

EFFICACY OF TEMIK IN ENHANCING GROWTH AND CONTROLLING THRIPS IN COTTON.

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OBJECTIVE: To determine if Temik has plant growth regulator qualities and quantifying its benefits to cotton when subjected to thrips.

PROCEDURES: Cotton was grown for 2 months in a growth chamber where insect populations could be controlled. The chamber was programmed to simulate the daily temperature fluctuation of April 6th based on a 7 year average. Every 2 weeks the chamber was reprogrammed to the average temperature of April 20, May 4, and May 18. The four treatments used were A) no Temik no thrips (control), B) Temik applied at seeding at a rate of 5 lbs per acre, C) thrips and no Temik, and D) thrips and Temik which was applied at seeding at 5 lbs per acre. Thrips were added daily to the growth chambers to treatments C and D from 2 days after emergence until the experiment ended. Plant height was recorded every 5 to 7 days. At the end of the experiment leaf area, leaf dry weight, stem dry weight, number of nodes, final height, tap root dry weight, and fine root dry weight were all determined.

RESULTS: There was no statistical difference in plant height among treatments (Fig. 5). However, at the end of the experiment the plants subjected to thrips were generally 1 to 3 cm smaller than the plants not subjected to thrips. Cotton grown with Temik and no thrips had no increase in plant growth above the control in any of the parameters measured (Fig. 1 - 4). As expected thrips caused a significant decrease in plant growth. When Temik was used to control the thrips the plants indeed had a greater biomass and leaf area, but the plants were statistically smaller than the control and Temik alone. The greatest differences were in tap root and fine root dry weights (Fig. 3-4).

FUTURE PLANS: This same experiment will again be conducted in the growth chambers. In addition to the plant growth parameters measured previously leaf area will be determined every 7-9 days, photosynthesis will be measured on the leaf at the 3rd and 4th node at the conclusion of the experiment, final fine root length will be determined, and N, P, and K concentrations in the leaves will be measured upon termination of the experiment. In addition field studies will be conducted to validate these results to a growers situation.

