

Controlling Weeds Injured by Tillage

Tillage can be a very effective form of weed control; however, care needs to be taken to do it properly. Weeds that have been injured by tillage equipment, but not completely controlled, can still be competitive with the crop and more difficult to control with herbicides (Figure 1). The best approach is to set tillage equipment to effectively control weeds. However, for those weeds that escape, action should be taken to help improve control with herbicides.

Translocation

Translocation is the process that moves herbicide from the point of application to growing points within the plant. Translocation is essential for good weed control with systemic herbicides, such as Roundup® brand agricultural herbicides. Mechanical damage from tillage, planting, or spray equipment, can compromise the plumbing system of a weed, the xylem and phloem. Translocation requires actively growing weeds with good plumbing. Tillage that does not kill the weeds, makes them appear shorter than they are, because much of the plant is horizontal below the soil surface.

Weed Height (inches)	Rate* (oz./acre)
< 6	22
6 to 12	32
> 12	44

* for carrier volumes between 16 - 40 gallons per acre (GPA).

Table 1. Recommended rates of Roundup PowerMAX® herbicide for various weed heights (carrier volumes between 16 to 20 GPA can help maximize weed control).

Re-Treating

When re-treating, allowing time for weeds to recover and using the proper water volume can help achieve good weed control. The right rate of Roundup brand agricultural herbicides should be used, considering that weeds are older, taller, and will probably be more difficult to control (Table 1). When evaluating plant height, include the length of the stem that is below the soil surface due to injury from tillage. Adding non-ionic surfactant to Roundup PowerMAX® at 1 to 2 quarts per 100 gallons spray solution can help improve control. Always use ammonium sulfate (AMS) at 8.5 to 17 pounds per 100 gallons spray solution to help improve control. Using the proper mixing order can help improve efficacy and compatibility (Table 2). Agitation should occur with each step. Weeds should be actively growing for good control.

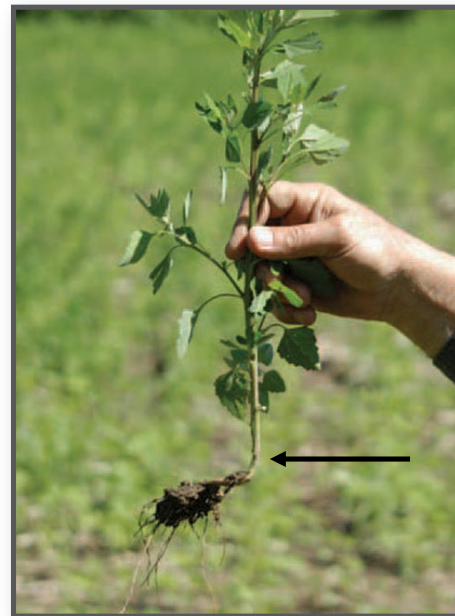


Figure 1. Example of a common lambsquarters plant injured by tillage but not controlled. The right angle between lower stem/root and above ground stem is characteristic of tillage injury.

Table 2. Herbicide Mixing Order

1. Fill tank 2/3 with water .
2. Add AMS at 8.5 to 17 pounds per 100 gallons of spray solution. Allow AMS to fully dissolve to help tie up hard water ions.
3. Dry formulations, suspensions, wettable powders, or flowables.
4. Drift reduction agent.
5. Water soluble formulations.
6. Roundup® brand agricultural herbicides.
7. If using Roundup PowerMAX®, non-ionic surfactant can be added.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Technology Development by Monsanto and Design(SM) is a servicemark of Monsanto Technology LLC. Roundup® and Roundup PowerMAX® are registered trademarks of Monsanto Technology LLC. ©2010 Monsanto Company. 05252010TED

