

NEW DEVELOPMENTS IN PASTURE WEED CONTROL

William W. Witt

Department of Plant & Soil Sciences
University of Kentucky

Weeds in pastures continue to offer challenges to the producer for controlling these unwanted plants. The combination of forage grasses grown in pastures and the climate of Kentucky provides an environment that is conducive for having numerous weedy species. Most pastures have a combination of cool season (those that begin growth in fall and mature in spring or early summer) and warm season (those that begin growth in spring and mature in late summer or fall) weeds. Additionally, some weeds such as thistles severely restrict grazing while other weeds do not. The decision to apply a weed management strategy is often difficult because of the wide array of weedy species and because some weeds cause little forage reduction.

It is not economically practical to control all the weeds that occur in Kentucky's pastures. A pasture weed management plan should address control tactics for those weeds that inhibit grazing, reduce forage yield, are poisonous, or could 'take over' the pasture. Weeds that inhibit grazing possess characteristics that prevent the animal from feeding close to the plant; normally, these plants that contain spines or burs. Weeds in this group are musk (nodding) thistle, bull thistle, Canada thistle, and spiny amaranth (pigweed). All weeds have the potential to reduce pasture yield if they are present in great enough populations—this rarely occurs in pastures where animals graze. Poisonous plants include white snakeroot, wild cherry trees, poison hemlock, and many others. Those weeds that have the ability to 'take over' pastures include eastern red cedar, multiflora rose, and tall ironweed.

Another issue that frequently inhibits herbicide use is the presence of clovers in the pasture. Clovers are highly desirable component of pastures and producers want to maintain the clover stand as long as possible. Unfortunately, most herbicides used for broadleaf weed control in pastures will kill clovers. Because of this issue, producers must decide on a plan of action for weed management that addresses this issue. Weeds such as the thistles or tall ironweed are problematic enough to warrant herbicide treatment. In such pastures, the best approach is to control the weeds and then reseed to clovers.

Herbicides for pastures

The table below contains a list of products available for pastures in Kentucky. It is important to remember that some products are not registered for use in pastures, such as some ester formulations of 2,4-D. Attention to the label before purchasing the product is needed.

Table 1. Herbicide products registered for use in Kentucky. Information below describes those registered for sites related to cattle and products not registered for sites related to cattle.			
Herbicide	Pastures	Hayfields	Pasture Fencerow
2,4-D ¹	Yes	Yes	Yes
Banvel	Yes	Yes	Yes
Clarity	Yes	Yes	Yes
Overdrive	Yes	Yes	Yes
Weedmaster	Yes	Yes	Yes
PastureGard	Yes	Yes	Yes
Redeem R&P	Yes	Yes	Yes
Remedy	Yes	Yes	Yes
Crossbow	Yes	Yes	Yes
Milestone	Yes	Yes	Yes
ForeFront R&P	Yes	Yes	Yes
Remedy RTU	Yes	Yes	Yes
Pathfinder II	Yes	Yes	Yes
Cimarron	Yes	Yes	Yes
Cimarron Max	Yes	Yes	Yes
Roundup WeatherMax ²	Yes	Yes	Yes
Grazon R&P	No	No	No
Surmount	No	No	No
Tordon RTU	No	No	No
2,4-D ester (some products)	No	No	No

¹Products containing only 2,4-D vary greatly as to what sites are on the labels. Many 2,4-D ester products are not registered for pastures while some are. Refer the label on the product for specific information regarding use in pastures.

²Roundup WeatherMax is one of many glyphosate containing products. Refer to the label on the product for specific information regarding use in pastures.

Herbicide active ingredients

Many products used for pasture weed control contain more than one active ingredient. Table 2 contains a list of products for pasture weed control and for control of unwanted vegetation around a farm site. Product names for 2,4-D are too numerous to list in this table; refer to your local pesticide dealer for 2,4-D products available in your area.

Table 2. Herbicide products and their active ingredients.		
Product	Active Ingredient	LBS AE/Gal or % AI
2,4-D	2,4-D	3.8
Clarity, Banvel	dicamba	4
Overdrive	dicamba + diflufenzopyr	3.75 + 1.5
Weedmaster, Banvel+2,4-D	2,4-D + dicamba	2.87 + 1.0
Redeem R&P	triclopyr amine + clopyralid	2.25 + 0.75
Crossbow	2,4-D ester + triclopyr ester	2.0 + 1.0
PastureGard	triclopyr amine + fluoxypyr	1.5 + 0.5
Surmount	picloram + fluroxypyr	0.67 + 0.67
Stinger, Transline	clopyralid	3
Remedy	triclopyr ester	4
Remedy RTU	triclopyr ester	0.75
Pathfinder II	triclopyr ester	0.75
Milestone	aminopyralid	2
ForeFront R&P	aminopyralid + 2,4-D amine	0.33 + 2.66
Cimarron	metsulfuron-methyl	60% AI
Cimarron Max	metsulfuron-methyl +	60% AI
	2,4-D + dicamba	2.87 + 1.0 AE

