

GRASS & WEED CONTROL FOR TREE & SHRUB SEEDLINGS



For Land's Sake

Iowa Department of Natural Resources
State Forest Nursery

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ARE GRASS AND WEEDS REALLY A PROBLEM?

Grass and weeds are a problem because they grow faster and are often taller than young seedlings. They compete with your seedlings for the limited moisture, nutrients, light, and space. Grasses and broadleaf weeds may kill your seedlings. At the very least, they keep seedlings from growing as quickly and vigorously as they would without competition.

In addition, a thick stand of grass or weeds next to your seedlings provides habitat for rabbits and rodents who can girdle or cut off your seedlings.

The only way to avoid these problems are to control the grass and weeds that cause them.

WHAT DOES CONTROLLING GRASS AND WEEDS MEAN?

Controlling grass and weeds means keeping them from growing in a 3-5' zone around your seedlings. This gives the seedlings space to start growing without competition.

On sites where rabbits or rodents are a problem, mow the area between rows in the fall to reduce populations that may girdle your seedlings in the winter.

The primary reason for the failure of tree plantings in Iowa, is the lack of control of the competition from grass and weeds.



Either tillage or chemical control of existing vegetation is recommended.



Controlling weeds can easily be accomplished with the proper start.

HOW DO I GET STARTED?

Begin grass and weed control before the seedlings are planted, preferably the fall before planting. To prepare for planting, remove all vegetation in strips or circles 3-5' wide. (The width will depend on the size of your seedlings, the size of competing weeds and the erosion potential of your site.) On sites with perennial grasses like brome, or fescue, eliminate the grass on the entire field.

Vegetation can be removed by cultivation (rototilling or plowing) in either spring or fall. Fall cultivation is best. On sites with sod or heavy trash, mechanical cultivation is required at least twice, with some time between cultivations.

When using herbicides to kill perennial grasses and weeds, spray the fall before planting. Annual weeds will die in the fall anyway. For maximum control mow the areas and allow grass and weeds to regrow to 3-4" before spraying. Roundup is an effective herbicide to use. Adding 2,4-D will improve control of perennial broadleaves including alfalfa.

Growing grass and weeds can also be removed before planting in the spring by using a post-emergent herbicide, but only grass and weeds that are already growing will be affected. Again, Roundup or Roundup and 2,4-D are good choices.

There should be no vegetation growing in the strips or circles at the time of planting. If there is, treat again just prior to planting.

WHAT DO I DO AFTER PLANTING?

Grass and weed control will be needed for the first 3-5 years after your seedlings have been planted. While control efforts can decrease as the seedlings become established, some control will be necessary until your plants are tall or dense enough to suppress the competition.

There are several ways to control weeds, including cultivating, mowing, mulching, and chemical control. Decide which method or methods will work best for you.

Cultivating - Mechanical or hand cultivation can effectively control grass and weeds, if you have the necessary equipment and labor. You will need to space seedlings to allow for cultivation equipment.

To avoid root damage with mechanical cultivation, don't cultivate closer than 6-12" to the seedlings or deeper than 3". A 4' strip or circle should be considered a minimum. Mechanical cultivation should be supplemented with hand cultivation or herbicide treatment to control weeds close to your seedlings. Cultivation will be required 3-5 times per growing season.

Mowing - Mowing is a poor alternative for controlling weeds. Although it controls competition for light and space, weeds still compete with your seedlings for moisture and nutrients. There is also the potential for mechanical damage to the seedling when trying to mow too close. Hitting seedling stems while mowing, provides a place for disease to start. Mow often enough to keep seedlings clearly visible.



Mulching controls weeds and water loss.

Mulching - Mulch can be used around seedlings to control weeds and reduce moisture loss. It can be difficult and expensive to obtain mulch and spread it on a large scale.

Many materials can be used as mulch, including dry sawdust, wood chips, and bark. Straw is not as good unless you can rake it away from the seedlings in the fall. Otherwise, it provides a home for rodents.

Remove any weeds before applying mulch. An organic mulch must be thick enough (3-4" minimum) to keep weeds from growing through it. Using an organic mulch like those mentioned above, a top dressing of nitrogen fertilizer may be needed to replace nitrogen used in decomposition.

Mulching can also be done using landscape fabrics instead of or in combination with organic mulches. These do a good job of controlling weeds and reducing water loss if applied correctly. Select a fabric that allows good water penetration and is 4 oz. or heavier so it will last several years. These can be applied in strips over rows or in squares around individual plants. Use at least a 3' strip or square. These fabrics will cost approximately 50 cents per square yard. They will need to be fastened down with staples at least 6" long. Make sure the edges are sealed down so the wind doesn't blow under them and dry the soil and eventually blow them off the trees.

If these fabrics are used alone, they must be black or weeds will grow underneath and force the fabric upward. Organic mulches may also be used on top of these fabrics to hold them down and help to control water loss.

HOW DO I HANDLE HERBICIDES?

Herbicides effectively control weeds when properly applied. They are available from most agricultural suppliers. You can use a variety of equipment to apply herbicides, from boom sprayers suitable for large areas of level land to backpack sprayers for smaller areas or irregular terrain. Specific mixing and application instructions are on the label.

Apply herbicides only when needed and handle them with extreme care. Follow label directions and heed all precautions. Pesticides are especially dangerous when improperly handled, applied, or disposed. They can injure humans, domestic animals, desirable plants, wildlife and fish, and they can contaminate water supplies.

Preventing Weed Growth - Prevention is easier than killing grass and weeds after they are growing. Preventative measures are safer and last longer.

