

Tree-Planting on the Prairies

Some Results of Observations as to the Permanency of Shelter Belts in the West.

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AS far as our present knowledge is concerned a prairie tree belt has at least three distinct stages in development toward usefulness and permanency. These may be classified in periods of five, ten, fifteen or more years. Data now available is limited to between the fifteen twenty year period, which is probably the present age of hardy trees planted in shelter belt form to any great extent throughout the prairie provinces. Beyond this, we can only surmise what the future results will be and continue to carefully record the progress of many experimental belts of all varieties which have thus far supplied definite data in the primary stages of shelter belt development.

Many Difficulties

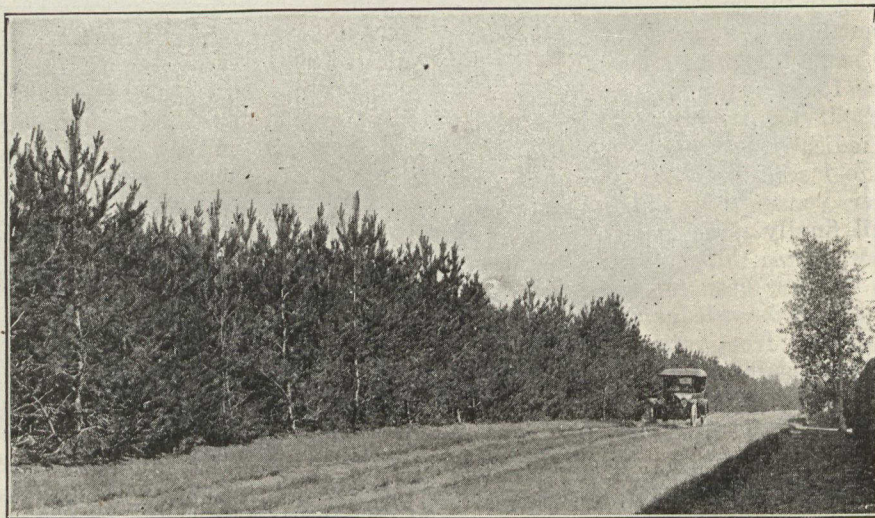
In the very varying conditions of soil, precipitation and altitude throughout the West, the problems of establishing permanent belts of trees present many difficulties, but in the general progress of the work we can hope in the near future to have data which will help in the classification of districts and the principles to be followed to ensure the best results.

The general characteristics and growth of various species in pure stand and mixture under average prairie conditions are known up to the fifteen twenty year period. It is obvious that certain rapid growing varieties planted pure become in a few years ineffective as a shelter belt. This is particularly the case with varieties developing an open crown. The protective influence of such belts is reduced to a minimum and usually the ground cover reverts back to sod conditions. Insects and fungus disease also make it unsafe to plant varieties of broad leaved trees alone if an effective and permanent tree belt is desired. Birch and Tamarack have done well in pure stand but even these belts would benefit by an understory for ground cover and the re-enforcement of the belt against wind and storm. Present knowledge favors a mixed stand combining the faster and slower growing varieties developed under a proper method of treatment to give the best results in the long run.

First Period Important

The first or five year period in the life of a prairie tree belt may be said to be the most important, and care in cultivation practised at this stage will decide in no small degree the future of the trees. Early growth is usually very rapid and the aim must be to develop well rooted, sturdy trees capable of resisting the ever

merits of each are not apparent. The most desirable width of a prairie belt is yet open to question, but to a great extent the width depends upon the purpose to be served and the amount of time and labor available for effective maintenance. Known results are in favor of a medium width for windbreak protection of not more than ten rows and of any length. A will be infinitely more valuable in the



Belt of Scotch Pine transplants set out in 1906. Photo in 1920. Average height over 19 feet.

present menaces of grass, insects, hail and drought, with which the belt will have to combat in its general progress toward permanency. Trees will respond or fail in proportion to the amount of time and labor devoted to their care. Varying types of soil, the amount of precipitation and differences in altitude are not conducive to the unassisted development of trees on the prairie. Constant cultivation during the first five years following planting is absolutely essential for the future welfare of the belt. In districts where the precipitation is light, mulching with straw to prevent evaporation has been found beneficial. There is not however, at present, sufficient experimental evidence to justify the practice of mulching under average conditions. The size of the plantation, spacing between the rows of trees, and the composition of the belt, whether in pure stand or mixture, are important factors to be observed, although at this stage the respective

belt of this proportion well cared for future than a much wider tree area neglected for the want of time and labor cost. Smaller fields properly worked mean a greater yield and the same applies to the prairie tree belt.

Up to five years of age then, the chief concern is the encouragement of a strong healthy growth, provide a quick ground cover for the exclusion of grass and weed growth and to conserve all the moisture possible. Then we will have created a living shelter for protection against the elements of wind and storm and added a little more comfort to the prairie home surroundings. Failures will naturally occur amongst the trees first planted, the fittest will survive, and efforts must be made immediately to replace dead trees as they occur to keep the belt compact and prevent open spaces here and there which would quickly open the way for patches of grass, the worst enemy with which trees on the prairie have to contend. On dry situations particularly,