Table 14. Evaluation of banding phosphorous (P) and manganese (Mn) fertilizer, and foliar Mn and P applications for improving productivity of onions on muck soils – small plot field trials, 2010: Economic analysis for **Star in Webster muck (high pH, high %OM, high P, medium 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 N** | ***Rate:*** | N: 100 lb | P: 0 lb | K: 0 lb | 0 lb | 0 lb | 0 lb | **$65.10** |
| ***Amount product:*** | 217 lb  = 100 lb N | 0 lb | 0 lb | 0 lb | 0 lb | 0 lb |
| ***Cost:*** | **$65.10** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$0.00** |
| **Broadcast N**  **+ Foliar Mn** | ***Rate:*** | N: 100 lb | P: 0 lb | K: 0 lb | Mn: 0 lb | Mn: 2 lb, 2x | P: 0 lb | **$114.42** |
| ***Amount product:*** | 217 lb  = 100 lb N | 0 lb | 0 lb | 0 lb | 0.41 gal per app  0.82 gal total | 0 lb |
| ***Cost:*** | **$65.10** | **$0.00** | **$0.00** | **$0.00** | **$49.32** | **$0.00** |
| **Broadcast N + Foliar P** | ***Rate:*** | N: 100 lb | P: 0 lb | K: 0 lb | Mn: 0 lb | Mn: 0 lb | P: 2 lb, 3x | **$87.60** |
| ***Amount product:*** | 217 lb  = 100 lb N | 0 lb | 0 lb | 0 lb | 0 lb | 4.2 lb per app  12.5 lb total |
| ***Cost:*** | **$65.10** | **$0.00** | **$0.00** | **$0.00** | **$0.00** | **$22.50** |
| **Band P+Mn (broadcast N)** | ***Rate:*** | N: 100 lb | P: 50 lb | K: 0 lb | Mn: 4 lb | Mn: 0 lb | P: 0 lb | **$99.65** |
| ***Amount product:*** | 195.6 lb  = 90 lb N | 96.2 lb  = 50 lb P; 11 lb N | 0 lb | 14.3 lb | 0 lb | 0 lb |
| ***Cost:*** | **$58.60** | **$32.47** | **$0.00** | **$8.58** | **$0.00** | **$0.00** |
| **Band P+Mn + Foliar Mn**  **(broadcast N)** | ***Rate:*** | N: 100 lb | P: 50 lb | K: 0 lb | Mn: 4 lb | Mn: 2 lb, 2x | P: 0 lb | **$148.97** |
| ***Amount product:*** | 195.6 lb  = 90 lb N | 96.2 lb  = 50 lb P; 11 lb N | 0 lb | 14.3 lb | 0.41 gal per app  0.82 gal total | 0 lb |
| ***Cost:*** | **$58.60** | **$32.47** | **$0.00** | **$8.58** | **$49.32** | **$0.00** |
| **Band P+Mn + Foliar Mn+P**  **(broadcast N)** | ***Rate:*** | N: 100 lb | P: 50 lb | K: 0 lb | Mn: 4 lb | Mn: 2 lb, 2x | P: 2 lb, 3x | **$171.47** |
| ***Amount product:*** | 195.6 lb  = 90 lb N | 96.2 lb  = 50 lb P; 11 lb N | 0 lb | 14.3 lb | 0.41 gal per app  0.82 gal total | 4.2 lb per app  12.5 lb total |
| ***Cost:*** | **$58.60** | **$32.47** | **$0.00** | **$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.