

SASKATCHEWAN NURSERY OPERATIONS

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Saskatchewan's total land area excluding freshwater is 251,700 square miles. Of this total, approximately 110,000 square miles is agricultural. Of the remaining 141,700 square miles of non-agricultural land, less than half is classified as commercial forest which encompasses a 37 million acre strip across the north central area of the province.

In June of 1977 one forest fire devastated approximately 285,000 acres within this commercial zone - with numerous other fires destroying thousands of acres during this period.

Major Forest Industries operating within this commercial zone include:

- (1) Prince Albert Pulp Company Limited in the central portion of the commercial forest.
- (2) Simpson Timber Company Limited operating a stud mill in the eastern portion.
- (3) MacMillan Bloedel Limited manufacturing waferboard from Trembling Aspen and Black Poplar, also in the eastern portion.
- (4) Meadow Lake Sawmill in the western portion produces studs.
- (5) Saskatchewan Forest Products Corporation - a Crown Corporation - produces lumber poles, railway ties, fence posts, studs and plywood from various mills throughout the forest area.

With the increasing utilization of forests by wood-using industries, a continuing reforestation program is being carried out in Saskatchewan to replenish cutover and burned over forest lands and understocked areas where natural regeneration is inadequate for potential timber production.

There are currently two producing Provincial Government operated tree nurseries in Saskatchewan.

Big River forest nursery has been in production to a limited extent since 1920. In 1972 purchase of additional acreage has expanded the cultivated area from 25 to 120 acres. Approximately 80 acres are currently in production.

Prince Albert nursery was started in 1960 to supplement production at Big River. Here there are 275 acres under cultivation with 150 acres in production.

Two additional "Satellite" nurseries are currently under development. Each consists of 25 acres and will have a maximum starting production of 100 to 150 thousand trees. These two nurseries are located in areas of the province reliant for their livelihood upon forest related enterprises.

Species

The major species grown for reforestation in Saskatchewan are White Spruce and Jack Pine with a limited number of Black Spruce also grown.

Additional species grown in small amounts for recreational planting include:

Colorado Blue Spruce, Lodgepole Pine, Scots Pine, Siberian Larch and Red Pine. Approximately 2 million various deciduous species are also produced annually at Prince Albert nursery for similar planting projects.

The current combined annual production for both nurseries is approximately 7 million trees with a projected production target of 12 million by 1980.

Rotation

Originally stock rotation in Saskatchewan nurseries for both White Spruce and Jack Pine was 4 years.

Seedlings were grown for 2 years in broadcast seedbeds, and then lifted and lined out in transplant beds for an additional 2 years.

Since the conversion to row seeding and root pruning in 1973, a 3 year rotation for White Spruce and a 2 year rotation for Jack Pine has been achieved.

Seeding

Seeding is usually carried out in the fall on seedbeds that have previously had peat moss incorporated to add fibre and structure to the soil.

Seed is sown by means of a drill seeder into 42 inch wide beds containing 7 rows of seedlings with - 6 inch spacing between the rows.

An effort is made to achieve a density of approximately 25 seedlings per square foot. The seed is then mulched lightly with a wood fibre slurry which is sprayed onto beds by means of a hydromulcher.

Stock Maintenance

(1) Fertilization

Due to high soil Ph, especially at Prince Albert Nursery, ammonium sulphate fertilizers are applied on stock.

Sulphur at 400 lbs./acre is also applied to fields at Prince Albert Nursery in order to lower the Ph which is approximately 7.2.

Fertilizer is applied in granular form using tractor mounted spreaders to broadcast over the beds.

(2) Weed Control

Nylon is incorporated into seedbeds about 3 weeks prior to seeding at 400 lbs./acre as a pre-emergent herbicide.

Enide is also used as a pre-emergent herbicide, sprayed over beds during the 2nd and 3rd year at 5 lbs. active per acre.

Linuron was used at 1.5 lbs./active acre as a pre-emergent herbicide on large White Spruce stock - usually in the 4th year, before buds flush.

Varsol is occasionally used on small weeds in the 2 to 4 leaf stage at a rate of 50 gallons per acre before the buds flush.

Glyphosate trials were initiated this season on White Spruce with encouraging results - little damage was noted.

Hand weeding is still extensively used in order to keep weeds under control.

(3) Irrigation

Irrigation systems consist of portable aluminum laterals with rotating sprinkler heads connected to above ground aluminum mains at Prince Albert Nursery and Buried PVC mainlines at Big River Nursery.

Both nurseries have pumps activated by electric motors.

Frequency of irrigation is determined by visual observation in the field.

Lifting

The bulk of lifting operations occurs in the spring.

Tractor mounted 3-point • hitch lifting blades are drawn under beds, loosening the trees.

(Prince Albert Nursery purchased a mechanical seedling harvester this spring in order to speed up lifting operations).

The trees are then lifted by hand, packed in tubs and transported to Modern. Packing sheds.

Here, they are sorted, culled, counted and packed in cardboard boxes 12" wide, 24" long x 18" high, which are lined with plastic bags with peat added in order to retain moisture within the seedlings.

Cold storage facilities are located at Prince Albert Nursery and trees are kept here in storage until required by planting crews.

Field crews on the larger planting operations have small refrigerated trailers for keeping stock cool in the field prior to planting.

The number of persons employed by both nurseries combined during peak periods is approximately 85.

The base labor rate is \$5.40 per hour.

Because of rising labor costs and increased production levels, Saskatchewan's major nurseries are looking now to efficient mechanization to alleviate high costs of Production.