

**ADAGE™: A NEW COTTON INSECTICIDE
SEED TREATMENT FROM NOVARTIS
CROP PROTECTION, INC.
Larry Zang, Vince Morton and Ngoan Ngo
Novartis Crop Protection, Inc
Greensboro, NC**

Abstract

Adage, a new insecticide seed treatment, shows excellent performance against aphids and thrips, two important early season insect pests on cotton.

Introduction

CGA-293343 is a new seed treatment insecticide which has been given the chemical classification of neonicotinoid, and trademark Adage in the United States. Adage is a highly systemic moiety which moves acropetally into the young seedling following seed treatment. Adage is a broad-spectrum insecticide which has activity against soil dwelling and early season sucking and leaf-feeding insect pests.

Discussion

The spectrum of the activity of Adage on cotton is shown in Table 1.

Novartis has been profiling the biology of Adage over the past three years in the U.S. against the cotton aphid and tobacco thrip. The residual activity of Adage depends upon the loading rate and the insect pest. This is shown in the Tables 2-5 in research conducted at the Novartis Delta Research Station in Greenville, MS.

The conclusions from this research are that there is a nice rate response from 50 to 200 gr ai/100 kg seed, and that at 200 gr ai/100 kg seed Adage provides

- 3 weeks control of Tobacco thrips, and
- 5 weeks control of the Cotton aphids.

Table 6 shows a summary of the performance of Adage compared to Gaucho and Temik.

One key aspect that contributes to the consistent performance of Adage is the water solubility.

Table 7 shows a comparison of the water solubility of Adage and Gaucho.

The higher water solubility of Adage provides a more consistent performance over Gaucho, especially in drier soil conditions. This was demonstrated by a cotton thrip trail in

which the relative performance of both products were compared in a dryland and irrigated trial. The only difference in these trials, which were planted on the same day in the same field, was the irrigated trial received one inch of irrigation water three days after planting (Table 8). Similar performance differences between these two-seed treatment insecticides have been in other trials where the soil above the seed dried out.

The impact of Adage on the yields of cotton can be seen in Tables 9 and 10. The trial on aphids was conducted in Texas, that on thrips in Mississippi.

Summary

Table 11 outlines the advantages of Adage as an insecticide seed treatment

Table 1. Spectrum of Activity of Adage on Cotton:

<i>Aphis gossypii</i>	(Cotton aphid)
<i>Franklinella fusca</i>	(tobacco thrip)
<i>Empoasca devastans</i>	(jassid)
<i>Alabama argillacea</i>	(cotton leafworm)

Table 2. The Activity of Adage on Immature and Adult Tobacco Thrips 11-13 Days After Planting
Average of Five Trials (1996-97) in MS

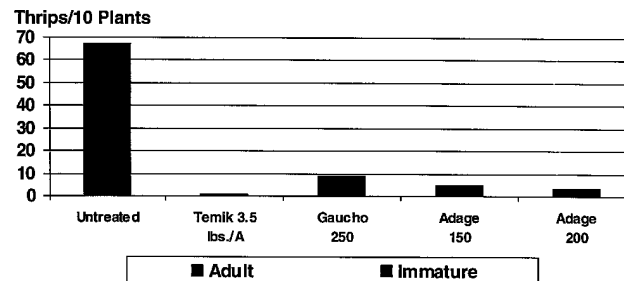


Table 3. The Activity of Adage on Immature and Adult Tobacco Thrips 20-25 Days After Planting
Average of Five Trials (1996-97) in MS

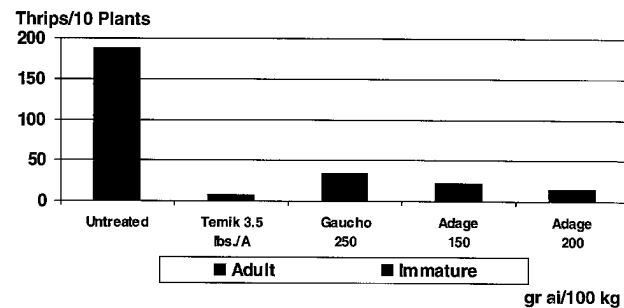


Table 4. The Activity of Adage on Cotton Aphids Four Weeks After Planting
Average of Four Trials (1997)

