PLANNING FOR ALFALFA SEED PRODUCTION AND CONTROL OF ALFALFA SEED CHALCID

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If alfalfa seed production is planned for this season, it is important that a management program for insect pests is in place. A number of arthropod pests can reduce yield and/or quality of alfalfa seed. However, control of the Alfalfa Seed Chalcid must be started during May as this species cannot be controlled by insecticide applications during production of the seed crop. Adult wasps insert eggs inside of seeds within the pods. Larval and pupal stages develop inside the alfalfa seeds leaving insecticide application ineffective.

The chalcids overwinter as pupae in seed that was spilled in the previous season or in seed that was produced by alfalfa growing in field border areas and roadsides. Adults emerging in May and June lay eggs in seed being set on alfalfa wherever it is available, with the most common seed source being plants growing outside of fields. Several generations of the chalcid are completed each year. Level of infestation in seed becomes progressively higher as chalcid populations increase mid to late summer. Research has shown that up to 80% of seed harvested in September may be infested.

Fields to be utilized for alfalfa seed should be harvested for hay about mid-May, then left for seed production. Flowering before mid-June will not develop seed because of low bee activity and stands cut after June cannot produce seed before September, increasing the likelihood of alfalfa seed chalcid damage.

Seeds are mature about 4 weeks after pollination of an alfalfa flower, and it takes another 3 weeks to dry. If an alfalfa field blooms for 3 weeks, that's about 10 weeks from first bloom to seed harvest. To harvested seed in mid-August, alfalfa should be cut about May 15 (Table 1).

Table 1. Time from first cutting to seed harvest.

<table>
<thead>
<tr>
<th>CUT HAY</th>
<th>PLANTS GROW</th>
<th>1ST BLOOM</th>
<th>3 WEEKS BLOOMING &amp; POLLINATING</th>
<th>SEED SETTING</th>
<th>SEED MATURING</th>
<th>PODS DRYING</th>
<th>HARVEST SEED</th>
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<tbody>
<tr>
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<td>June 14</td>
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After first cutting, there are two management approaches that can help in reducing levels of alfalfa seed chalcid infestations in the seed crop.

The first of these is to keep volunteer alfalfa outside of field areas clipped as much as possible to prevent seed set and remove potential habitats for population increases of the chalcid (Fig 1).

![Alfalfa Seed Chalcid Adult.](image1) ![Damaged Seed.](image2)

Secondly, as noted in Table 1, it is important to begin growth for the seed crop after the first forage harvest in May, so that seed can mature and be harvested in late July or early August (Fig 2). This harvest timing will be early enough to avoid the highest levels of infestation by the chalcid during late August and September.

![Harvesting alfalfa seed. Briggs Farms, Marsing, ID.](image3)
In Summary. *Things to keep in mind!!!*

Seed chalcids cannot be controlled effectively with chemical insecticides, and spray applications made during bloom and seed set may cause high levels of mortality to pollinators. Thus, the primary means for limiting infestations is reduction of populations entering seed production fields through sanitation.

Methods of sanitation include:

- Elimination of volunteer alfalfa along fence rows and roadsides by mowing or spraying with herbicides. The primary source of host plants for the chalcid in spring and early summer is volunteer alfalfa.
- Careful harvesting to avoid spilled seed that can serve as overwintering sites for chalcids.
- Not storing uncleaned seed through the winter as it may be infested with chalcids.
- Schedule seed production to complete harvesting by mid-August to avoid the time in late summer when the highest populations of chalcids are present.