Table 15. Evaluation of banding phosphorous and manganese fertilizer, and foliar Mn and P applications for improving productivity of onions on muck soils – small plot field trials, 2010: Economic analysis for **Mortellaro in Elba muck (low pH, high %OM, low P, high Mn)**.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** |  | **Soil Applied Fertilizers (per acre)** | | | | **Foliar Applied Fertilizers (per acre)** | | **TOTAL COST**  **(per acre)** |
| **Nitrogen** | **Phosphorous** | **Potassium** | **Manganese** | **Manganese** | **Phosphorous** |
| ***Material:*** | Urea (46-0-0) | MAP (11-52-0) | Potash (0-0-62) | Manganese sulfate, 28%, dry | Manganese sulfate + manganese chloride, 33%\*, liquid | 12-48-8 + micros, dry |
| ***Price\*\*:*** | **$600/ton** | **$675/ton** | **$685/ton** | **$0.60/lb** | **$60/gal** | **$1.80/lb** |
| **Broadcast NP** | ***Rate:*** | N: 100 lb | P: 150 lb | K: 50 lb | 0 lb | 0 lb | 0 lb | **$169.43** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb  = 150 lb P; 32 lb N | 81 lb | 0 lb | 0 lb | 0 lb |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$0.00** | **$0.00** | **$0.00** |
| **Broadcast NP + Foliar Mn** | ***Rate:*** | N: 100 lb | P: 150 lb | K: 50 lb | Mn: 0 lb | Mn: 2 lb, 2x | P: 0 lb | **$218.75** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb  = 150 lb P; 32 lb N | 81 lb | 0 lb | 0.41 gal per app  0.82 gal total | 0 lb |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$0.00** | **$49.32** | **$0.00** |
| **Broadcast NP + Foliar P** | ***Rate:*** | N: 100 lb | P: 150 lb | K: 50 lb | Mn: 0 lb | Mn: 0 lb | P: 2 lb, 3x | **$191.93** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb  = 150 lb P; 32 lb N | 81 lb | 0 lb | 0 lb | 4.2 lb per app  12.5 lb total |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$0.00** | **$0.00** | **$22.50** |
| **Band P+Mn (broadcast NPK)** | ***Rate:*** | N: 100 lb | P: 150 lb\*\*\* | K: 50 lb | Mn: 4 lb | Mn: 0 lb | P: 0 lb | **$178.01** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb\*\*\*  = 150 lb P; 32 lb N | 81 lb | 14.3 lb | 0 lb | 0 lb |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$8.58** | **$0.00** | **$0.00** |
| **Band P+Mn + Foliar Mn**  **(broadcast NPK)** | ***Rate:*** | N: 100 lb | P: 150 lb\*\*\* | K: 50 lb | Mn: 4 lb | Mn: 2 lb, 2x | P: 0 lb | **$227.33** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb\*\*\*  = 150 lb P; 32 lb N | 81 lb | 14.3 lb | 0.41 gal per app  0.82 gal total | 0 lb |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$8.58** | **$49.32** | **$0.00** |
| **Band P+Mn + Foliar Mn+P**  **(broadcast NPK)** | ***Rate:*** | N: 100 lb | P: 150 lb\*\*\* | K: 50 lb | Mn: 4 lb | Mn: 2 lb, 2x | P: 2 lb, 3x | **$249.83** |
| ***Amount product:*** | 148 lb  = 68 lb N | 288 lb\*\*\*  = 150 lb P; 32 lb N | 81 lb | 14.3 lb | 0.41 gal per app  0.82 gal total | 4.2 lb per app  12.5 lb total |
| ***Cost:*** | **$44.34** | **$97.35** | **$27.74** | **$8.58** | **$49.32** | **$22.50** |

\*4.125 lb Mn per gal. \*\*Price quotes provided by Helena Chemical and Crop Protection Services: fertilizer prices are subject to change. \*\*\*split: band 100 lbs (=192 lb MAP with 21 lb N) + broadcast 50 lbs (=86 lb MAP with 9.5 lbs N)