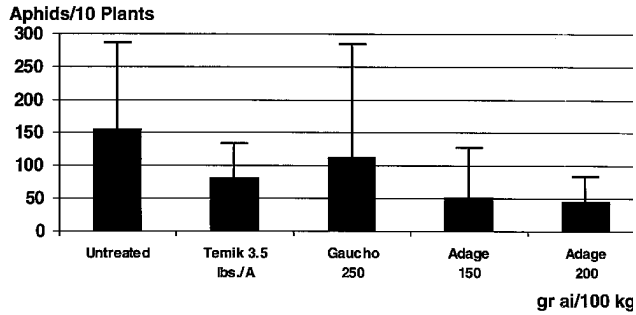


Table 5. The Activity of Adage on Cotton Aphids 5 Weeks After Planting

Treatment	Rate (gr ai/100 kg Seed)	Number Aphids (Per 10 Plants)
Untreated Control	-	405
Temik	3.5 lbs./A	479
Gaucho	250	359
Adage (5FS)	150	289
Adage (5FS)	200	290

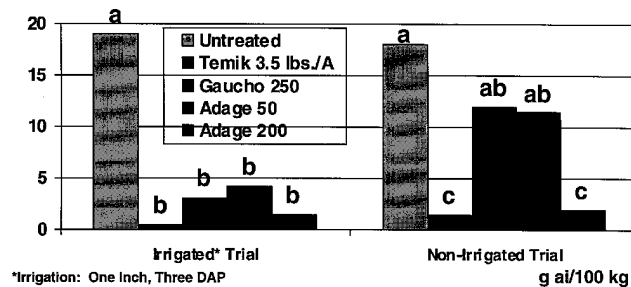
Table 6. Summary of the Performance of Adage on Cotton Vs. Gaucho and Temik

Insect	Adage Vs. Gaucho	Adage Vs. Temik
Tobacco Thrip	>	≤
Cotton Aphid	>	>

Table 7. The Water Solubility of Adage Compared to Gaucho

Adage	3,265 ppm
Gaucho	560 ppm

Table 8. Adage Seed Treatment on Cotton
Number of Adult Thrips/Ten Plants (14 DAP)



*Irrigation: One Inch, Three DAP

Table 9. Yields of Cotton Treated With Adage in Texas
Aphid Trial

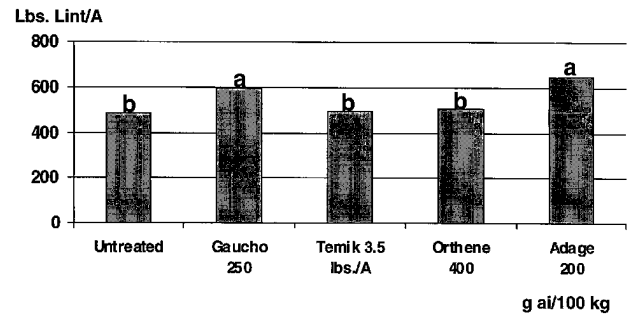


Table 10. Yields of Cotton Treated With Adage in Mississippi
Thrip Trial

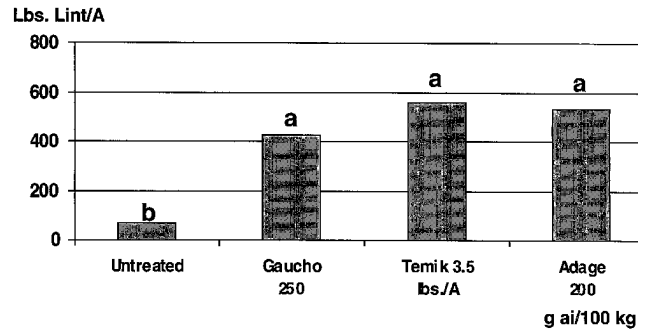


Table 11. Advantages of Adage

1. Lower Use Rates than Current Seed Treatment Insecticide
2. More Consistent Efficacy Than Gaucho, Especially in Drier Soils
3. Longer Residual Than Gaucho
4. Replacement for Lindane on Cereals and Corn
5. Excellent Control of Aphid-and Leafhopper-Borne Viruses
6. Excellent Worker Safety Package
7. No Known Insect Resistance or Cross-Resistance
8. Excellent Margins of Crop Tolerance
9. No Compatibility Problems with Common Seed Treatment Products
10. Environmentally Compatible Approach to Insect Control