

## **RANGELAND, PASTURE AND NON-CROPLAND - ACACIA, BIRCH, CHERRY ETC.**

### General Information

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Spike 20P herbicide is a surface applied soil-active product for control of woody plants (trees, shrubs, and vines). Treatments become effective after sufficient rainfall has occurred to move the active ingredient in Spike 20P into the root zone. Herbicidal symptoms appear most rapidly when applied just before seasonal rainfall. Treated trees and shrubs (brush) exhibit leaf chlorosis and browning followed by defoliation. Woody plants may go through several defoliation cycles before death occurs. Time required to achieve control of woody vegetation may vary from one to several years. Increased application rates and additional time is required to achieve consistent woody plant control under the following conditions: (1) the treated area contains deep, medium-to-fine textured, or high organic matter soils; (2) the target species are deeprooted; or (3) the vegetation consists of species tolerant to Spike 20P.

For best brush control results, do not disturb intact plants by such practices as wood cutting, chaining, or burning for two years after application of Spike 20P.

Resprouting is more likely to occur if plants are disturbed before complete woody plant control occurs.

### General Use Precautions and Restrictions

Spike 20P is intended for control of unwanted woody vegetation such as trees, shrubs, and vines. Spike 20P will also control herbaceous broadleaf plants such as clover or lespedeza. Grasses in the area immediately adjacent to pellets may be temporarily damaged. Dormant season application is recommended to minimize herbicidal effects on grasses and other herbaceous plants. The herbicidal activity of Spike 20P in soil may prevent the growth of trees, shrubs, and other broadleaf vegetation for several years after treatment.

Do not apply Spike 20P to interior ditch banks (areas which slope toward the drainage). Do not apply to ditches used to transport irrigation water or potable

water.

Not for sale, distribution, or use in Nassau and Suffolk Counties in New York State

Use Restrictions in the State of Florida

In Broward, Collier, Dade, Hendry, Lee, Monroe, and Palm Beach Counties of Florida, Spike 20P may be applied only in accordance with supplemental labeling.

Maximum Application Rate for Grazing or Haying: If treated area is to be used for haying, do not apply more than 20 pounds per acre of Spike 20P. If treated area is to be used for haying, do not apply more than 10 pounds per acre of Spike 20P in areas receiving 20 inches or less average annual rainfall, or more than 20 pounds per acre of Spike 20P in areas receiving more than 20 inches average annual rainfall.

There are no grazing restrictions following application of Spike 20P at labeled rates.

Haying Restriction: Do not cut hay for livestock feed for one year after a Spike 20P treatment.

Effects on Herbaceous Vegetation: Spike 20P may injure or suppress certain herbaceous vegetation in the treated area. Therefore, do not apply where such injury cannot be tolerated. Injury to most herbaceous perennial plants is reduced if Spike 20P is applied when vegetation is dormant.

Do not apply Spike 20P more than once per year.

Safe use of Spike 20P requires the following guidelines to be carefully followed:

Treatment Setback:

Do not apply Spike 20P in the vicinity of desirable plants. Exposure of even a small part of a plant root system to Spike 20P may cause severe plant injury or death.

Note: Plant roots usually occupy an area much larger than the aerial portion of the plant. Treatment setback distance should be 1 to 2 times the height or width of adjacent non-target vegetation, whichever is greater. For example, if adjacent non-target vegetation is 25 feet tall, the treatment setback should be 25 to 50 feet. If there is a question about appropriate setback distance, contact an Arboriculturist (tree expert) to determine if the proposed treatment area is free of roots of

desirable vegetation.

#### Potential Product Movement:

Spike 20P or soil containing Spike 20P may be moved from treated areas by flowing water, wind, or mechanical means. Do not apply Spike in areas where overland flow of water might move Spike 20P or soil containing Spike 20P from the treated area.

Do not apply where wind erosion may cause movement of soil containing Spike 20P from the treated area unless the surface has been stabilized with a gravel mulch or some other means. Do not apply in areas where soil may be redistributed by mechanical means to non-treated areas.

#### Remedial Action After Accidental Application or Spill:

Take action to minimize the effects of an accidental application or spill immediately.

Once rainfall has moved Spike 20P into the plant root zone, the effect on woody plants is irreversible.

Damage from accidental application or spill may be prevented only if soil containing Spike 20P is carefully removed before rainfall has moved Spike 20P into the root zone. Apply a waterproof covering to the affected area until cleanup is accomplished. Carefully collect Spike 20P pellets and/or soil containing Spike 20P with appropriate equipment and dispose at an approved landfill site. If rainfall has occurred, remove surface soil in the affected area to the depth of Spike 20P penetration.

#### Frequency of Application and Maximum Use Rates:

##### Broadcast Applications (Aerial or Ground Equipment):

- The maximum use rate and frequency of application is 1 to 2 lb a.i./acre once every three years for vulnerable sites where soils are sandy and depth to water table is shallow. (Refer to Environmental Hazards section under "Use Restrictions for Ground Water Protection".)

- For all other areas, the maximum use rate and frequency of application is up to 4 lb a.i./acre once every three years and no more than two treatments totaling of 6 lb a.i./acre in any 6 year period.

Spot Treatments (Hand Application or Hand-held Equipment): May be applied at rates up to 6 lb a.i./acre when needed.

