



**North Carolina Department of Agriculture R&D**

**Location: Jones County, North Carolina**

**Researcher: Dr. Bob Edwards**

**Year: 1998**

**Purpose:** Investigate the effectiveness of the acid forming sulfur/manganese granular fertilizer, Agri-Man (product trademark of Agri-Business Technologies, Albany GA), in correcting manganese deficiencies in Eastern North Carolina.

**Background Information:** Manganese deficiency is a common occurrence in Soybean crops throughout North America. Manganese deficiencies are most prevalent where soil Manganese levels are inherently low, where overliming has taken place, or where soil pH increases over 6.2 when manganese changes into a chemical state that is unavailable for plant uptake.

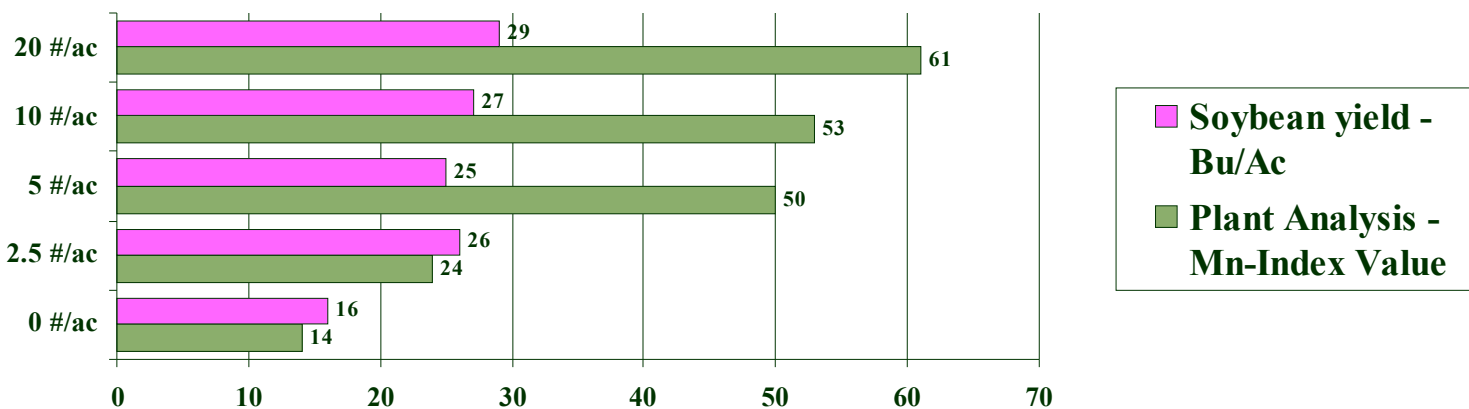
For maximum efficiency of granular Manganese fertilizers, they should be either used in conjunction with acid forming fertilizers, or an ideal acid forming product like Agri-Man can be used to provide available Manganese throughout the entire growing season.

Agri-Man Manganese is a strong acid forming fertilizer. The sulfur in the Agri-Man pastille breaks down, and through a conversion process aided by thiobacillus bacteria, produces sulfuric acid. The sulfuric acid in turn acidifies the finely ground manganese oxide particles through the course of the growing season, converting the particles into readily available manganese sulfate. The acidification process also makes other tightly bound nutrients more plant available in a zone around the pastille.

### **RESEARCH TRIAL**

**CROP:** Soybeans

**SOIL pH:** 6.8 - 7.2



**2.5 # PER ACRE OF ACTUAL MANGANESE FROM AGRI-MAN GRANULAR MANGANESE INCREASED SOYBEAN YIELD BY 62% AND INCREASE PLANT MANGANESE LEVELS BY 63%!**