



MAINE SEED  
COLLECTION ZONES

- \* The higher cost of the Scotch pine seed is due, in part, to hand picking (the other species are collected from squirrel catches). The extraction costs are also slightly higher.
- \*\* The high cost of the larch seed is due to the small size of the cones.' Considerable time is required to gather a bushel. The extraction costs of this species are also slightly higher.

## Cone & Seed Processing Costs

J. A. Rollins - Maine

### I. Collection of Cones

Cones are purchased from individuals who have located a suitable seed source and had it checked by the Service (County) Forester (for the area involved). The cones are brought to the Forester's office and held for pick up by the Nursery truck.

### II. Processing of Cones

#### A. Storage

Cones are received and held in the grain sacks. These sacks are laid in a single layer on a barn floor.

#### B. Drying

Drying utilizes forced hot air from the same furnace used to heat the Nursery building. The hot air is circulated through the racks of cones by an 800-cubic feet-per-minute fan powered by a one-horsepower motor. Drier capacity is 96 bushels (192 bushels in two sections). For very green white pine cones, only 96 bushels are placed in the drier at one time. One section (48 bushels) is processed each day. The cones are in the drier 48 hours. The first 24 hours for pre-drying without direct heat or air circulation. The second 24 hours heated air at 110°F is passed through the section. This arrangement allows all the circulated air to be concentrated in one section resulting in a greater air flow than could be obtained if both sections were operated at the same time.

#### C. Extracting

Extraction is accomplished in wire-mesh, wood-frame tumbler eight feet long by two feet in diameter.

#### D. Cleaning

1. Needles, twigs, and coarse materials are "scalped" on the first pass through a Clipper No. 27 two-screen grain cleaner.
2. The seed is then de-winged in two or three passes through a Crippen Model grain cleaner which rubs the seed against the inside of a rubber-lined drum.
3. Final cleaning is then accomplished in one or two passes through the Clipper cleaner.

#### E. Storage of seed

1. Container - plastic-lined, 30-gallon fiber drums with metal tops.
2. Drums are placed in cold storage plant at 33-36°F.

### III. Cost (all prices per bushel)

A. Cone Purchases - recent prices paid for cones	Cost/Bu.	<u>1/</u>
White pine	\$2.00	
Red pine	(6.00)	
White spruce	(6.00)	
Norway spruce	(2.50)	
B. Bags - \$.10-.20 from local feed stores	.20	
C. Transportation from concentration points	.19	
D. Handling at Nursery (unloading truck, storing, loading drier)	.03	
E. Drying, extracting seed, bagging cones & seed	.21	<u>2/</u>
F. Cleaning	.05	
	Total	<u>\$2.68</u> <u>3/</u>
G. Sale of cones @ 50¢/bu. plus 20¢ for extra bag (2 bu. dry cones for 1 bu. green)	-1.20	<u>3/</u>
	Net cost	<u>\$1.48</u>
H. Yield - 12 ounces per bushel		
I. Cost per pound - \$1.97(for white pine)		

- 1/ The forester's time, which is considerable and high priced, has not been included in these figures.
- 2/ The cost of heating the air used in drying the cones and the cost of the electrical power used, have not been included in the cost figures.
- 3/ Costs are quite variable and these are only approximate, but close by this year's experience for white pine.