



## Nova Scotia

### Wild Blueberry Leaf Nutrient Ranges

Growers apply chemical fertilizer hoping to increase wild blueberry (*Vaccinium angustifolium* Ait.) growth and yield. Generally, leaf nutrient standards developed in Maine by Trevett (1972) are used by the North American wild blueberry industry. The Trevett standards outline minimum and maximum levels of leaf nutrients which should be present in a healthy plant. Blueberry growers in Prince Edward Island now have local and recent leaf nutrient standards developed by Sanderson *et al.* (2007).

To provide Nova Scotia (NS) wild blueberry growers with local and pertinent information, we analyzed data from a nutrient survey to validate leaf nutrient levels found in NS blueberry fields.

### New Nova Scotia leaf nutrient ranges

Data was collected from a large survey of commercial wild blueberry fields from leaf samples obtained from 75 fields in 1989 and 1990. The survey was repeated during 1997 and 1998 on 44 of the original 75 fields. Fields were sampled at the tip-dieback growth stage during the sprout year of the traditional two-year blueberry cycle. All fields were considered to be well developed with a good to excellent vine coverage, having healthy plants and of good yield. All fields were located in the Colchester, Cumberland, Halifax, and Pictou counties in Nova Scotia.

Leaf tissue was collected randomly taking the top 5 to 10 leaves from approximately 50 stems in each field. All samples were analyzed using Leco N and Mehlich III extractant and reported on a dry matter basis.

When compared to the Trevett leaf tissue standards (1972), leaf nutrient concentrations of most Nova Scotia fields were deficient in P, Cu, B, Zn, and Fe, whereas nearly half exhibited excess Mn (Table 1). Leaf nutrient concentration of N, K, Ca and Mg were largely within the Trevett range.

Data analysis indicates that all leaf tissue nutrients can be described by the mean  $\pm$  1 S.D. (67% of the total), except for P and Ca (65% of

**TABLE 1.** Percentage of wild blueberry fields deficient or in excess of Trevett (1972) standards

|    | Trevett Standards |          | NS status (1989–90 ; 1997–98) |             |          |
|----|-------------------|----------|-------------------------------|-------------|----------|
|    | Min               | Max      | Mean                          | % Deficient | % Excess |
| N  | 1.60%             | 2.00%    | 1.80%                         | 10          | 6        |
| P  | 0.13%             | 0.22%    | 0.13%                         | 42          | 0        |
| K  | 0.40%             | 0.90%    | 0.47%                         | 12          | 0        |
| Ca | 0.27%             | 0.52%    | 0.39%                         | 1           | 4        |
| Mg | 0.13%             | 0.25%    | 0.17%                         | 2           | 1        |
| Cu | 7 ppm             | 14 ppm   | 1.3 ppm                       | 98          | 0        |
| B  | 24 ppm            | 60 ppm   | 25 ppm                        | 48          | 1        |
| Zn | 25 ppm            | 50 ppm   | 19 ppm                        | 92          | 0        |
| Fe | 50 ppm            | 100 ppm  | 39 ppm                        | 87          | 0        |
| Mn | 750 ppm           | 1490 ppm | 1502 ppm                      | 2           | 48       |

the total). Values are similar to those reported by Lockhart and Langille (1962) for sprout (vegetative) fields in the Parrsboro area of Nova Scotia. It appears that the Trevett standards may not all apply to Nova Scotia blueberry fields.

We suggest a new set of leaf nutrient ranges for Nova Scotia (Table 2) based on the ranges obtained during this study. This new set of standards may better reflect the local conditions in Nova Scotia, which appear to vary considerably from those in Maine wild blueberry fields for which the Trevett standards were developed. All fields sampled were considered to be well developed with at least 90% vine cover.

**TABLE 2.** Proposed ranges for wild blueberry leaf nutrient ranges in Nova Scotia, Canada

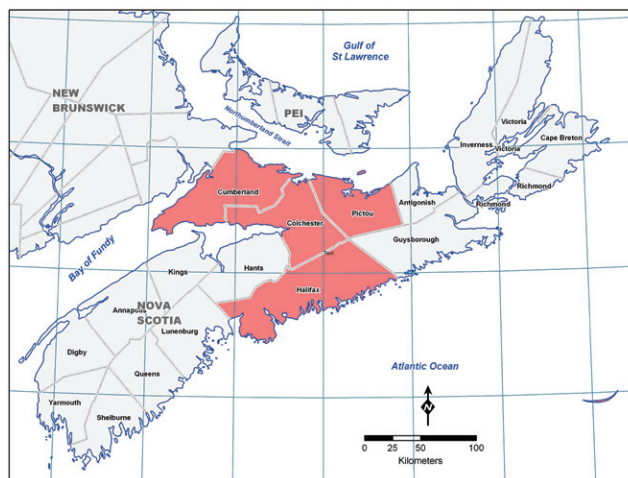
|    | Nova Scotia Leaf Nutrient Ranges |          |
|----|----------------------------------|----------|
|    | Min                              | Max      |
| N  | 1.60%                            | 2.00%    |
| P  | 0.11%                            | 0.14%    |
| K  | 0.41%                            | 0.52%    |
| Ca | 0.32%                            | 0.47%    |
| Mg | 0.15%                            | 0.19%    |
| Cu | 0.01 ppm                         | 2.5 ppm  |
| B  | 19 ppm                           | 31 ppm   |
| Zn | 16 ppm                           | 22 ppm   |
| Fe | 32 ppm                           | 46 ppm   |
| Mn | 1169 ppm                         | 1834 ppm |

## Summary

These new ranges provide growers with a snapshot of plant nutrient status in good producing fields in Nova Scotia. Growers now have the opportunity to compare leaf nutrient results from their individual fields with locally found nutrient ranges. For growers using fertilizer, individual nutrient levels can now be more accurately assessed. Additional savings may be realized by knowing that nutrient levels are already within these new ranges.

## Acknowledgements

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**FIGURE 1.** Tissue sampling regions included Cumberland, Colchester, Pictou and Halifax Counties

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