

# Tribenuron-methyl (Spartan 75 DF) Spot-Applications for Control of Some Perennial Weeds in Lowbush Blueberries

Atlantic Food and Horticulture Research Centre

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A new use has been developed for the use of tribenuron-methyl (Spartan 75 DF) in lowbush blueberries. In addition to broadcast applications for bunchberry control, Spartan 75 DF can also be used as a spot-application to control several important weeds that are not controlled by Velpar. These weeds are bracken fern (*Pteridium aquilinum*), yellow loosestrife (*Lysmachia terrestris*), common wild rose (*Rosa virginiana*) and speckled alder (*Alnus rugosa*). Field trials have consistently given greater than 90% control of these species with only minor injury to the crop. Hence, Spartan 75 DF provides a selective means of controlling these weeds that is safe on the crop that cannot be achieved with other postemergence herbicides registered in this crop like Roundup or 2,4-D/dicamba mixtures. The following use pattern is suggested:

**Apply tribenuron-methyl at 0.2 g active ingredient (or 0.25 g/L Spartan 75 DF) per liter of water with 0.2% Agral 90 as a directed spray using a handgun applicator for the control of yellow loosestrife, bracken fern, wild rose and speckled alder in lowbush blueberries. Applications should be made in mid-summer of prune- or sprout-year of the crop to fully expanded foliage of yellow loosestrife and bracken fern, but wild rose and alder which retain their foliage longer can also be controlled by early autumn applications. Apply the spray to thoroughly wet the foliage of the weeds. Some stunting of the crop and reduction in numbers of fruit buds may occur if the crop is sprayed directly. Many other weeds of lowbush blueberries are either resistant or inadequately controlled by this treatment.**

**Weed response to Spartan 75 DF.** Table 1 summarizes the control recorded the year after application of the above treatments. Control of yellow loosestrife and bracken fern exceeded 95%, and in other trials (data not shown here) control of bracken fern with Spartan 75 DF was equivalent to the herbicide Asulox which has been lost to the blueberry industry. The foliage of these two species senesces and deteriorates before the end of summer so treatments should be applied early for best control. Similarly control of wild rose and alder is excellent. Both species retain their foliage well into October and hence can also be treated in late summer and early fall. It was noted that control of these woody species was often better when new regrowth was sprayed in pruned blueberry fields than when older bushes at the margins of fields were sprayed. This suggests new woody growth may be more sensitive to the herbicide than older, mature growth. Other weed species were also treated in the course of these trials but response of these species ranged from variable to highly tolerant (Table 2). Experience with this herbicide treatment may show that other weeds can also be controlled.

In sensitive species, the herbicide is translocated to the above and below ground growing points which stop growing and turn dark and die. Die back from stem tips is common and foliage first turns chlorotic and then necrotic. Some of these symptoms may be noted on other species like red maple, trailing blackberry and others, but there is incomplete control in the following year. On the other hand, bracken

fern treated with Spartan 75 DF may not show severe injury after application, but like Asulox, few fronds sprout in the following year.

**Crop tolerance to Spartan 75 DF.** There is insufficient crop tolerance to allow broadcast applications in summer of rates of Spartan 75 DF that will provide control of the above weeds. However, spray contact with the crop can be minimized with spot applications and here the damage is minimal. When sprayed to run-off, 40 to 50% crop injury was sometimes recorded and this resulted in stunting and reduction in numbers of stems and fruit buds in the following year. However, at other sites damage was minimal from this application. The injury to blueberries growing amongst the weeds sprayed was much less and ranged most often from no injury symptoms to a maximum of 10 to 20%. Blueberry clones may vary in their tolerance to this herbicide, but overall there was little damage to blueberry from drift or incidental spray contacting the crop. This is in contrast to Roundup or 2,4-D/dicamba where even drift can seriously damage or kill the crop.

**Mixing and application of Spartan 75 DF.** All field trials used a rate of 0.2 g active ingredient of tribenuron methyl per liter of water (or 0.25 g/L Spartan 75 DF) or 2.5 g Spartan 75 DF per 10 liters of water. Most growers will not have weighing devices capable of weighing the small amount of herbicide required for a single 10 liter back pack applicator, but these small amounts can be measured approximately by volume, that is, a level 5 mL measuring spoon holds approximately 2.2 to 2.3 g Spartan 75 DF, or slightly less than that needed for 10 liters of water. Agral 90 should be added at 0.2% v/v or 20 ml pr 10 L water. To ensure that the herbicide granule dissolves, add the herbicide to a small amount of water in a jar and shake before adding it to the sprayer. It is advisable to use the herbicide solution soon after mixing as the active ingredient is known to degrade in water, especially in warm, low pH water. It is important to thoroughly cover the weed foliage with spray solution and that the leaves be fully-expanded at the time of application.

**Table 1. Average control of weeds in the year spot-applications of 0.25 g/L Spartan 75DF plus 0.2% Agral 90.**

Weed Species	Time of Application	Number of Trials	Average Control
Bracken Fern	late July	3	99%
Yellow loosestrife	late July	3	96%
Wild rose	late July	6	94%
	early August	6	94%
	early October	3	94%
Speckled alder	late July	3	95%
	early October	3	99%

**Table 2. Response of some other weed species to the Spartan spot application treatment.**

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<b>Variable response- may be controlled</b>	<b>Moderately to highly tolerant - poor control expected</b>
Black knapweed	Black bulrush
Willow spp.	Birch
Bunchberry	Conifer spp.
	Spreading dogbane
	Red maple
	Sweetfern
	Bayberry
	Canada holly
	Poplar

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