## Factors in Herbicidal Response

### Soil Texture, Soil Depth, and Organic Matter

Poor control or erratic results are likely to occur when Spike 20P is applied to soils containing more than 5% organic matter or more than 30% clay. Do not apply to "blackland" or other heavy clay soils which crack extensively upon drying. Other deep, medium, and fine-textured soils supporting deep-rooted woody plant species require increased application rates for consistent control. The susceptibility of woody plants occurring on shallow, coarse, or rocky soils with low organic matter is normally increased due to increased soil availability of Spike 20P and shallow rooting depth. Therefore, use application rates at the low end of the rate range in these situations.

### Woody Plant Size and Density

The height and density of woody vegetation is a reliable indicator of soil conditions. Woody vegetation is generally taller and more dense where soils are deeper and/or of medium to fine texture and where soil moisture conditions are more favorable. Higher rates in the rate range are required on such sites. On sites with coarse, shallow, or rocky conditions with less favorable soil moisture conditions, woody vegetation will be smaller and less dense. Lower rates in the rate range are required for control on such sites. Where a high level of woody plant control is required and application rates cannot be adjusted for changes in soils, plant size, or density, apply Spike 20P at a rate sufficient to control the tallest and most dense woody vegetation in the treatment area.

### Application Timing

Spike 20P may be applied anytime except when the soil is frozen or is saturated with moisture. For optimum results, applications should be made prior to the resumption of active seasonal growth in the spring or before expected seasonal

rainfall. In areas receiving greater than 25 inches of annual rainfall, late summer and fall applications may require a higher application rate in the indicated rate range to achieve consistent control.

Spike 20P is recommended for control of brush regrowth after dozing or shredding, provided the regrowth has reached an average height of five feet or more prior to application. Spike 20P works best when there is an abundance of active leaf area to stimulate water and herbicide uptake during the season following application. Taller regrowth will tend to provide faster and more consistent brush control.

Spike 20P may cause temporary herbicidal symptoms to appear on perennial grasses. Dormant season application is recommended to minimize herbicidal effects on desirable forage grasses.

#### Effect of Shallow Groundwater on Woody Plant Control:

- Do not apply Spike 20P to areas where the water table is predominately shallow (5 feet or less), such as marshy or sub irrigated areas, or areas immediately adjacent to streams or lakes which are periodically flooded. On such sites, where roots extend directly to a shallow water table, woody plants are minimally affected by applications of tebuthiuron and poor control will result.

#### Limitations, Restrictions, and Exceptions

##### RANGELAND, PASTURE AND NON-CROPLAND

##### Rangeland and Pasture Management Information

There are no label restrictions which require livestock grazing to be delayed following an application of Spike 20P. Spike 20P is a pelleted formulation and does not adhere to plants. Therefore, significant plant residues do not occur as a result of application. However, at the time of application forage species may be sparsely distributed and in a low state of vigor due to competition from woody plants. Under such circumstances, the density and vigor of forage species may be enhanced by deferment of grazing following application of Spike 20P.

##### Grazing Management

For optimum perennial forage grass response, desirable species should be present in the area to be treated at a minimum of 10% of normal plant density (density =

plants per unit area) compared to similar rangeland or pasture sites not dominated by woody plants. To encourage forage grass response, grazing should be deferred during the entire active growing season following application. Poor vegetative vigor or inadequate rainfall, may necessitate additional grazing deferment during periods of active forage growth. Light grazing of mature forage after seed maturity will not harm grass recovery and can aid in seed dispersal. Forage grass production usually increases as woody plant competition for water and nutrients is reduced. However, increased forage production is also dependent on adequate rainfall and a sound grazing management program.

Precaution: The density of cool season grass stands such as fescue and crested wheatgrass may be reduced after application of Spike 20P.

Factors which may contribute to the possibility of stand reduction include excessive application rates, areas of shallow or rocky soil, and low brush density.

Rangeland and Pasture Overseeding: Apply Spike 20P at recommended rates. Overseeding involving burning or chaining of treated brush should not be attempted for at least two growing seasons after application. Apply seed and fertilizer at recommended rates into ash as soon as possible after burning or just prior to chaining. Cool season grasses are normally seeded in early fall and warm season grasses in the spring after the expected frost-free date. Aerial seeding without burning or chaining may be attempted in the fall or spring following an application of Spike 20P, but natural seedbed conditions must be relied upon for seedling establishment. Consult local range management specialists for recommendations on locally adapted species, seeding time, and grazing management.

### Broadcast Treatments

Spike 20P must be applied with ground or aerial application equipment capable of accurate calibration and able to provide a uniform distribution of pellets on the soil surface. Use of equipment not capable of confining the spread of pellets to the target area may result in injury or death of vegetation outside the intended treatment area. Contact a Dow AgroSciences sales representative for recommendations on application equipment for different use situations.

Spike 20P may be applied by ground or air broadcast by/or under the supervision of U.S. Government Agencies.

## Broadcast Application Rates

Pasture and Rangeland: Do not apply more than 10 pounds per acre Spike 20P in areas receiving 20 inches or less average annual rainfall. Do not apply more than 20 pounds per acre in areas receiving 20 inches or more average annual rainfall.

Non-Cropland: Do not apply more than 20 pounds per acre of Spike 20P on non-cropland.

Note: Refer to General Information section for limitations on maximum use rates, frequency of application, and total application rates allowed during a given period of time. Refer to Environmental Hazards section under "Use Restrictions for Ground Water Protection" for other rate limitations on "vulnerable" sites.

Note: Use a higher dosage in indicated rate range on all sites.

### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

### Rates

[field\\_rates 0](#)

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### Timings

[Prior to the resumption of active seasonal growth in the spring or before expected seasonal rainfall.](#)