



Forest tree seed certification in Canada under the OECD scheme and ISTA rules: summary report for 1991-1995

F. T. Portlock

Pacific Forestry Centre • Information Report BC-X-361



Natural Resources
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The Pacific Forestry Centre, Victoria, British Columbia

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1996

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Printed in Canada

A microfiche edition of this publication may be purchased from:

Micromedia Ltd.
240 Catherine St., Suite 305
Ottawa, ON K2P 2G8
Phone: (613) 237-4250
Toll-free 1-800-567-1914
FACS (613) 237-4251

CANADIAN CATALOGUING IN PUBLICATION DATA

Portlock, F.T.

Forest tree seed certification in Canada under the OECD scheme and ISTA rules : summary report for 1991-1995

(Information report, ISSN 0830-0453); BC-X-361)

Includes an abstract in French.

Includes bibliographical references.

ISBN 0-662-24460-5

Cat. no. Fo46-1/361E

1. Trees—Seeds—Certification—Canada.
2. Seeds—Canada—Testing. I. Pacific Forestry Centre. II. Title. III. Series:
Information report (Pacific Forestry Centre); BC-X-361.

SD401.5.P67 1996 634.9'562'0971 C96-980195-5

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Abstract

In the 5-year period 1991-1995, the Canadian Forest Service issued 539 certificates of provenance in accordance with the Organization for Economic Cooperation and Development (OECD) scheme for the control of forest reproductive material moving in international trade. These certificates represent 75 seedlots weighing a total of 3707 kg of seed with an estimated value of \$2 million. Since inception in 1970 of the scheme in Canada, 3563 certificates have been issued including 680 seedlots producing 36461 kg of seed.

During this same period, 126 certificates of seed quality (representing 3651 kg of seed) were issued in accordance with the International Seed Testing Association (ISTA) rules. This brings the total number of certificates issued to 1038, representing 38916 kg of seed.

Résumé

Au cours de la période comprise entre 1991 et 1995, le Service canadien des forêts a délivré 539 certificats de provenance dans le cadre du programme de l'Organisation de coopération et de développement économiques (OCDE) pour le contrôle du commerce international du matériel de reproduction des forêts. Ces certificats concernaient 75 stocks de semences totalisant un volume de 3707 kg de semences et une valeur estimative de 2 millions de dollars. Depuis le lancement de ce programme au Canada en 1970, 3563 certificats ont été délivrés pour 680 stocks de semences totalisant un volume de 36 461 kg de semences.

Au cours de la même période, 126 certificats de qualité (représentant un volume de 3651 kg de semences) ont été délivrés conformément aux normes de l'Association internationale d'essais de semences (AIES), portant le total des certificats délivrés à 1038, pour un volume total de 38 916 kg de semences.

Introduction

The certification of the origin of Canadian forest tree seed began in 1970 under the Organization for Economic Cooperation and Development (OECD) scheme. Responsibility for implementing the scheme in Canada was delegated to the Canadian Forest Service (CFS), formerly known as Forestry Canada. Regional forestry centres of the CFS were given responsibility for administration of the certification scheme in their respective regions (Appendix 1). The Pacific Forestry Centre, as the most active certification centre, developed the national certification program. In addition, this centre, which is responsible for British Columbia and the Yukon Territory, has issued 99% of certificates of provenance for forest tree seed in Canada.

The OECD scheme has four categories of certification (starting at the lowest level): 1. source-identified, 2. select stands, 3. untested seed orchards, 4. tested seed orchards. Details of the scheme were described by Piesch and Stevenson (1976), and synopses of activities from 1970 to 1990 were published by Piesch (1977), Pollard (1982), Edwards (1988), and Portlock (1992).

Certification of the physical quality of Canadian forest tree seeds under the International Seed Testing Association (ISTA) rules by the CFS (Appendix 2) has continued since 1974 with the Pacific Forestry Centre issuing most certificates under this program. Information on ISTA and the accreditation of the Pacific Forestry Centre as a member laboratory was published by Edwards (1983) and synopses of activities from 1979 to 1990 were published by Edwards (1983 and 1988), and Portlock (1992). The 1988 (Edwards) and 1992 (Portlock) publications combined the OECD and ISTA activities into one summary report, as does this publication.

