

Maximizing the Effectiveness of Glyphosate in the Home Lawn and/or Garden

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Roundup, Killzall, Pronto Weed and Grass Killer are all glyphosate herbicides used to kill unwanted plants. Kansas State University horticulture instructor, Cynthia Domenghini said the efficacy or effectiveness of this herbicide depends on the quality of water it's mixed with.

Water hardness is a measure of how much salt is in the water, whereas harder water indicates higher salt content. Positively charged calcium and magnesium salts are particularly problematic because they can bind with the negatively charged glyphosate molecules. This inhibits plants from absorbing the glyphosate.

Ammonium sulfate is negatively charged and can bind to hard water ions if added to the spray tank before the glyphosate. This allows the glyphosate to work as intended and may even increase efficacy of weed control as the herbicide may be absorbed more readily by weeds.

Adding ammonium sulfate to soft water is not helpful. Domenghini recommends testing water to determine the level of hardness. If your water is above 120 parts-per-million (ppm), it is at a level that could benefit from including ammonium sulfate in glyphosate mixes. In general, add 8.5 pounds of ammonium sulfate per 100 gallons of water (1.4 ounces per gallon; 4 tablespoons per gallon).

For more information, please contact the local K-State Research and Extension Office.
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