

Table 1. Effect of foliar treatments on seedcotton yield, boll weight and boll number.

Treatment	Boll weight, grams	Boll number, per 3 ft. row	Yield, lb/A	Yield incr., % of check
Check	4.50b	31.8c	1,682c	—
KNO ₃	4.73a	32.9bc	1,736b	3.2
PGR-IV	4.80a	33.9ab	1,777b	5.6
PGR-IV + KNO ₃	4.75a	34.9a	1,910a	13.6

Values within a column followed by the same letter are not significantly different ($p=0.05$).

and KNO₃ which increased yield by 228 lb/A (13.6 percent).

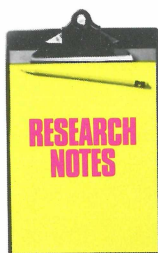
The increase in yield from the KNO₃ spray was consistent with our previous reports although not as large as usually experienced. The PGR-IV yield increase was also slightly less than previously reported. The 13.6 percent increase from the combined treatment was larger than the additive increase of the two individual treatments. This was probably because the PGR-IV treated plants retained more fruit,

and the additional K was needed to supply the nutrition of these added bolls.

A similar study conducted in 1992 confirmed the results of the 1991 investigations. The strong interactive effects of KNO₃ and PGR-IV were repeated, providing a seedcotton yield increase of 12.6 percent . . . very close to the magnitude of yield increase in the 1991 data.

Summary

Proper plant nutrition for optimal crop productivity in cotton requires that mineral deficiencies be avoided. The obvious question is whether the addition of other nutrients would also have been beneficial given the extra fruit retention and nutritional requirement in the PGR-IV treated plants. These preliminary data suggest that foliar feeding with KNO₃ following the application of the plant growth regulator PGR-IV enhances yield synergistically. This research is being continued to further evaluate the beneficial aspects of combining the use of PGR-IV and foliar fertilization as a management tool for cotton producers. ■



Minnesota

Eliminating Off-Farm Nitrogen: A Case Study

THIS STUDY was established on a Minnesota farm to evaluate options available to a farmer who wished to eliminate off-farm nitrogen (N) sources by utilizing only on-farm manure. Researchers evaluated three options: 1) Improving N use without changing crop and livestock enterprises substantially; 2) expanding livestock production; 3) increasing alfalfa production. The economics of each option were analyzed.

It was found that increasing alfalfa production would most likely meet the goal of eliminating purchased N fertilizers.

However, economic returns were not acceptable, primarily because of the loss of government payments, but also because of the problem of finding markets as hay production increased. Applying manure uniformly across the farmer's operation (three sites over an 11-mile area) was difficult because his management program was geared to meet goals other than making the best use of manure.

Researchers concluded that many of the decisions needed to manage fertilizers more efficiently . . . for both economic and environmental reasons . . . are farm-specific, not general in nature. ■

Source: Howard Person and Richard Levins. 1992. *J. Prod. Agric.*, Vol. 5, no. 4.