

Notes on Herbicides – Recommended Formulas of Glyphosate

The treatment quick guides that are available from NCCISMA refer to recommended herbicides according to their active ingredient. **The label is the law.** These instructions do not replace the need to read and follow the label of the herbicide product that you are using. **IT IS ILLEGAL TO USE AN HERBICIDE IN A MANNER NOT SPECIFICALLY PERMITTED ON THE LABEL.**

For instance, concentrated glyphosate is recommended for treating Japanese Knotweed and Phragmites. Where these infestations are near or in standing water, you must use an aquatic formulation of glyphosate. Depending on your treatment method and target species, recommended chemical solution could range from undiluted to heavily diluted (e.g., 2% chemical to 98% water).

Please be aware that when you go to a retail store to purchase these products, they will not be available under the chemical name (e.g. Glyphosate), but are sold from a number of suppliers under a variety of brand names. It is very important that you read and understand the ingredients of the products that you are shopping for to ensure that you are purchasing a product that will be effective for the target plants and have minimal negative impacts to your property or person.

On the product label, the first thing to look for is the ingredient list. Be cautious of active ingredients that may be listed in addition to those that we recommended. Many over the counter formulations contain active ingredients that NCCISMA would not recommend for the species that you are attempting to control. These may include chemicals known to move through the soil and affect plants that you do not want to kill, such as nearby trees. To follow the recommendations of NCCISMA, if our treatment instructions indicate to treat with a particular chemical, that means that that chemical should be the only active ingredient in the solution that you are using.

For instance, for treating Japanese knotweed with the injection method, we recommend undiluted glyphosate. This assumes that you will be using a formulation of glyphosate in the range of 40% to 55% concentrate of active ingredient (glyphosate). The following brand names are some examples of herbicides that contain only glyphosate as an active ingredient in the correct concentration range for these treatments.

- Round-up Super Concentrate (note that there are many varieties of round-up available retail – only the “Super Concentrate” will be useful for an undiluted glyphosate treatment) (widely available: e.g., Family Farm & Home, Tractor Supply, Meijer, & Home Depot)
- Compare-N-Save Concentrate Grass and Weed Killer (available at Tractor Supply)
- Ground Work Concentrate 50% Super Weed & Grass Killer (available at Tractor Supply)
- HDX Weed & Grass Killer Concentrate (available at Home Depot)

In addition to the concentrated formulations of glyphosate listed above, you could use a concentrated aquatic formulation of glyphosate whether or not you are working in an aquatic environment.

The difference between the aquatic and non-aquatic formulations of glyphosate is that the non-aquatic formulations contain surfactants. A surfactant is a chemical additive that enhances the activity of the herbicide, meaning it may help the herbicide to stick to the leaf or enhance leaf penetration. The surfactant is what makes most formulations of glyphosate dangerous to use near open water. If you are spraying over or near open water you need to use the aquatic formulations. Aquatic formulations of concentrated glyphosate are difficult to find, but some brand names include:

- Rodeo (found on Amazon.com and forestrysupply.com)
- Accord (found on Amazon.com and forestrysupply.com)
- Shore-Klear Emergent Herbicide (available at Harrietta Hills Trout Farm)
- AquaNeat Emergent Herbicide (available at Harrietta Hills Trout Farm)

NCCISMA does not endorse any particular products. These are examples of products that contain the active ingredient recommended by NCCISMA. If you already have a product and would like assistance determining if it is acceptable and effective to use on your target plant, contact Vicki Sawicki, NCCISMA Coordinator at (231) 429-5072.

Diluted Glyphosate is recommended for most applications *

If you are treating Japanese knotweed with the cut-stump method, NCCISMA recommends you use a 20% glyphosate. This can either be achieved by mixing concentrated glyphosate (discussed above) with water. To achieve a 20% solution of glyphosate you mix 1 part concentrated glyphosate with 4 parts water. If you are mixing a gallon of solution, this would be your formula.

1 gallon = 128 ounces

$128 \times .20$ (to calculate 20%) = 25.6 ounces of chemical

$128 \times .80$ (to calculate 80%) = 102.4 ounces of water

Foliar Treatment Method (to be used as a follow-up treatment in June following a cut stump or injection treatment that was done the previous fall): NCCISMA recommends you use a 2-5% solution of glyphosate by mixing concentrated glyphosate with water. This would be your formula if mixing a gallon of total solution:

1 gallon = 128 ounces

128×0.02 (2% solution) = 2.56 ounces of chemical

128×0.98 (98% water) = 125.4 ounces of water

*** For the injection method of treating Japanese knotweed, the concentrated glyphosate should not be diluted.**