direct B/Al interaction in a medium as complex as soil. Therefore, we decided to do some hydroponic or water experiments with a defined medium in order to prove a direct B/Al interaction.

Hydroponic Studies

Hydroponic experiments were conducted with both alfalfa and squash. Squash proved to be more vigorous and fast-growing under our hydroponic conditions. An Al concentration series was evaluated to find a concentration that would limit root growth. Then a B concentration series was used to find the optimum B concentration for root growth. Thereafter, a toxic Al concentration was used with a series of B concentrations ranging from deficient to beyond the normal levels.

When deficient or normal levels of B were used, Al caused severe root growth inhibition. At high levels of B, root growth was maintained even in the presence of Al (**Figure 3**).

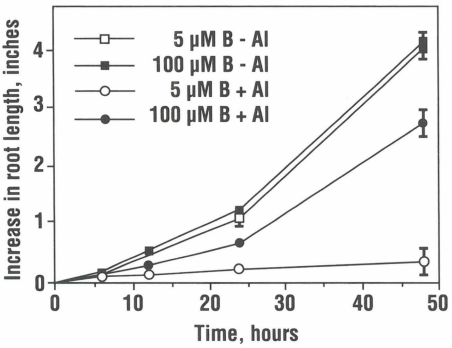

Figure 3. High concentrations of B in the growth medium in the presence of high concentations of Al significantly increased the growth of squash roots. Values are the means of 12 plants.

Conclusions

These experiments show that higher than normal B concentrations protected root growth in situations where high Al would normally be inhibitory. Like most research, these results raise a new question: Is the B requirement for normal plant growth and development higher under toxic Al conditions?

A word of caution–B is a micronutrient with a very narrow window for optimum plant growth and development. Care must be taken to increase the B levels, but not to the degree of toxicity. In addition, B does not replace lime in terms of raising soil pH or providing essential calcium (Ca). ■

1994 Meeting Dates Announced

GROWERS, agricultural supply industry personnel, researchers and Extension workers in the U.S. and Canada will want to take note of announced meeting dates for two conferences planned for March, 1994.

The **Great Plains Soil Fertility Conference is slated for March 8-9, 1994**, at the Stouffer Concourse Hotel, 3801 Quebec Street, Denver, Colorado. The program of this biennial event includes reports and discussion of current research and educational programs in soil fertility and crop production in the Great Plains states and Prairie provinces of the U.S. and Canada. Provinces and states included in the Conference are Alberta, Saskatchewan, Manitoba, Montana, North Dakota, Wyoming, South Dakota, Colorado, Nebraska, Kansas, Oklahoma, New Mexico and Texas.

A second meeting, the **1994 Intensive Wheat Management Conference, is planned for March 10-11** in Denver, also at the Stouffer Concourse Hotel. This Conference, the fifth in a series covering the U.S. and Canada, will focus on improved wheat management for more efficient production, higher yields, and higher profitability. The program will highlight technology transfer and implementation of best management practices. Research reports will also be included.

Registration materials and program specifics will be available for both meetings in the Fall of 1993. For more information contact the Potash & Phosphate Institute, 2805 Claflin Road, Suite 200, Manhattan, KS 66502, phone 913-776-0273.