



The Connecticut Agricultural Experiment Station

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Nonselective Tank-Mix Partners for Controlling Emerged Weeds at Spring Preemergence Treatment

Normally, Christmas tree growers tank mix a glyphosate product such as Roundup Original or its equivalent with a residual preemergence (PRE) treatment before bud-break to control emerged broadleaf weeds and grasses. Previous research has shown that 16 fluid ounces per acre of Roundup Original or equivalent can control most annual weeds up to 4-inch in height. Only certain biennial weeds such as glyphosate-sensitive horseweed and wild carrot, in rosette stage, require 32 fl oz per acre of glyphosate (3 lb.s. a.e. [acid equivalent]/gallon formulation). See Table 1 on the next page.

However, higher rates of glyphosate only provide temporary suppression of these emerged perennials. Complete kill of these weed species may require one or more follow-up directed/hooded spot applications during summer, using higher glyphosate rates or glyphosate tank-mixes with Goal or Stinger. Improved control of horseweed and wild carrot in the rosette stage can also be achieved through the addition of 2,4-D amine at 16 fl oz per acre plus glyphosate at 32 fl oz per acre to a PRE herbicide treatment.

Certain weed species such as Asiatic dayflower, common evening primrose, and smooth bedstraw are naturally tolerant to glyphosate. These perennials can be managed by tank-mixing 22 fl oz per acre of triclopyr

(Garlon 3A) to your preemergence herbicide treatment while trees are still dormant (before any bud swell). Triclopyr has no activity on grasses. If grassy weeds exist at PRE application, include Roundup Original or its equivalent.

Small Asiatic dayflower seedlings (1 to 2-inch) present at the time of spring PRE treatment can be controlled by adding 32 fl oz of glyphosate per acre to your residual PRE treatment. For PRE control of Asiatic dayflower, use Sureguard (flumioxazin) at 12 oz, Pennant Magnum (*S*-metolachlor) at 43 fl oz or Westar (Hexazinone + sulfometuron-methyl) at 5 ounces per acre before bud swell in newly transplanted trees. Trees established in the field for more than a year may safely be treated with Westar at 10 ounces per acre or a tank-mix of full labeled rates of Pennant Magnum and Sureguard.

Table 1. Comparable rates of different glyphosate formulations based on acid equivalent concentration.

Glyphosate Product	Concentration			Equivalent Rates of Product
	Percent (%)	Active Ingredient (a.i.)	Acid Equivalent (a.e.)	
Roundup Original	41	4 lbs/gal	3 lb/gal	32 fl oz*
Roundup Custom	53.8	5.4 lbs/gal	4 lb/gal	24 fl oz
Roundup Pro	41	4 lbs/gal	3 lb/gal	32 fl oz
Roundup Pro Concentrate	50.2	5 lbs/gal	3.7 lb/gal	26 fl oz
Roundup Weather Max	48.8	5.5 lbs/gal	4.5 lb/gal	21.3 oz

*Roundup Original at 32 fl oz is equivalent to 24 fl oz of Roundup Custom or 21.3 fl oz of Roundup WeatherMax.