Certification in Canada under the OECD scheme and ISTA rules is undertaken at the request of the importing country and provided to the exporting Canadian seed dealer. Most forest tree seed certified in Canada under the OECD scheme is from the source-identified category, and at least 90% of all exported tree seed is certified.

Summary of activities prior to 1991

Certification in the first year of operation (1970) of the OECD scheme produced the greatest volume of certified seed for a 1-year period to this date. The number of yearly certifications since that time has fluctuated with the cone crop available.

The number of certifications under the OECD scheme during previous 5-year reporting periods is shown in Table 1. The majority of seed was certified under the source-identified category with very small volumes certified in the untested seed orchard category.

Seed of lodgepole pine (*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.), Sitka spruce (*Picea sitchensis* [Bong.] Carriere), Douglas-fir (*Pseudotsuga menziesii* [Mirb.] Franco), and grand fir (*Abies grandis* [Dougl. ex D. Don] Lindl.) have produced the bulk of certified seed. However, in recent years the certification of lodgepole has been severely decreased due to lack of overseas demand.

The volume of seed tested (Table 2) under the ISTA program has also fluctuated with the cone crop available, but retesting of seedlots adds to the work in each reporting period. A broader range of species has been tested under the ISTA program than certified under OECD, but the number of non-native species tested has declined. The number of requests for blue certificates (which apply to samples submitted by seed dealers) compared to orange certificates (which apply to entire seedlots since the sampling is performed by the Pacific Forestry Centre staff) remained constant.

Certification of origin, 1991-1995

All certifications under the OECD scheme for this reporting period were conducted by the Pacific Forestry Centre. The total weight of seed certified during this reporting period (Table 3) has decreased significantly from previous periods (Table 1). This trend holds true for the number of seedlots certified and certificates issued. However, the number of species certified has not changed.

The large cone crops of Sitka spruce from 1991 through 1994 accounted for most of the seed certified. In addition, Douglas-fir and western redcedar continue to be collected in large amounts as cone crops are available. During this reporting period, deciduous species were certified for the first time. These species included red alder (*Alnus rubra* Bong.) and Sitka alder (*Alnus viridis* ssp. *sinuata* [Regel] Á. Löve & D. Löve) (Table 4). Lodgepole pine collections from the Yukon Territory have declined, but collections of subalpine fir (*Abies lasiocarpa* [Hook.] Nutt.) and black spruce (*Picea mariana* [Mill.] BSP) have increased.

The weight of seed certified under the untested seed orchard category (UTO) (Table 4) has remained low with a high of 11 kg in 1993. The number of registered orchards (Table 5) has declined slightly.

Certification of seed quality, 1991-1995

The official testing of tree seed under the ISTA rules has continued, although with reductions from previous reporting periods (Tables 2 and 6). The total value of seed tested during this period was estimated to be \$1.7 million. The number of tests conducted has decreased as has the number of OECD certifications. The average annual number of certificates issued for this period was 25, while the average for all years (1979-1995) is 61 certificates. This difference is due to small cone crops in 1991 and 1995, and large collections of single species from one site which require fewer number of tests. All tests during this period, which were the blue certificate type, were conducted by staff of the Pacific Forestry Centre.

Liaison

The Canadian Forest Service receives regular requests for certification and quality testing from seed dealers exporting tree seed from Canada (Appendix 3) and staff of the Pacific Forestry Centre frequently visit the seed dealers' facilities to provide continuous informal liaison. As an associate member of the British Columbia Tree Seed Dealers Association (BCTSDA), the Pacific Forestry Centre continues to assist the association in further enhancing the British Columbia seed trade. The Pacific Forestry Centre has also worked closely with the association on seed workshops (Portlock (compiler) 1993) and developing a field guide for cone collection (Portlock, 1996a).

At the international level, the Pacific Forestry Centre seed services officer attended the 1995 meeting of delegates for the OECD forest tree seed scheme meeting in Paris. At this meeting revisions to the scheme were discussed; however, a final decision was not reached and a working committee was formed to provide a revision for further discussion. A Canadian representative did not attend an extraordinary meeting in January, 1996 to discuss this new revision. However, the seed service officer informed the OECD that Canada agreed with this last revision and would only accept minor changes.

