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agronomy advice

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WEED CONTROL IN PASTURES WITHOUT CHEMICALS

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Due to cost, time, grazing restrictions, lack of selectivity or by personal choice, many people choose not to use chemical methods of weed control in pastures. Weed control without chemicals is a viable option. However, there are many factors to consider.

WHAT IS A WEED?

This is an easy question to answer in a monoculture such as corn or soybeans, but is more difficult in a pasture. Most agree that weeds are plants that possess some undesirable traits such as being prolific seed producers; the seeds shatter when or even before they fully ripen and they often have effective means of spreading. In grain crops, weeds often reduce yields and therefore profits. In pastures, the most undesirable traits a plant may have are that it is poisonous or not consumed by animals. Some examples are buttercups, thistles and woody species. Other species we consider as weeds in pastures are those that exhibit low productivity or are productive for only a short time during the summer. Some examples like dandelions and wild plantains are perennials and others are annual weeds like foxtail and ragweed. Whatever the weed problem, sound production practices are the key to controlling them without chemicals.

A CLEAN START

The time to begin your weed control strategy is in the establishment phase. If weeds are not controlled at the outset, they may choke out a new seeding or allow weeds to encroach into the established stand.

When seeding a new pasture, test the soil and apply needed fertilizers and lime to adjust the pH to the proper levels for your species. Start with a well-tilled seedbed. Pastures can also be established without tillage, but this requires special no-till drills and some type of sod suppression before seeding. Seeding rates are also important. Become familiar with the seeding rates for the species you are planting, then calibrate your seeder so you are sure you are planting the correct rate. Using rates that are too low will invite weed encroachment.

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When possible, select fields with a low weed population. Avoid fields severely infested with perennial weeds like Canada thistle. If perennial weeds exist, controlling them before seeding a new pasture is important.

One strategy is to till or mow every 14 to 21 days throughout the summer, then follow with a late summer seeding in early to mid August. This helps deplete the weeds carbohydrate reserves, weakening and eventually killing them. Late summer seeding means fewer annual weed problems as well. Do not use a companion crop or graze these seedings until the following spring.

Annual weeds may also threaten a new pasture seeding. A companion crop such as oats or barley will decrease annual weed levels and control soil erosion. Seed these crops at 1.5 bu/acre. A higher seeding rate may be too competitive for the underseeded species. Chopping these small grains at the boot stage rather than harvesting for grain is most desirable. Harvesting as silage or hay provides a higher quality forage and allows more time for the underseeded grass and legumes to establish. When harvesting for grain, consider an early maturing short-strawed variety that stands well to avoid lodging and smothering the pasture seeding. Pastures may also be seeded using perennial ryegrass as a companion crop as it establishes quickly. If used, add 2 lb/acre of a forage type of perennial ryegrass (not a turf grass variety) to the mixture. Even with a companion crop, annual weeds are likely to grow. In these instances, removing the weeds to avoid too much competition will be necessary. This may be accomplished by green chopping or even baling the material off the field. This should be done when the weeds are 10 to 12 inches tall.

WEED CONTROL IN ESTABLISHED PASTURES

Once pastures are established, it is important to keep weed from invading and reducing pasture condition.

Rotational grazing

Many pastures become severely infested with thistles and other problem weeds due to continuous grazing. Cattle will overgraze areas of young, succulent growth and undergrade more mature areas. Overgrazing results in an open sod that allows light to penetrate to weed seeds and seedlings. Under grazing can be harmful as well, as excessive growth will smother new shoots, inhibit tiller development and weaken the desirable species. This will create open spots that allow weed encroachment.

A properly managed rotational grazing system avoids these problems. Cattle are left in a paddock until the grass has been grazed to the proper height, then are moved to another paddock and so on. The original paddock is grazed again only when it has had sufficient time to recover. This helps maintain a healthy, vigorous pasture that can easily compete with weeds. The proper rest period for a paddock depends on the species and time of year. Rest periods of 15 to 20 days are common in early spring. In late summer, when growth has slowed, rest periods may be as long as 35 days. Maintaining proper fertility and pH is also critical in maintaining a healthy stand and decreasing weed encroachment.

Walk Your Pastures

Another key to weed control in established pastures is to walk your fields often. This is the best way to catch weed problems before they become serious. Weeds should be hoed, pulled, or cut before they set seed and spread.

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Know your Thistles

Thistles are the most common type of weed in pastures. They have either perennial or biennial life cycles. Canada thistle and sow thistle are perennials that have creeping roots that produce new plants and they usually occur in patches.

Biennial thistles in Wisconsin include bull, plumeless (mistakenly called Russian thistle by many), and musk (or nodding) thistle. Bull thistle seldom forms dense stands but musk and plumeless thistles are quite invasive and can render large areas unsuitable for grazing if not controlled. Biennial thistles form a rosette of leaves the year seeds germinate and must undergo winter to shift from vegetative to reproductive growth. Plants flower the following summer and die at the end of summer or with the first frost. Preventing seed production is the key to managing biennial thistles.

Mowing

Mowing is an option for weed control in pastures. Mowing annual weeds once will usually control them if the pasture is healthy and exhibits rapid regrowth. Serious annual weed problems are rare in pastures and are indicative of declining health of desirable species. These paddocks may be candidates for improvement or renovation.

Tillage

Destroying all these roots with tillage is nearly impossible. Repeated tillage of these areas for one growing season often eliminates the infestation arising from roots, but this is seldom a practical approach in pastures. Areas where thistles are controlled with repeated tillage must be watched carefully for new plants that start from seeds. These should be removed when they are small so that they do not form roots with buds.

Mowing perennial weeds like Canada thistle, milkweed and goldenrod requires a different approach. A single mowing will not control these weeds. Mowing on an interval that allows these plants to regrow to 8 to 12 inches between mowing will eventually kill these plants. Keep in mind that mowing this often will likely weaken desirable species. These areas may need to be improved by one of the methods listed below.

PASTURE IMPROVEMENT

If annual weeds are a serious problem, or weeds are encroaching due to thin stands, introducing new species or increasing density of current species, will help reduce these problems. Pasture improvement may be accomplished by the steps listed below:

Step one.

Mow or graze closely in late fall, before snowfall. This weakens the existing species, making them less competitive with the new seeding, and improves seed to soil contact when seeded next spring.

Step two.

Frost seed the following spring by spreading seed of desirable species on the soil surface. Do this after snow has melted, during the spring freeze/thaw cycles.

or

Interseed into the existing stand with a no-till drill as early in spring as possible.

or

Disk lightly and interseed into the existing stand with a grain drill as early in spring as possible. Using press wheels or otherwise packing the soil after planting will improve success.

Step three.

Graze these paddocks lightly until mid to late summer to allow the new plants to establish.

These techniques will be most successful when attempting to introduce new species into an open sod. They are much less effective on dense grass sods.

SUMMARY

Remember, these keys to success when managing pasture weeds without chemicals:

- Soil test and fertilize accordingly
- Select adapted species combinations
- Maintain proper pH

  Use appropriate seeding rates
- Control perennial weeds before seeding
- Practice rotational grazing
- Walk pastures to catch emerging weed problems
- Control developing weed problems by hand cutting or mowing

  Consider renovating pastures that are beginning to develop weed problems