CONTAINER TRIAL:

RNX 7723

by

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INTRODUCTION - a preliminary assessment of the growth supplement, Sumagro.

OBJECTIVE - to assess the growth effects of Sumagro, as a soil and water supplement, on containerized seedlings.

TREATMENT - see WORKPLAN - appendix I
- TEST 1 - Soil Supplement.

<table>
<thead>
<tr>
<th>Osmocote Soil Mix</th>
<th>Sumagro Application Rate (g/cu.ft)</th>
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<tbody>
<tr>
<td></td>
<td>0</td>
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<tr>
<td>Standard &amp; Lime &amp; Frit</td>
<td>80</td>
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<tr>
<td>Standard (Peat &amp; Vermiculite)</td>
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<tr>
<td>Standard &amp; Sumagro Incorporated</td>
<td>-</td>
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<tr>
<td>Standard &amp; Sumagro Top dressing</td>
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TEST 2 - Water Supplement

<table>
<thead>
<tr>
<th>Osmocote Water Mix</th>
<th>Sumagro Application Rate (g/l)</th>
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<td>Standard &amp; Sumagro in Water</td>
<td>-</td>
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The following fertilizers and amounts were included in each cubic yard of treatment 80 soil mix:
- 3 lb. Agro dolomite lime (10 mesh)
- 4 lb. single superphosphate (granular)
- ½ lb. Frit 503

*Recommended application rates by manufacturer
Seedlings required:
- Treatments = 13
- Seedlings/treatments = 80 (1-#8 styroblock)
- Replications = 1
- Number of seedlots = 1
- Number of seedlings = 13 x 80 x 1 x 1 = 1,040 seedlings

SEEDLOTS - Hw
92C15/B3/2828/61M - Nitmat Lake
SZ - 101G
Germination - 86%
Total seeds/gram - 447
Viable seeds/gram - 384

All treatments were triple sown to provide a full count of seedlings per block.

METHOD - General - see WORKPLAN - appendix I
- Specific:
  1. fertilizer schedules - see appendix II
  2. diary - see appendix III
  3. treatments location diagram - see appendix IV

RESULTS - see DATA TABLE - appendix V
- see CLIMATE INFORMATION - appendix VI
- see PHOTOGRAPHIC RECORD - appendix VII
- Discussion: The data obtained from morphological assessment in appendix V shows:
  a) TEST 1 - seedlings achieved most top growth and least root development, and thus poorest top/root ratio, at the lowest application rate of Sumagro.
    - seedlings improved top/root ratio with increased Sumagro application rate, but experienced a decrease in top growth.
    - seedlings appeared to perform better overall when Sumagro was used in the soil mix, rather than as top dress.
  b) TEST 2 - seedlings underwent a drop in all factors when application rate increased from treatment #6 to #17.
    - seedlings recovered in top growth with rate increase from treatment #17 to #26.

CONCLUSIONS
The morphological data has shown a tendency for Sumagro to reduce all factors of seedling performance from the manufacturer's recommended rate and up. While this trial does become less apparent from usage as
a top dress to use as a soil or water supplement, it remains that such action is contrary to the claim that Sumagro promotes growth.

The presence of chunks in the Sumagro and its almost total insolubility were cause for complicating the trial procedure. A considerable build-up of Sumagro on the tops of treatments W8, W 17 and W 26 was evident.

RECOMMENDATIONS

The use of Agro dolomite lime and osmocote #118 was seen to invalidate the results of several container trials in 1977. However, when it is considered that only treatment S0 received the Agro lime and was still seen to perform well, this cannot be used as a reason for trial result. All treatments received osmocote #118 and thus preclude any treatment variation from its use.

The only thing which might be of concern when examining the end result of this trial is the late sowing date and short duration.
APPENDIX I

CRKPLAN

1. Fertilizer Type
   All treatments received nutrients from osmocote 14-14-14 in combination 
in the soil mix with osmocote #118:
   a) 14-14-14 - a 3 to 4 month controlled release fertilizer with a 
      1:1:1 ratio between nitrogen, phosphoric acid, and potash.
   b) 118 - a 24 month controlled release fertilizer which supplies 10% 
      of its available nutrients in the first 6 months and the rest over 
      the following 18 months.

2. Fertilizer Amount
   An application rate of 6lb/yd$^3$ of 14-14-14 plus 6lb/yd$^3$ of 118 was 
   used for all treatments.

3. Sowing Date
   All treatments were hand sown on July 14, 1977.

4. Sowing and Handling
   The individual treatment soil mixes were prepared and loaded into the 
   styrobloks by hand. Dowelling, sowing, and gritting were also done 
   by hand.

5. Measurement
   A complete morphological assessment of all seedlings in all treatments 
   at the termination of the test.