Since you have already eradicated any existing vegetation by following the directions under "How Do I Get Started?", you are ready to plant your seedlings. Make sure the ground is well sealed around the seedlings, then spray the pre-emergent herbicides over them.

For pre-emergent control, a Simazine/Pendulum or Simazine/Surflan combination is very effective. Simazine and Princep are the same product supplied by different manufacturers.

When used together, Simazine should be applied at 2-4 lbs. of active ingredient per acre and Pendulum or Surflan



Make sure your equipment is properly calibrated for proper application.

at 2-4 lbs. of active ingredient per acre. The Simazine rate will vary by soil type (see label). Some species are more sensitive to herbicides than others, so always be sure the proper herbicides and rates are used for a particular species.

Killing Growing Grass and Weeds - If grass or weeds are growing after your seedlings have been planted (because pre-emergent application was delayed or adequate control was not achieved), post-emergents can be applied to regain control.

Goal can be used for post-emergent control on weeds shorter than 4" and grasses no larger than the 2-leaf stage. It can be applied over conifers (except during bud break when some damage might result) or around hardwoods and shrubs (take care not to spray seedlings). Goal may be substituted for Simazine in the pre-emergent application. Simazine, Surflan, or Pendulum provide no post-emergent control (Goal does). Apply Goal at 1 lb. of active ingredient per acre. A second application, probably in July, may be necessary.

NOTE: Shallow cultivation (less than 2") of Simazine/Surflan or Simazine/Pendulum WILL NOT significantly alter their effectiveness. Disturbance of any kind on areas treated with Goal WILL destroy its effectiveness.

For control of larger or problem broadleaf weeds such as Canada thistle, Transline or Stinger may be applied over the seedlings. Always check the label for the species and rates. Some of these species may display minor leaf burning, but they will grow out of it. Roundup may also be used around seedlings to kill both grass and broadleaves, but avoid contact with the seedlings (including drift). Protect them by covering them with a bucket, stovepipe, etc., while spraying. Use a 1-2% Roundup solution.

REMEMBER: Pre-emergent herbicides should be applied before your seedlings or the weeds start to grow! There should be no green growth in the 3-5' strips or circles when you plant your seedlings or spray pre-emergent herbicides.

Two general types of herbicides are effective in controlling grasses and broadleaf weeds.

(1) PRE-EMERGENT, soil-applied chemicals applied before weeds emerge to prevent weed growth, and

(2) POST-EMERGENT, chemicals applied to the foliage of established weeds to kill them.

RESCUE APPLICATIONS

HOW DO I RESCUE EXISTING PLANTINGS?

To kill grass while seedlings are actively growing, some herbicides can be sprayed over both hardwood and conifer seedlings without injury. Envoy, Vantage (a formulation of Poast) or Fusilade will kill many kinds of annual grasses and some perennial grasses. Envoy is the best choice for many perennial grasses like tall fescue and bluegrass. These are best utilized in late spring and early summer, preferably before the grass is 6" tall, but may be used on grass up to 12" tall.

Kerb will kill existing perennial grass such as brome. Kerb can be applied over deciduous trees, shrubs, and conifers at the rate of 2 lbs. active ingredient per acre in at least 25 gallons of water. To the Kerb solution, add the Simazine and/or Pendulum or Surflan. The Simazine (Princep) rate should be 2-4 lbs. of active ingredient per acre depending on soil type and the Pendulum/Surflan rate should be 2 lbs. of active ingredient per acre. This will give good weed control next season.

Kerb applications must be made in the fall, usually in October or November after the soil temperature is below 50 degrees.

Oust can also be applied over both deciduous trees and shrubs and conifers, but may be more hazardous to seedlings. Oust has both pre-emergent and post-emergent activity, so it will kill existing perennial grass and many broadleaves and also provide pre-emergent control for the season.

Apply either in the fall or spring when seedlings are dormant. Oust is an ultra low use chemical so use extreme caution when applying. Calibrate your sprayer so you know exactly how much you are applying or you may damage seedlings. Rates vary with soil types (see label) from .5-1.5 oz. per acre. Oust should not be applied on soils with a PH of more than 7 or poorly drained soils.



Even at this point its not too late to control weeds.

Following is a list of herbicide manufacturers. Mention of these trade names is for the convenience of the reader and does not imply any endorsement by the Iowa Department of Natural Resources.

REMEMBER: ALWAYS READ AND FOLLOW THE LABEL. Applicators must be certified to apply restricted pesticides.

HERBICIDE MANUFACTURERS

<u>Brand Name</u>	<u>Manufacturer</u>
Roundup	Monsanto
Surflan	Elanco
Princep	Ciba-Geigy
Goal & Kerb	Rohm and Haas
Vantage	BASF
Fusilade	ICI
Pendulum	American Cyanamid
Oust	Dupont
Simazine	Riverside/Terra Corp.
Envoy	Valent
Stinger	Dow
Transline	Dow

CAUTION: Never apply herbicides to frozen ground or standing water.

WEED CONTROL IS WORTH THE EFFORT!

Seedling growth and survival are significantly increased by controlling grass and weed competition. Grass and weed control may be the most important single factor in establishing successful tree and shrub plantings.

Remember, establishing forest or wildlife plantings will not be accomplished simply by planting your seedlings. If your seedlings are worth planting, they are worth taking care of.

For more information, contact the

STATE FOREST NURSERY at 800-865-2477

or your District Forester.



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WEED CONTROL IS WORTH THE EFFORT!



Proper care of seedlings
can result in products like these.
A mature walnut like this one sells for
as much as \$20,000.



Iowa DNR
State Forest Nursery
2404 S. Duff Aveune, Ames, Iowa 50010
1-800-865-2477
<http://www.state.ia.us/forestry>