**Comparison of Trace Element Sources**

Sources of trace elements vary considerably in their form and content. A new product, Micromax (Sierra Chemical) is designed to be incorporated in soil mix. The developers claim that ratios of Fe to Cu and Cu to B are more important than absolute levels of each. Another new product, This, is designed for liquid application. These should be compared to existing trace element sources. In addition, the developers of Micromax recommend 4.72 kg/m³ (3.63Kg/cu. yd.) dolomite and 1.77 kg/m³ (1.36 kg/cu. yd) gypsum.

**Experimental Design**

Each treatment consists of 2 PSB 313's. Seedlots to be used are:

- Fe (1060) 92H03/B1/2048/0.91 89% - Double sow
- Fi (5020) 92015/B3/3088/1.14 85% - Double sow

**Treatment 1;** control.

Standard 3:1 peat-vermiculite with 3 kg/m³ (2.31 kg/cu.yd.) 12 mesh and finer dolomite lime. Fertilization and trace elements provided by applications of soluble Green Valley 20-20-20 as per attached schedule.

**Treatment 2;** 8:3 lime ratio.

Peat-vermiculite 3:1 with 2180 g dolomite/m⁴ (1680 g/cu.yd) and 820g gypsum/m³ (630g/cu.yd.) for a total of 3 kg/m³ (2.31 kg/cu.yd.) Fertilization and trace elements provided by applications of soluble Green Valley 20-20-20 as per attached schedule.

**Treatment 3;** Higher 8:3 lime ratio. (Micromax recommendation)

Peat-vermiculite 3:1 with 4720g dolomite/m⁴ (3630 g/cu.yd.) and 1770 g gypsum/m³ (1360 g/cu.yd.) totalling 6.5 kg/m³ (5.0 kg/cu.yd.). Fertilization and trace elements provided by applications of soluble Green Valley 20-20-20 as per attached schedule.

**Treatment 4;**

Peat-vermiculite with 3 kg/m³ dolomite line, 5.85 kg/m³ (4.5 kg/cu.yd) Osmocote 18-6-12 and 0.59 kg/m³ (0.45 kg/cu.yd.) Micromax.
Treatment 5:
Peat-vermiculite with 2180 g dolomite/m$^3$ (1680 g/cu.yd.) and 820 g gypsum/m$^3$ (630 g/cu.yd.) for a total of 3 kg/m$^3$ (2.31 kg/cu.yd.). Nutrients through 5.85 kg/m$^3$ Osmocote 18-6-12 and 0.59 kg/m$^3$ Micromax.

Treatment 6:
Peat-vermiculite with 4720 g dolomite/m$^3$ (3620 g/cu.yd.) and 1770 g gypsum/m$^3$ (1360 g/cu.yd.) totalling 6.5 kg/m$^3$ (5.0 kg/cu.yd.). Nutrients through 5.85 kg/m$^3$ Osmocote 18-6-12 and 0.59 kg/m$^3$ Micromax.

Treatment 7:
Peat-vermiculite with 3 kg/m$^3$ dolomite and 5.85 kg/m$^3$ (4.5 kg/cu.yd.) Osmocote 18-6-12. Trace elements to be applied weekly throughout season with "This" soluble trace elements at 2.5 l in 100 l water.

Treatment 8:
Peat-vermiculite with 3 kg/m$^3$ dolomite and 5.85 kg/m$^3$ (4.5 kg/cu.yd.) Osmocote 18-6-12. Trace elements to be incorporated in soil mix with Esmigran at 2.25 kg/m$^3$.

Treatment 9:
Peat-vermiculite with 3 kg/m$^3$ dolomite and 5.85 kg/m$^3$ (4.5 kg/cu.yd.) Osmocote 18-6-12. Trace elements to be incorporated in soil mix with FTE 503 at 0.13 kg/m$^3$ (0.1 kg/cu.yd.)

Comparison of Trace Element Sources

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Evaluation of Results
Micromax developers claim superior growth and darker green color. Their
recommendation of an 8:3 ratio of dolomite and gypsum for a total of 6.5 kg/m³ will be evaluated for symptoms of iron chlorosis. Treatments will be compared throughout the growing season for color differences using a Munsell color chart. At the end of the growing season, samples will be assessed for height, root collar diameter, top and root dry weights. The benefits of conducting tissue analysis will be assessed at that time.

G. Matthews