THE STATUS OF CONTAINER PLANTING PROGRAMS IN CANADA

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Abstract.--Containerized seedlings accounted for 11% (2.6 million seedlings) of all planting stock produced for reforestation in Saskatchewan in 1980. It is expected that container stock will eventually increase to about 30% (approximately 8 million seedlings) of total planting stock production. Although the container program is currently based on use of the FH 408 paperpot, future program development will be determined by planting considerations rather than nursery factors.

Résumé--En Saskatchewan, 11% du reboisement s'effectue actuellement au moyen de plants en pots en papier FH 408; on projette de porter cette proportion à 30%. À l'avenir, le système de contenants utilisé tiendra compte des facteurs associés à la plantation plutôt qu'à la culture en pépinière.

INTRODUCTION

Containerized seedlings have been tested in Saskatchewan since the mid-1960s. The benefits of container-grown reforestation stock were recognized in the early 1970s, but it was not until 1977 that adequate container-growing facilities were constructed. Since then, nursery and reforestation personnel have developed a greater appreciation for the container-grown seedling and the flexibility that it offers.

CURRENT PRODUCTION

All reforestation stock used by both government and industry in Saskatchewan is grown by the Department of Tourism and Renewable Resources at one of the four provincial tree nurseries.

The largest nursery in Saskatchewan is in Prince Albert, and was established in the early 1960s to produce stock for highway and park plantings in the southern part of the province. With the opening of the pulp mill in Prince Albert the emphasis at the Prince Albert nursery was shifted to the production of reforestation stock.

Current production capacities at the four Saskatchewan nurseries are summarized in Table 1. The container facilities at the Prince Albert Nursery were constructed in 1977 and consist of two Lord and Burnham glass greenhouses with a total growing area of 1,115 m^2. These have propane unit heaters and evaporative coolers. There is one double-poly greenhouse at the Big River Nursery which has a growing area of 268 m^2 and is heated by two oil furnaces.

Container planting in Saskatchewan is confined mainly to white spruce, which is produced in the FH 408 Japanese paperpot. The FH 308 paperpot has been used with suc-

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Table 1. Production capacity of Saskatchewan nurseries, 1981

Nursery	Species	Bare-root stock[a] (000,000)	Containerized stock (000,000)
Prince Albert	Jack pine (*Pinus banksiana* Lamb.)	4.0	-
	White spruce (*Picea glauca* [Moench] Voss)	5.3	1.3
Big River	White spruce	4.9	0.3
Other nurseries (2)	Jack pine	2.2	-
		16.4	1.6

[a]Jack pine as 2-0; white spruce as 3-0.

cess at the Prince Albert Nursery, but the FH 408 is preferred. The Big River Nursery is currently growing seedlings in Spencer-Lemaire "Rootrainer" 5s to gain nursery and operational planting experience with this type of container stock.

Under current growing schedules both the Prince Albert and Big River nurseries would normally be able to produce two crops annually. However, only the Prince Albert Nursery was in operation in 1980, when it produced 2.6 million white spruce seedlings in three crops. The third crop was grown in a shade area rather than in the greenhouse; success was limited because of seed losses to birds. In 1981 budget restrictions reduced production to one crop at each nursery, for a total of 1.6 million seedlings.

FUTURE PRODUCTION

It is not anticipated at this time that container production in 1983 will exceed the 1981 level of 1.6 million white spruce seedlings. This situation reflects uncertainty in a number of areas, including the outcome of negotiations with forest management licence holders. The provincial government currently plants 9.3 million of the 12 million seedlings planted annually in Saskatchewan. The proposed level of planting for 1983 is 20 million seedlings, of which it appears that 17 million will be planted by the province and 3 million by industry. Recommendations have been made that the province maintain a production level of 20 million seedlings per annum until such time as negotiations with forest management licence holders have been completed. It is anticipated that one of the results of these negotiations will be the transfer of reforestation responsibilities to industry.

Recent investigations show that Saskatchewan has amassed a backlog of 122,000 ha of unregenerated forest land since 1965. At present, over 15,000 ha of provincial forest are burned over and harvested each year. Thus, an estimated 42 million seedlings per annum would be required to reforest 100% of the current annual cutover and burnover and to reforest the existing backlog within 10 years.

Considerable capital investment would be required to enable Saskatchewan nurseries to produce 42 million seedlings per annum. An estimated 3,500 m^2 of additional greenhouse space would be required at the Big River Nursery and an additional 5,900 m^2 at the Prince Albert Nursery. In addition, one of the smaller nurseries should double its bare-root capacity, and a new nursery consisting of bare-root facilities plus 7,000 m^2 of greenhouse space would have to be established in the eastern part of the province.

It is idealistic, however, to think that Saskatchewan will increase seedling production to the 42 million level. In all probability, reforestation plantings will eventually increase to a maximum of 25-30 million seedlings per annum, of which container stock will likely comprise 30% (in comparison with the present 11%).

As indicated earlier, Saskatchewan nurseries are using the paperpot system. The decision to use paperpots was made early in the 1970s after testing of numerous container systems. Disposability was a major selling point. However, over the years we have investigated other containers as they became available. We will continue to evaluate new systems and re-evaluate old systems to satisfy the demands of both government and industry reforestation programs. The paperpot system has presented a minimum of problems. However, our industrial clients have indicated a preference for the Spencer-Lemaire system. One industrial client is currently testing a number of container types in its research greenhouse and its findings will no doubt have an impact on the future of containerized seedlings in Saskatchewan.

At present, over 90% of the seedlings planted each year by the provincial government are planted under contract. Recent experience has shown that Saskatchewan contractors demand more to plant containerized seedlings than to plant bare-root seedlings. This can be attributed to the increased handling problems associated with the planting of containerized seedlings on our typically wet, inaccessible sites.

In light of the above, the future of containerized seedlings in Saskatchewan is likely to be determined more by field factors than by cultural considerations. Over the years, we have demonstrated, to our own satisfaction, that a healthy plantable seedling can be grown in any type of container. Therefore, the critical factors in evaluating containers for future production will be those associated with planting.