Grazing and Haying Restrictions

Some herbicide products have restrictions on when cattle can be allowed to graze after application of the product. Also, the interval between product application and harvesting for hay is different for many products. Table 3 contains the number of days from time of application until grazing or haying is allowed. Generally, the most restrictive intervals are for lactating dairy cows. For some herbicidal products, the grazing or haying restriction depends on the amount of product applied.

Several products do not have a grazing restriction which means the animals can be in the pasture at the time of treatment. However, many herbicide users prefer to keep animals off the pasture until the herbicidal spray has dried.

Those products with a 0 day restriction have been approved for this use by the Environmental Protection Agency

Table 3. Grazing and haying restrictions for pasture herbicides registered in Kentucky.			
Herbicide	Beef, Non-lactating dairy	Lactating Dairy	Harvest for Hay
2,4-D amine	0	7 days	30 days
2,4-D ester	0	7	30 days
Banvel	0	<1 pt, 7 days	37 days
	0	1 pt to 1 qt, 21 days	51 days
	0	1 qt to 2 qt, 40 days	70 days
Clarity	0	<1 pt, 7 days	37 days
	0	1 pt to 1 qt, 21 days	51 days
	0	1 qt to 2 qt, 40 days	70 days
Overdrive	0	0	0
Weedmaster	0	7 days	37 days
PastureGard	0	Next growing season	14 days
Redeem R&P	0	Next growing season	14 days. Do not feed to lactating dairy animals
Remedy	< 2 qts, 0	< 2 qts, 14 days	< 2 qts, 7 days
	2-6 qts, 14 days	2-6 qts, next season	2-4 qts, 14 days
			> 4 qts or lactating dairy, next season
Crossbow	0	Next growing season	14 days
Milestone	0	0	0
ForeFront R&P	0	7	30 days
Remedy RTU	<2.5 gal, 0	< 2.5 gal, 14 days	< 2.5 gal, 7 days
	2.5 to 7.5 gal, 14 days	> 2.5 gal, next season	2.5 to 5 gal, 14 days
			> 5 gal or lactating dairy, next season
Pathfinder II	<2.5 gal, 0	< 2.5 gal, 14 days	< 2.5 gal, 7 days
	2.5 to 7.5 gal, 14 days	> 2.5 gal, next season	2.5 to 5 gal, 14 days
			> 5 gal or lactating dairy, next season
Cimarron	0	0	0
Cimarron Max	0	7 days	37 days
Roundup	< 2 qts, 0 days	< 2 qts, 0 days	
WeatherMax	> 2 qts, 8 weeks	> 2 qts, 8 weeks	

New and Relatively New Products

The introduction of new herbicides in any market is relatively rare in today's agriculture. The cost of developing and introducing a new pesticide exceeds \$100 million. As a result, any product submitted for registration to the Environmental Protection Agency must have the potential to be used on large acreages. Commonly used pasture herbicides were introduced many years ago: 2,4-D in 1946; Banvel in 1965; triclopyr (active in Remedy, Redeem, Crossbow, Garlon) in 1973.

Below are some of the more recently introduced herbicides. See Table 2 for the active ingredients in the products available for Kentucky pastures.

Overdrive. Good control of many herbaceous weeds. Applied at 4 to 8 oz/A with the higher rates for biennial and perennial weeds. See Table 3 for grazing and haying restrictions.

PastureGard. Good control of woody species such as blackberry, multiflora rose, locust, and osage orange. Rate is 3 to 8 pt/A depending on species; always add nonionic surfactant. High volume spot spray at 1 to 2 % mixture (1 to 2 gallons PastureGard per 100 gallons of water). See Table 3 for grazing and haying restrictions.

Milestone. Registered in 2005 and provides control of musk thistle, bull thistle, Canada thistle, tall ironweed and many other weeds encountered in Kentucky. It should be applied at 3 to 7 oz/A, depending on the weed to be controlled. See Table 3 for grazing and haying restrictions.

ForeFront R&P. Was registered in 2005 and will be available in Kentucky. It has activity on a large number of weeds including the biennial thistles, Canada thistle and tall ironweed. See Table 3 for grazing and haying instructions.