



What is Your Weed Management Plan

This Q and A digs into how to develop a weed management plan, the benefits a plan provides, and how a weed management plan can help a farmer make decisions during the growing year.

Q. Why is weed management important?

A. Because weeds –

- Compete with crops for the building blocks of yield: water, nutrients, and light.
- Produce seeds that can germinate the following year or years.
- Inhibit or slow down harvest.
- Reduce grain quality when weed seeds contaminate the grain.
- Can become hosts for crop diseases, such as how Johnsongrass can host maize dwarf mosaic virus).
- Can host crop-damaging insects, such as chickweed hosting black cutworm.
- Can be poisonous to humans and/or livestock, like black nightshade.

Q. What is a weed management plan (WMP)?

A. A WMP is a multifaceted strategy to control weeds based on Integrated Pest Management (IPM) techniques. IPM includes several strategies that approach weed management from several angles. Weed identification, measuring weed populations against economic thresholds, and mapping weeds within a field can help farmers understand the weed pressure in their fields. Using biological controls, crop rotation, tillage, in-crop cultivation, and cover crops can help discourage weed growth. Various herbicide applications, appropriately timing those applications (fall, spring, PRE, POST), and considering the location of the field to be treated in regard to neighboring fields, homes, schools, etc., are also components of a WMP.

Q. Why is it important to have a WMP?

A. With a WMP in hand, farmers can be mindful of their budgetary constraints and be proactive in their approach to controlling weeds.

Q. What is a starting point for developing a WMP?

A. Knowledge of historical and current weed populations can provide a basis for developing a WMP. Historical weed growth is important because the seeds of many weeds can be dormant but viable for many years in the soil, waiting until conditions are favorable to germinate. Perennial weeds can grow year after year. Awareness of current weed growth, weed population, and weed size is important to solidify a control strategy.

Q. What is the difference between an inventory of weeds, a weed survey, a weed map, and weed monitoring?

A. A weed inventory is a record of the weeds in an entire management area. A survey is a record of the weeds in a representative portion of the management area. A weed map is a recording of the location of the weeds within the management area or within the portion surveyed. Weed monitoring is the repeated evaluation of identified weed populations.

Q. What information should be collected during monitoring?

A. Take pictures, and identify the weed species, density, height, biomass, and canopy cover.

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Q. Why is weed identification important?

A. The type of weed control most appropriate for a given weed management plan can be greatly influenced by the biological characteristics of the particular weeds growing (or expected to grow) within a field. Perennials with rhizomes or deep tap roots require a different method of control than annuals germinating from seed, and waxy coatings that naturally occur on the leaves of some weed species can reduce or prevent the absorption of herbicides. Furthermore, different weed types grow at different rates, and weed growth rate can dictate how quickly controls need to be applied or utilized. Knowledge of herbicide-resistant species is also important for helping to determine a successful weed management program.

Q. Why is it important to consider neighboring homes, schools, etc. in a WMP?

A. Herbicide applicators must be aware of surrounding areas because of the potential harmful impact to humans, livestock, pets, and sensitive plants due to off-target movement of the herbicide.

Q. What are biological controls?

A. Biological agents are a complex of living organisms and biological processes that provide weed control or suppression. Examples can include insects, mites, fungi, bacteria, viruses, nematodes, birds, and other animals. Biological controls may be a useful alternative for managing weeds in places where cultural, chemical, and mechanical controls are not viable such as in pastures, rangelands, and waterways.

Q. Should there be multiple WMPs for each field?

A. Weather or other situations may prevent the use of the first WMP within an acceptable time frame; therefore, one or more alternative WMPs should be determined in advance.

Q. What should the basic weed controls be in a WMP plan?

A. For a basic WMP, consider a fall weed control program (herbicides, cover crops, tillage), starting clean in the spring (residual herbicides or tillage), and in-crop weed management (timely application of residual, foliar systemic, and/or contact herbicides). All herbicide labels should be read and followed, particularly in regard to any potential grazing of cover crops or restrictions regarding future crops.

Q. Should herbicides with multiple sites of action (SOAs) be included in the WMP?

A. Yes. The use of different site of action (SOA) herbicides can help reduce the potential for weeds to develop herbicide resistance. Different herbicides may be combined during one application or used separately at different times, such as one herbicide applied as a PRE and another applied POST.

Q. Does a WMP contain a combination of tactics?

A. Yes. Cultural (e.g., tillage, planting date, crop) tactics should be the first tactics considered. The second tactic may be a pre-plant incorporated or pre-emergence surface-applied residual herbicide followed by a timely in-crop application.

Q. Why is weed height important?

A. Weeds less than 4 inches in height and actively growing tend to be more susceptible to herbicides and easier for tillage operations to remove. Large leaves can prevent contact herbicides (especially those with low translocation properties) from reaching the plant's growing points, which must be disrupted to optimize control. Tillage operations may cut off portions of large plants yet fail to remove the entire root mass, which can then support regrowth.



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Q. Should herbicide application rates be on the low or high side of labeled rates?

A. Herbicides should always be applied at the rates specified on the product label. The potential for herbicide resistance to develop increases when weeds are not completely killed when lower application rates are used. Using rates higher than labeled recommendations has the potential to cause crop injury, limit replanting or succeeding crop options, and increase environmental concerns.

Q. Is there a global positioning system (GPS) program available to help record and map weed populations?

A. During harvest, combine operators can use the Climate FieldView™ platform to “pin” the location of weeds within a field. Notes can be made to help identify the different weeds to help develop control measures. Alternatively, weed identities, populations, and locations can be recorded manually in a pocket notebook.

Q. How can a WMP be beneficial during the growing season?

A. Having a WMP in place prior to the growing season can save valuable labor and time that would otherwise have to be used researching available controls for known weed infestations during the growing season. The plan can be quickly put in play by the farmer or presented to a retail applicator for activation. Pre-researched precautions regarding surrounding fields, schools, subdivisions, sensitive plants, etc. can be quickly refreshed to help avoid the potential for misapplication.

Additional References

Wilén, C.A., Koike, S.T., Ploeg, A.T., Tjosvold, S.A., Bethke, J.A., Mathews, D.M., Stapleton, J.J. General methods of weed management, in UC IPM Pest Management Guidelines: Floriculture and Ornamental Nurseries. UC ANR Publication 3392. Davis, CA. <https://ipm.ucanr.edu/agriculture/floriculture-and-ornamental-nurseries/general-methods-of-weed-management/>

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Performance may vary, from location to location and from year to year, as local growing, soil and environmental conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on their growing environment.

The recommendations in this material are based upon trial observations and feedback received from a limited number of growers and growing environments. These recommendations should be considered as one reference point and should not be substituted for the professional opinion of agronomists, entomologists or other relevant experts evaluating specific conditions.

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