**Management Guide for**

**Douglas-fir Seed Chalcid**

*Megastigmus spermotrophus* Wachtl

---

**Topics**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage</td>
<td>1</td>
</tr>
<tr>
<td>Life History</td>
<td>1</td>
</tr>
<tr>
<td>Identification</td>
<td>1</td>
</tr>
<tr>
<td>Management</td>
<td>2</td>
</tr>
<tr>
<td>Other Reading</td>
<td>2</td>
</tr>
</tbody>
</table>

---

**Key Points**

- This insect can chronically infest the cones of Douglas-fir but does not usually cause significant losses of the seed crop.
- However, this insect can infest up to 47% of extractable seed especially during low cone crop years.
- Seed orchard managers may want to identify infestations likely to result in high seed losses.

---

**Damage**

The larvae feed inside the seeds. Heaviest damage usually occurs when the cone crop is light because then the percentage of seeds attacked is greatest.

**Life History**

Female wasps lay eggs in seeds in immature cones that are 2 to 3 weeks old. Susceptible cones are from 1 to 3 inches long. Younger or older cones are usually not attacked. Eggs are laid directly into developing seeds, normally 1 egg per seed. Larvae overwinter inside seeds on the forest floor. They pupate in early spring within seeds and emerge during May into June.

**Identification**

There is no external evidence of damage. Dissection or x-rays of extracted seed is required to detect damage. Look for maggot-like larvae inside the seeds. They are approximately 2 mm long and creamy white.
Management

- Insecticides such as esfenvalerate are currently available for control of many cone and seed insects. Please check with current labeling guidelines to insure the insecticide is still labeled for use against the seed chalcid.
- Also, the manager can adopt an Integrated Pest Management system to incorporate monitoring and treating the Douglas-fir chalcid. Publication R6-FPM-UP-008-94 describes monitoring with sticky traps and information to help orchard managers decide whether or not to treat.

Other Reading

Cite as: Sturdevant, N. 2004. Management guide for Douglas-fir seed chalcid. 2 p. In: Forest insect and disease management guide for the northern and central Rocky Mountains. USDA Forest Service, Northern and Intermountain Regions, State and Private Forestry, Forest Health Protection; Boise, ID, and Missoula, MT. In cooperation with the Idaho Department of Lands and the Montana Department of Natural Resources and Conservation. (Non-standard pagination.)