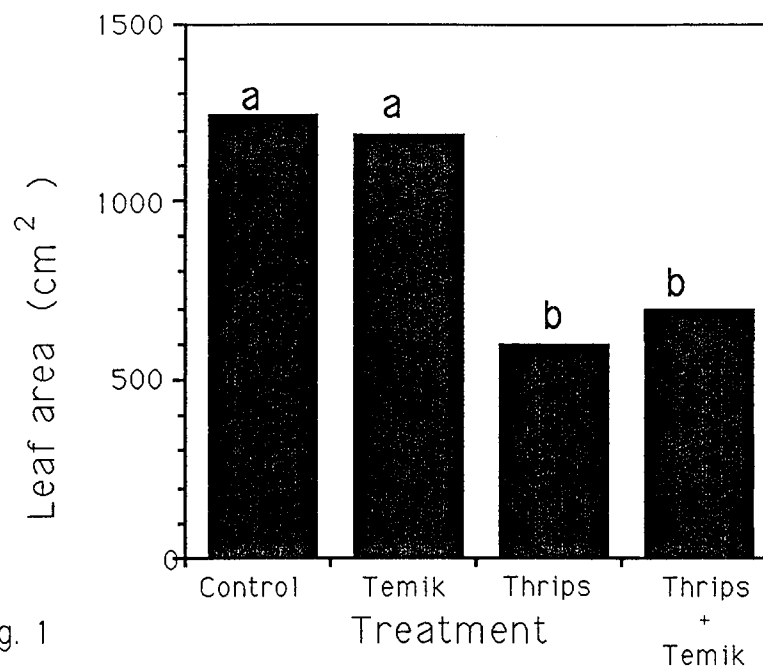


Fig. 1

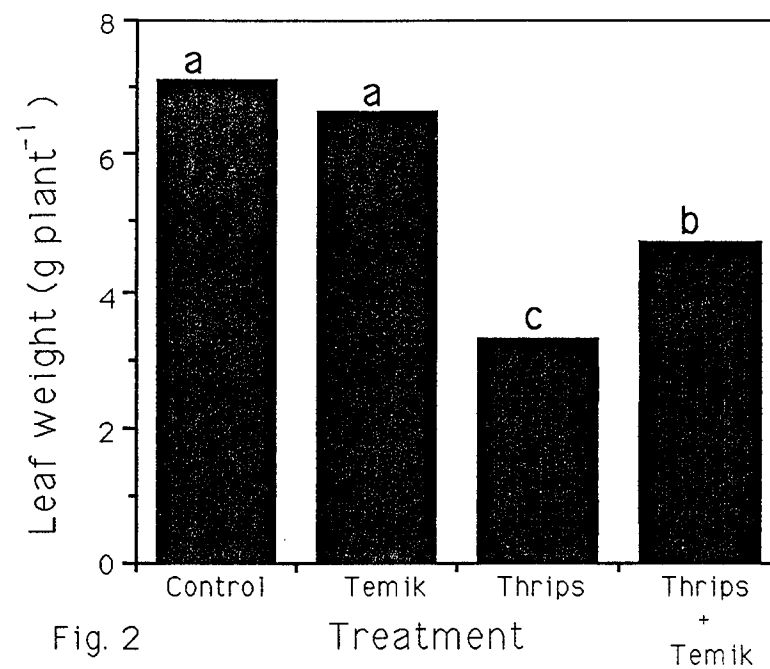


Fig. 2

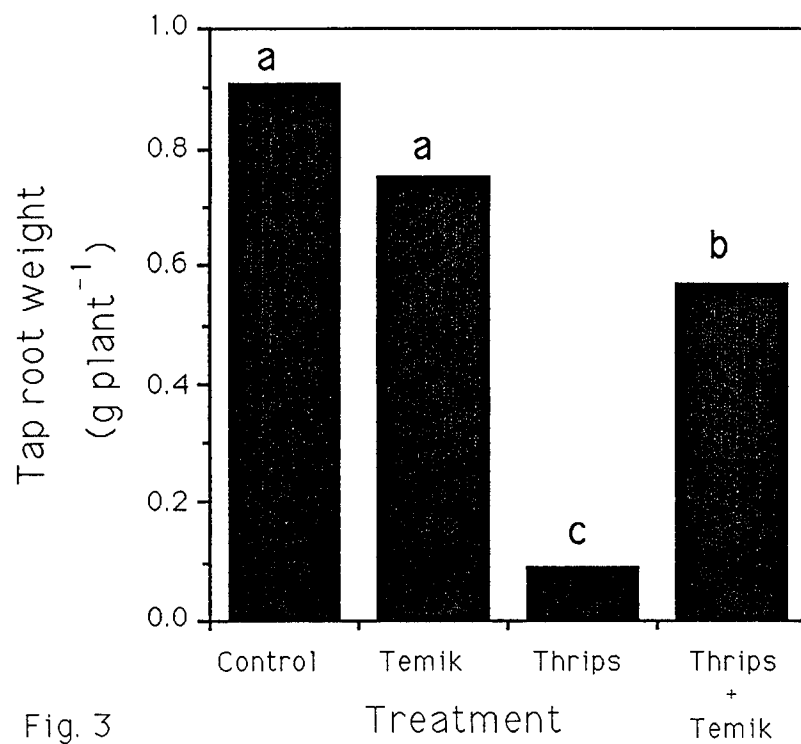


