

We may use too many trees and waste money in unnecessary purchase of plants, and in planting. Or we may use too few trees and waste time and money in unnecessary cultivation after the trees are planted. And so we use the golden mean, which we find by experiment is to plant the trees 4 x 4 or 4 x 6 feet apart.

Windbreaks One-Hundred Feet Wide.

After they are planted, we conserve the moisture for their use at first, by cultivating the soil as in a summerfallow. This goes on for three or four years till the branches and leaves get close and dense enough to protect the ground from sun and wind as in the natural bluffs, after which the plantation becomes self-sustaining and needs no further cultivation.

The width of the plantation should be about six rods, or 100 feet, to throw the wind over thoroughly and completely.

These are the principles on which a farm forest should be built, but there are other two very important matters to be considered also.

These are, 1st. Rapid results, and second, permanency.

A farmer's first object in planting, naturally is shelter and so we expect quick height growth in our plantation. We can get this by using a quick growing variety of Russian Poplar.

But quick growing trees are usually short lived and so we mix with them a certain proportion of Ash and Elm, and under certain conditions, Spruce or Pine. These are all long lived trees and will go far to give us the permanency we desire. Mixed in definite proportion with the Russian Poplar, we can at the same time secure the rapid height growth we want.

To assist in sheltering the ground quickly and so cutting down the cost as we have seen, we use with this mixture a great many Manitoba maple or Box Elder, and Caragana. These are branchy and have much denser foliage than the others and their function in the plantation is to shade the ground.

In some parts of the country the maple is not entirely hardy and will rarely grow into a tree, but none-the-less it should be used as part of the mixture in all such

plantations. Its value lies in its ability to shade the ground and so preserve moisture for the use of better trees than itself.

Caragana is a very bushy shrub and its best services is rendered by two rows being planted on the outsides of the plantation to keep out the wind and withstand any grass that may work in.

Seedling plants are the best to use. More of them live and they are cheaper.

The accompanying diagram shows how the trees should be mixed.

Planting Diagram.

The outermost rows of Caragana should be six feet from the edges of the plantation.

The trees to be 4 x 4 feet apart.

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C C C C C C C C C C
C C C C C C C C C C
M M M A M M M E M M
R R R R R R R R P P
M E M M M A M M M E
R R R R R R R R B P
M M M A M M M E M M
R R R R R R R R P P
    
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And so on alternately. The two outer rows should again be Caragana.

C—Caragana.

M—Manitoba Maple or Box Elder.

R—Russian Poplar (*Populus Petrowskiana*).

E—Native Elm.

A—Native Ash.

You will see every other row is Russian Poplar. These are grown from Cuttings and planting them is done with a spade and is a speedy job. A man can easily do 2,000 a day.

The other rows are mostly Maple, three-fourths Maple and the balance Elm and Ash.

You will also see, every other tree is crossed off. This is to allow for thinning, which will take place 20 or 30 years after planting. This seems rather far fetched, but Foresters have to look far ahead in the management of their crops, and the thinning must be taken into consideration. The actual thinning will not work out exactly according to the Diagram, for some trees will be dominated by the others and will die, but in the main the Diagram will work out when the proper time comes to thin.