A national list of approved basic material certified under the OECD scheme in Canada (Portlock 1996b) was published to fulfill requirements as a member of the OECD forest tree seed scheme. This list includes all source-identified and untested seed orchard category collection sites in Canada. This national list should be updated on a 5-year basis in future summary reports.

Future of seed certification in Canada

The volume of seed certified in this 5-year reporting period has declined over previous periods. This result is partially due to reduced cone crops, but also due to reduced demand from foreign markets. The BCTSDA is actively developing markets and improving seed quality. The Canadian Forest Service will continue to administer the OECD scheme, but changes in the administration of the ISTA program are under discussion with the BCTSDA.

When revisions to the OECD scheme are completed, the Canadian rules of operation will be revised and published.

Table 1. Forest tree seed certified in Canada under the OECD scheme for 5-year periods ending in the years indicated

Year	Seedlots certified	Certificates issued	Species	Weight of seeds (kg)	Estimated value (CDN \$)
1975	127	930	9	7373	520 000
1980	173	710	8	8542	2 747 000
1985	165	665	7	8222	5 039 000
1990	140	719	5	8617	4 470 000
1995	75	539	6	3707	2 168 475
Average	136	713	7	7292	2 988 895

Table 2. Forest tree seed certified under the ISTA program in Canada for reporting periods ending in the years indicated

Year	Certificates issued	Species	Weight of seeds (kg)	Estimated value (CDN \$)
1982 (4 years)	349	28 ^a	10920	2 000 000
1985 (3 years)	302	24 ^b	9832	2 500 000
1990 (5 years)	261	22	10292	5 146 000
1995 (5 years)	126	14	3651	1 749 000
Average	260	22	8674	2 849 000

^aIncludes 14 non-B.C. species.

^bIncludes 7 non-B.C. species.

Table 3. Forest tree seed certified under the OECD scheme in Canada, 1991-1995

Year	Seedlots certified	Certificates issued	Species	Weight of seeds (kg)	Estimated ^a value (CDN \$)
1991	9	65	7	256	149 200
1992	15	143	7	1284	734 200
1993	24	156	6	992	603 600
1994	8	56	5	634	379 200
1995	19	119	5	541	302 275
Total	75	539	6	3707	2 168 475
Average	15	108	6	741	433 695

^aEstimated average values per kilogram of seed:

B.C. sources 1991-1995, \$500.

Yukon sources 1991-1995, \$1000.

Table 4. Weight (kg) of seeds certified by species under the OECD scheme in British Columbia and the Yukon Territory, 1991-1995

Species ^a	1991	1992	1993	1994	1995
British Columbia					
<i>Abies grandis</i>	-	-	-	45	-
<i>Abies lasiocarpa</i>	-	22	79	55	6
<i>Alnus rubra</i>	14	3	17	-	-
<i>Alnus sinuata</i>	-	-	2	-	-
<i>Picea sitchensis</i> (SI) ^b	156	985	570	503	-
(UTO)	1	1	11	6	-
<i>Pinus albicaulis</i>	-	-	-	2	-
<i>Pinus contorta</i>	24	16	27	-	42
<i>Pinus ponderosa</i>	5	-	-	-	-
<i>Pseudotsuga menziesii</i>	5	208	186	-	380
<i>Thuja plicata</i>	6	26	100	23	49
<i>Tsuga heterophylla</i>	-	7	-	-	-
Yukon Territory					
<i>Abies lasiocarpa</i>	6	1	-	-	60
<i>Picea glauca</i>	-	14	-	-	-
<i>Picea mariana</i>	12	1	-	-	4
<i>Pinus contorta</i>	27	-	-	-	-
Total	256	1284	992	634	541

^a Nomenclature as in Farrar (1995).

^b SI - source-identified category; UTO - untested seed orchard category.

