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UT Extension

W192

Why Will My Weed Problem Not Go Away?

8 Common Reasons Why Herbicides Fail

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Introduction

The frustration can be unsettling. "Why won't this weed die? I sprayed it with an herbicide, but for the life of me I can not figure out why it's still here." This is a very common story we hear from many people trying to control tough weeds in lawns, vegetable gardens, flower beds, nurseries, forests and agricultural fields. Many times just a small change in your approach to controlling the weed is all that is needed, but sometimes the problem can be a bit more complex. Whatever the weed control challenge, it is likely someone else has shared this same experience.

Herbicides can be very effective tools to control problem weeds, especially when the correct herbicide is chosen for the weeds present. However, sometimes herbicides just do not perform as planned. When this happens, there are often clear reasons for this reduction in weed control. Some of the most common reasons for these herbicide failures are outlined below.

1. Were the weeds properly identified and the appropriate herbicide product selected?

Were the target weeds identified properly? If multiple weed species were present, did the herbicide product selected mention all of these weeds in the "Weeds Controlled" section on the label? When controlling weeds with herbicides, it is crucial to understand that different weed species will often respond differently to a variety of herbicide products. For example, 2,4-D is a highly effective herbicide for selective control of dandelion in home lawns. However, if you have both white clover and dandelion in your lawn, do not expect the 2,4-D alone to control the white clover as well, even though both are broadleaf weeds. This is why herbicide manufacturers often combine multiple active ingredients into a single product, so that a multitude of weeds can be controlled by just one product. Therefore, make sure all of your weeds are properly identified and then choose the right product for the entire job. If you need any help with this, contact your local Extension agent.

2. Was the herbicide application rate correct?

Different weed species may not only require different types of herbicide products, but also different rates of an individual herbicide product for control. Therefore, choosing the correct application rate to control a specific weed problem is imperative for optimal control.

There are generally two types of herbicide applications: broadcast applications and spot applications. Broadcast herbicide applications are made when pounds, quarts, pints or ounces of an herbicide product are applied evenly over a specific amount of land, usually represented as per-acre or per-thousand square feet (1000 ft^2). Spot herbicide applications are often expressed as a percentage of the formulated herbicide per volume of the total spray mixture.

In general, spot application mixtures are often made up of 1 to 25 percent solutions of an herbicide product dissolved in a carrier, usually water or a water-plus-surfactant mixture. These spot-treatment mixtures are applied to several small "spots" in a location where a target weed is found. The application usually involves spraying the foliage of the target weed until it is thoroughly wet. Unfortunately, if directions for a broadcast or spot application are confused during the mixing process, it can lead to too much or not enough herbicide active ingredient in the spray solution, leading to either subpar weed control or potential injury to non-target plants in the general vicinity. Therefore, always use the appropriate labeled

rate for whatever application method you desire. If you have different kinds of weeds in your field that need different rates of the herbicide product of choice for control, always choose a rate that is adequate for control of all of the problem weeds. Do not use a lower-than-labeled rate to try and save money, and do not use greater than the labeled rate, assuming that more is always better. The labeled rate must be applied for adequate control of all desired weeds while minimizing any risk of unnecessary injury to non-target plants.

3. Was the sprayer calibrated properly?

A question that we routinely get asked is, "How much herbicide should I put in my sprayer?" The first question to ask in response to that question is, "What is your application volume?" The sprayer application volume is the amount of herbicide plus carrier solution that will be applied through the sprayer over a specific area of land (usually represented in gallons/acre or GPA, generally representative of broadcast applications) or it can be

represented as the amount of herbicide plus carrier solution that is discharged from the sprayer in a specific amount of time (usually represented in gallons per minute or GPM, generally representative of spot treatment applications).

Many times, we have found that the sprayer application volume is unknown to the person asking the question. If the application volume is unknown, one cannot determine the appropriate amount of herbicide to add to the sprayer tank, especially for broadcast applications. Therefore, application equipment should be routinely calibrated to establish your application volume and to ensure that it is functioning properly. Unfortunately, calibration can often be overlooked when things get busy, but if your sprayer volume is unknown or different than you expect, then the herbicide will be applied at the wrong rate. Therefore, it is extremely important to learn how to properly calibrate your sprayer and check it at least once a season or every time a part on your sprayer is replaced or changed. Your local Extension office will have publications that can assist you further with sprayer calibration.

