

#### 4.16 Identification of Seed Chalcids Infesting Seeds of B.C. Conifers

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[SPM 0003](#)

This collaborative B.C. Ministry of Forests/Canadian Forest Service/Institut National de Recherces Agronomiques (France) project has been trickling along for several years. 2003/04 was its first year of Forest Genetics Council funding. The long-term objectives are to:

- clarify the identity and host range of the North American species of seed chalcids in general, and of those exploiting conifer seed in B.C. in particular.
- determine the identity of, and attack timing data for, parasitoid insects attacking seed wasps.

In 2003/04 the following work was accomplished.

Seed samples from approximately 50 natural stand and orchard seedlots (predominantly *Pinus monticola*, *Pseudotsuga menziesii*, *Abies amabilis* and *Picea* sp.) collected in fall 2003 were shipped to the Canadian Forest Service Sault Ste. Marie lab in early 2004. Cones were also collected from natural stands of *Larix laricina*, *Tsuga canadensis*, *A. balsamea*, *Pn. strobus*, *Pc. rubens*, *Pc. glauca* and *Pc. mariana* in Northern Ontario (funded by Canadian Forest Service). All seedlots were X-rayed during winter 2004 to determine the presence of insect larvae within seeds. BC *Picea* sp., *A. amabilis* and *Pt. menziesii* and ON *A. balsamea*, *T. canadensis* and *P. strobus* hosted large numbers of *Megastigmus* spp. seed chalcids. Currently, a proportion of infested seed from all seedlots are being stored at 2°C until spring 2004, when they will be put in an outdoor insectary and checked daily for adult seed chalcid or parasitoid emergence. Half or more of the seeds from each infested sample have been shipped to France for genetic analysis of emerging specimens.

To determine identity and attack timing of parasitoids, cones from several B.C. natural stands (*Picea*, *Pseudotsuga*, *Abies*) with known high numbers of *Megastigmus* and associated parasitoids were collected in late fall 2003. The seeds were extracted and then sent to Sault Ste. Marie. Winter conditions allowed for only one late season collection of cones from these sites. Cone samples from two heavily infested *Pt. menziesii* orchards were collected monthly between October and December 2003. In December, all remaining cones were collected from these orchards; seed was extracted in early 2004 and subsequently sent to Sault Ste. Marie for analysis and insect rearing. Similar work was done at *T. canadensis*, *A. balsamea* and *L. laricina* sites in Northern Ontario (CFS funding): three collections of cones were made at each site, approximately one month apart. As above, insects from all these samples are being reared at Sault Ste. Marie and in France for morphological and genetic analysis of emergent adult chalcids and parasitoids.

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