

MANAGING WEEDS IN ORGANIC AND CONVENTIONAL SEEDLING ALFALFA

Mariano Galla¹

To produce high quality alfalfa, growers must be engaged in the timely management of pests, including weeds. Seedling alfalfa is especially susceptible to weed interference as interspecific competition can inhibit alfalfa growth and development and compromise stand persistence. In addition, poor weed control in seedling alfalfa can have long term repercussions influencing the size of future weed infestations, through contributions to the soil seedbank, necessitating additional control measures.

The key for a successful weed management program, in both organic and conventional alfalfa is the establishment of a good and vigorous stand (Summers and Putnam, 2008). Growers should consider planting in fall (September or October), to allow alfalfa to grow and get established before winter weeds start germinating. Early planting is particularly important in fields where problematic weeds such as perennial grasses, sedges and bindweed (*Convolvulus arvensis*) may be present. On the other hand, alfalfa planted in winter can be outcompeted by winter weeds, while spring planting will suffer summer weeds competition.

However, unfortunately, even when following all precautions, and applying all best practices it is possible that in spring your seedling alfalfa could be infested with many winter weeds. What to do in these situations?

The use of glyphosate in Roundup Ready alfalfa has proven an effective means to control many difficult weeds without crop injury issues, although the spread of glyphosate resistant weeds, such as fleabane (*Conyza spp.*) may reduce the effectiveness of the technology for many growers. Weed management during stand establishment in conventional, not roundup ready alfalfa poses an extra challenge because few herbicides are labeled and many labeled products have the risk of crop phytotoxicity. This is a particularly pressing issue in the Imperial Valley, where all the alfalfa acreages are legally mandated to be planted with conventional (without the Roundup Ready trait) varieties. Statewide, conventional alfalfa, however, accounts for almost 40% of California's total alfalfa acreage (Mick Canevari, UCCE Farm Advisor Emeritus, personal communication)

The most commonly used herbicides in seedling alfalfa are Raptor, Pursuit 2,4-DB and Buctril. These herbicides are used alone or in tank-mix combinations depending on the weed species present. The selective grass herbicides Select Max or Poast are often used if grassy weeds are present.

The risk of crop injury may be increased with some tank mixes when adding an oil adjuvant in high temperatures.

¹M. Galla (mfgalla@ucanr.edu), Agronomy and Weed Science Advisor, UC Cooperative Extension, 821 E. South Street, Orland, CA 95363

In: Proceedings, 2018 California Alfalfa and Forage Symposium, Reno, NV, Nov. 27-29. UC Cooperative Extension, Plant Sciences Department, University of California, Davis, CA 95616. (See <http://alfalfa.ucdavis.edu> for this and other alfalfa conference proceedings).

Weeds may also be too big for effective herbicide control (generally they have to be 1-3-inches or less) and the alfalfa seedlings are too small for these herbicides (have to be at least at second trifoliolate leaf). Buctril also needs to be applied when temperatures are below 80°F. Shark is not an option because it is not labelled for seedling alfalfa and might kill the young alfalfa plants. It is also important to be extra careful to avoid spray drift of any herbicide used to susceptible crops like tomatoes, especially at this time of year with new crops being planted. In addition, even if the herbicide was effective in controlling big weeds, those would be affecting anyway hay quality, as big dead weeds will be mowed and baled in the hay.

If most weeds observed in the field were winter annuals, the best option would probably be to wait. In spring time winter weeds are on the downward slope and phasing out with warmer temperatures and longer days: the perfect situation for alfalfa growth. Growers should wait a couple weeks to let the alfalfa reach a safe stage for herbicide use, then see what things look like. It could be that after the field is cut, baled, and irrigated that a weed control application will not be needed.

What are the options for organic growers?

A good strategy to suppress weeds without using herbicide is to interplant oats (*Avena sativa*) with alfalfa during stand establishment. Even though quality will be affected in the first two cuts, by the third cut pure alfalfa should be harvested and losses in quality should be offset by higher yields.

If weeds became established, winter sheep grazing (or “sheeping off”) it is a strategy that has been proved beneficial for both sheep and alfalfa producers (Long and Doran, 2013). In particular, sheep not only feed on winter weeds but they also clean up the alfalfa vegetation that die back in winter, thus producing a cleaner hay the following spring.

References

Summers CG, Putnam DH (2008) Irrigated Alfalfa Management for Mediterranean and Desert Zones. University of California Agricultural and Natural Resources, Oakland, CA 372 p. UC ANR publication number 3512

Long RF, Doran M (2013) ‘Sheeping off’ alfalfa fields adds value for sheep producers and growers. Retrieved November 14, 2018 from: <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=9249>