4. Was the proper adjuvant used?

Many herbicides recommend an adjuvant to be added to the spray mixture. You may be wondering, "What is an adjuvant and why do I have to add one more thing to the spray mix?" The addition of an adjuvant to your spray solution will help increase the absorption of the herbicide into the plant. Adjuvants do this by changing the way the herbicide adheres to the leaf surface. This helps the herbicide get through the waxy leaf surface of many target weeds. Typical adjuvants are crop oil or nonionic surfactants. Certain herbicide products already contain their own internal adjuvant system. However, if the addition of an adjuvant is recommended for a specific herbicide product, always remember that the product will not provide optimal control without one.

5. What about rainfall or irrigation?

Was there any rainfall or irrigation after the herbicide application? For preemergence herbicides to work properly, they need approximately 1/2 inch of rainfall or overhead irrigation within one week after application. On the other hand, any rainfall or irrigation soon after a postemergence herbicide application can cause decreased control, because the herbicide may be washed off the leaf surface. Be sure to pay attention to irrigation timings or to anticipate rainfall around the time you plan on making a postemergence herbicide application. Some postemergence herbicides only require one hour of drying time, while others may require six hours or more of drying time before it is safe to run irrigation or encounter rainfall.

6. Were the weeds under stress?

When weeds are under stress, especially drought stress, you will likely observe decreases in control. During times of stress, plants are just trying to survive and are not actively growing or normally absorbing most herbicides. While it is not always possible to have perfect conditions, expect to get less control when conditions are not favorable for plant growth. One potential way to improve herbicide performance under stress conditions is increasing adjuvant rates or switching to more aggressive adjuvant blends. While this may not improve weed control under all stress conditions, it is likely to improve absorption of herbicides in target weeds. As with any herbicide application, always consult both the herbicide and adjuvant product labels to make sure that you use appropriate rates for these specific situations.

7. What was the weed stage of growth at application?

In most cases, weeds are best controlled before they emerge or when they are young and actively growing. This is especially true when controlling annual weeds (weeds that complete their life in one growing season and reproduce by seed), like crabgrass or henbit. One question we often hear is, "How can I control these winter annual broadleaves, like henbit, when they are blooming in the spring?" Henbit and its close relative purple deadnettle are the purplish/pink blooming mint family weeds you may see in the yard in the spring. At this stage, henbit and other winter annual weeds are very difficult to control, and more than likely, it is too late to prevent the production of viable seed. These winter annual weed species would have been best controlled by a preemergence herbicide in the late summer or early fall or with a postemergence herbicide following their emergence in mid- to late fall.

However, perennial (weeds that survive the winter and regrow or continue to grow from the same root system for more than one year) weed species, like multiflora rose or dandelion, are best controlled with postemergence applications of a systemic herbicide just prior to or at flowering. Systemic herbicides translocate through the plant and do not just cause contact leaf burn. Therefore, you would not want to attempt to control a perennial weed with a preemergence herbicide, because most preemergence herbicides will not provide suitable long-term control of these perennial weeds.

The bottom-line: Any attempt to control weeds at the wrong growth stage can lead to undesirable results. Take time to determine the best growth stage for making herbicide applications, so that you get optimal control of your problem weeds. Always make sure your herbicide product of choice fits with the stage of growth of the weeds you are trying to control.

8. Did you read the entire label?

Labels can be difficult to read; however, reading the label is the most important thing you can do before applying any herbicide product. In fact, many of the problems outlined above can be prevented by a thorough review of the label prior to application.

Reading the label will ultimately increase your chances that each herbicide application you make will adequately control your target weed of interest.

Final Thoughts

If the items discussed above are addressed, many of the common issues associated with unsatisfactory herbicide performance can be avoided. Always remember that the label is the law. Pesticide use is governed by state and federal regulations, so be sure to read the entire label and follow all label directions. If you still have questions or concerns, contact your local Extension agent for help. With proper handling and use, herbicides are safe and effective tools for rapidly controlling many weeds.

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