lipsky) seeding cycle at caspian Forests of Iran (Kelardasht)

A. R. Mirbadin, Y. Gorgi-bahri, M. Namiranian

Abstract

The research project of determining Beech seeding cycle was conducted at Kelardasht region of Caspian Forests.

Thirty dominant Beech trees were selected for quantity and quality measurment. After soil and ground cover sampling and tree measurments, the trees were cut down and a disc sample was taken from each tree stump. The discs were analyzed at Division of Wood Science Labs of Research Institute of Forests and Rangelands to study the annual rings. The results showed that:

1- *Fagus orientalis* has two seeding methods, heavy and light.

2- The minimum age of seeding is about 30 years when is Often associated with light seeding.

3- The heavy seeding begins at age of 60 years.

4- At a same site, different seeding cycles were observed during the living period.

5- The light and heavy seedings continues every 1-5 and 3-18 years, respectively.

6- It seems that natural regeneration depends on light seeding cycles because of their frequent occurance.

7- Forest management projects should be based on light seeding cycles rather than heavy seeding cycles. As a result, the harvesting period should be increased from 5 years to 10 or 15 years.

8- There was a relationship between annual ring growth rate and seeding methods as follows:

   a. If decrease rate of annual ring growth is less than 0.74 mm, there will not be seeding cycle.