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## CROPS AND LIVESTOCK RESEARCH CENTRE

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### EFFECTS OF SULPHUR APPLICATION IN WILD BLUEBERRY FIELDS

The wild blueberry (*V. angustifolium* Ait.) is a stress tolerant plant well adapted to acidic, nutrient-poor environments. These plants grow in the wild on orthic humo-ferric podzols with pH levels of 4.0 - 5.0, which is considered the optimum growing range. Blueberry fields developed from abandoned farmland often have pH of greater than 5.0. At higher pH, grasses are more prevalent and difficult to control. This study was conducted to determine the effect of sulphur application on pH and grasses in wild blueberry fields in Prince Edward Island.

Four sites, with pH 5.5 - 6.1 and high population of grasses, were evaluated for three years. The experimental design was a strip-block with four replications. The treatments were no herbicide, Atrazine at 12 l product ha<sup>-1</sup> and Velpar at 2 kg product ha<sup>-1</sup>. Within each treatment, sulphur was applied at 0 and 1000 kg ha<sup>-1</sup>. Treatments were applied in early May of the sprout year at the beginning of the study. Samples were collected for soil pH and grass control early in September of the sprout year, the following crop year and the following sprout year. Grass control was estimated from the dry weight of grasses harvested from two 1 m<sup>2</sup> quadrants per plot.

Sulphur significantly reduced soil pH 0.3, 0.4 and 1.0 units for the three years, respectively (Table 1).

Dry weight of grasses was significantly reduced in year 3 by sulphur application (Table 2).

Atrazine and Velpar significantly reduced dry weight of grass in year 1 (Table 3). In year 2, no herbicide and Atrazine gave significantly better grass control than Velpar. There was significantly less grass in the no herbicide plots compared to the herbicide plots in year 3. There was no effect on dry weight of grass when Atrazine and Velpar was applied alone compared to being applied in combination with sulphur.

**The results indicate that in high pH soil, applications of sulphur can reduce soil pH to within optimum growing range and help to suppress grasses in wild blueberry fields.**

**K.R. Sanderson and J.A. Ivany**

**Table 1: Effect of sulphur on soil pH in wild blueberry test sites in Prince Edward Island (mean of four sites).**

Treatment	Rate	Year 1	Year 2	Year 3
No sulphur	0	5.8	5.6	5.7
Sulphur	@ 1000 kg ha <sup>-1</sup>	5.5	5.2	4.7
LSD (P=0.05)		0.1	0.1	0.2

**Table 2: Effect of sulphur on grass control in wild blueberry test sites in Prince Edward Island (mean of four sites).**

Treatment	Rate	----- Dry weight of grasses ( g m <sup>-1</sup> ) -----		
		Year 1	Year 2	Year 3
No sulphur	0	13.4	36.4	20
Sulphur	@ 1000 kg ha <sup>-1</sup>	16	31.5	16
LSD (P=0.05)		NS	NS	3.4

NS indicates means are not significantly different.

**Table 3: Effect of herbicide on grass control in wild blueberry test sites fields in Prince Edward Island (mean of four sites).**

Treatment	Rate of product ha <sup>-1</sup>	----- Dry weight of grasses ( g m <sup>-1</sup> ) -----		
		Year 1	Year 2	Year 3
No herbicide	0	32.6	21.8	12.5
Atrazine	12 l	6.4	31.2	20.9
Velpar	2 kg	5.1	48.9	24.5
LSD (P=0.05)		3.2	9.7	3.8

NS indicates means are not significantly different.