Fig. 3

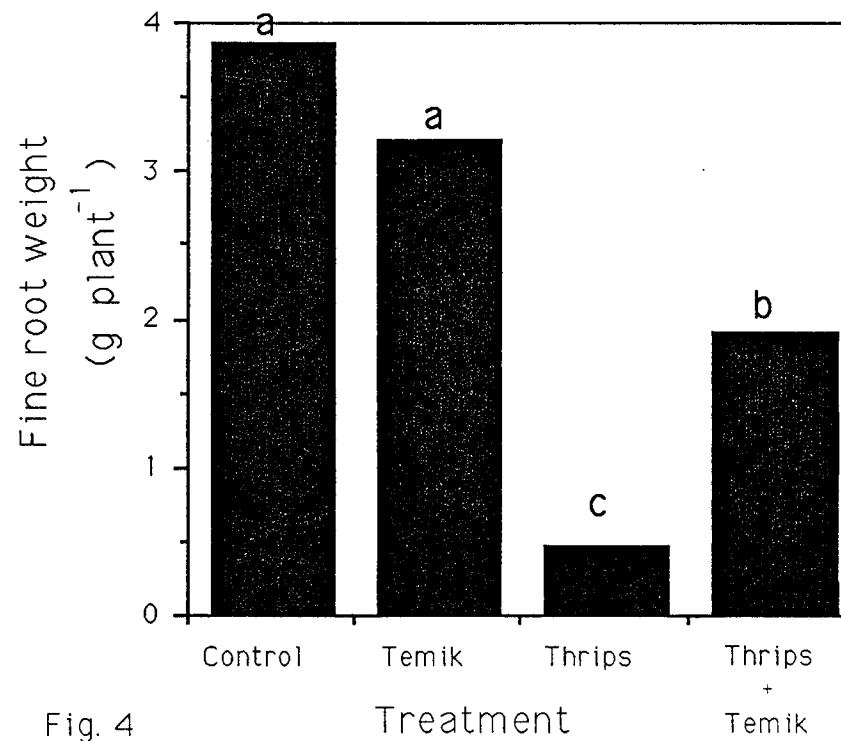


Fig. 4

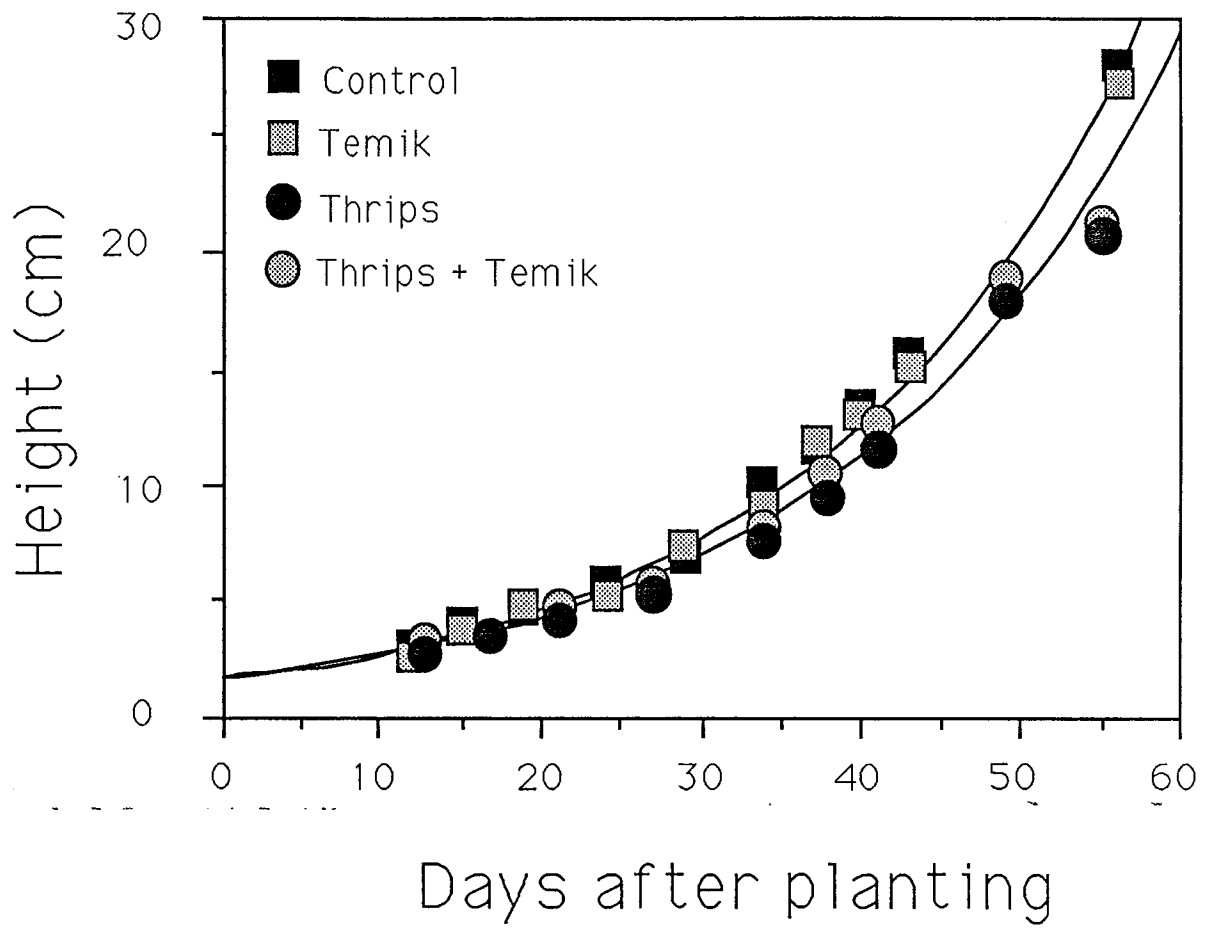


Fig. 5