

Successes And Failures In Foliar Applications To Correct Zinc Deficiency

J.R. Mauney

INTRODUCTION

In 1987 foliar and soil applications of zinc sulphate and zinc chelate failed to increase the yield of cotton that had a deficiency of zinc in leaf tissues. That was because none of the zinc amendments changed the zinc concentration detected in the leaves.

In 1988 additional treatments were tried to correct the zinc deficiency in the same field. In addition to the soil and foliar applications of sulphate and chelate, the effects of enhancement by ammonium sulphate was tested. Ammonium sulphate is presently listed on the label of several herbicides to enhance the effectiveness of the compounds.

RESULTS

The yield and zinc concentration in leaf tissues of the test are shown in Table 1. The zinc concentration improved when ammonium sulphate was included in the foliar spray. Unfortunately, an attack of beet armyworms fed selectively on the plots (see Akey this report). Therefore the yield for the test does not reflect any improvement due to the increase in zinc concentration.

Table 1. Effect of applied zinc on 1988 yield at
Maricopa, AZ

<u>Treatment</u>	<u>Seedcotton Yield (lb/ac)</u>	<u>Tissue Zn (ppm)</u>
Control	4554	25
Soil Zn Sulphate	4409	20
Soil Zn Chelate	4026	40
Foliar Zn Chelate	4514*	36
Foliar Zn Chelate with Amm. Sulphate	4171*	30
Foliar Zn Sulphate with Amm. Sulphate	4198*	45
Soil Amm. Phosphate	4448	25
Foliar Complete Nutrient	4910	25

*Severe damage by beet armyworms.