Table 5. Untested seed orchards registered under the OECD scheme in Canada, by province

Province	Number of registered orchards
British Columbia	12
New Brunswick	18
Nova Scotia	11
Prince Edward Island	6
Total	47

Table 6. Number of certificates issued under the ISTA rules from British Columbia and the Yukon Territory by the Pacific Forestry Centre, 1991-1995.^a All certificates issued were of the blue form.

Species ^b	1991	1992	1993	1994	1995
<i>Abies amabilis</i>	-	1	-	-	-
<i>Abies grandis</i>	-	4	-	4	1
<i>Abies lasiocarpa</i>	2	4	2	5	-
<i>Alnus rubra</i>	1	1	2	-	-
<i>Picea glauca</i>	2	6	-	4	1
<i>Picea mariana</i>	2	-	1	-	-
<i>Picea sitchensis</i>	2	8	3	10	2
<i>Pinus banksiana</i>	2	-	-	-	-
<i>Pinus contorta</i>	3	10	-	10	-
<i>Pinus monticola</i>	-	3	-	-	-
<i>Pinus ponderosa</i>	1	1	-	1	-
<i>Pseudotsuga menziesii</i>	-	7	1	9	2
<i>Thuja plicata</i>	3	1	2	-	1
<i>Tsuga heterophylla</i>	-	1	-	-	-
Total certificates	18	47	11	43	7
Weight of seeds represented (kg)	222	1507	678	837	407

Grand total weight = 3651 kg

Average weight per year = 730 kg

^a Only region undertaking ISTA tests during this period.

^b Nomenclature as in Farrar, 1995.

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Appendix 1. Canadian Forest Service OECD forest tree seed certifying authorities

<u>Geographic area</u>	<u>Certifying authority</u>	<u>Officer in charge</u>
British Columbia, Yukon Territory	Canadian Forest Service 506 West Burnside Road Victoria, BC V8Z 1M5	John Dennis
Alberta, Northwest Territories	Canadian Forest Service 5320-122nd Street Edmonton, AB T6H 3S5	Attention: Director General
Ontario	Canadian Forest Service P.O. Box 490 1219 Queen St. East Sault Ste. Marie, ON P6A 5M7	Attention: Director General
Quebec	Canadian Forest Service P.O. Box 3800 1055 rue du P.E.P.S. Ste-Foy, PQ G1V 4C7	Attention: Director General
New Brunswick, Newfoundland, Nova Scotia	Canadian Forest Service P.O. Box 4000 South Regent St. Fredericton, NB E3B 5P7	R.F. Smith

Appendix 2. Canadian Forest Service ISTA authorized testing centre

<u>Authorized centre</u>	<u>Officer in charge</u>
Canadian Forest Service 506 West Burnside Road Victoria, BC V8Z 1M5	F.T. Portlock

Appendix 3. Seed dealers currently exporting seed from British Columbia and Yukon Territory under the OECD scheme

Source-identified category

Reid, Collins Nurseries Ltd.
P.O. Box 430
Aldergrove, BC
VOX 1A0

Att: Mr. Paulus Vrijmoed
Phone: (604) 856-6408
FAX: (604) 856-4218

Silva Enterprises Ltd.
P.O. Box 2888
Prince George, BC
V2N 4T7

Att: Mr. Peter Hellenius
Phone: (604) 963-8617
FAX: (604) 963-3490

Western Tree Seeds Ltd.
P.O. Box 144
Blind Bay, BC
VOE 1H0

Att: Mr. Frank Barnard
Phone: (604) 675-2463
FAX: (604) 675-2202

Yellow Point Propagation
Long Lake Rd.
R.R. No. 3
Ladysmith, BC
VOR 2E0

Att: Mr. Don Pigott
Phone: (604) 245-4635
FAX: (604) 245-4635

Untested seed orchard category

Western Forest Products Ltd.
Lost Lake Seed Orchard
1020 Beckwith Ave.
Victoria, BC
V8X 3S4

Att: Mr. Doug Stables
Phone: (604) 479-4911
FAX: (604) 727-9835

Yellow Point Propagation
Long Lake Rd.
R.R. No. 3
Ladysmith, BC
VOR 2E0

Att: Mr. Don Pigott
Phone: (604) 245-4635
FAX: (604) 245-4635