

# ***A New Whitefly Material Registered in Arizona***

*A quick guide to the new product, Actara, by Syngenta*

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Actara® by Syngenta has recently been registered in Arizona for the first time (7/13/01). It is a foliar material designed for whitefly and aphid control in cotton. Many questions abound about a new product, especially one that provides new options in whitefly control. Below are some basic facts about Actara (***consult the label for specific use information and other restrictions***).

Common Name: thiamethoxam  
Chemical Class: neonicotinoid (thianicotinyl)  
Trade Names: Actara (in cotton); Platinum®, Adage®, Cruiser® (for other uses & crops)  
Other Names: CGA-293343  
Properties: contact & stomach poison with translaminar and systemic movement  
Formulation: 25WG  
Rate (Cotton): 3 oz / A  
Days-to-Harvest: 21  
Re-entry: 12 hrs  
Limitations: 2 applications in cotton no sooner than 5 days apart  
5 GPA by air  
10 GPA by ground

While Actara is a new compound for commercial use, UA scientists have been studying thiamethoxam for several years. Several excellent field studies have been conducted in cotton, vegetables and melons in Arizona. In summary, these studies confirm the rather considerable activity on aphids and whiteflies. They also show general safety towards beneficials especially when compared to more conventional products.

## ***How does Actara fit in Arizona cotton?***

It provides a powerful new foliar alternative to many of the Stage II (non-pyrethroids) and Stage III (pyrethroid) adulicides that are currently recommended for whiteflies. It has greater efficacy on immature stages and greater specificity than these alternatives, though still not as effective or selective as either IGR (Applaud® or Knack®). The general strategy remains the same. IGRs are the best for first use against whiteflies; however, Actara would likely fit well in Stage II or III, i.e., as a follow-up to the IGRs, later in the season. Or, Actara could be a good option in areas only requiring late-season control of whiteflies prior to harvest.

## ***What about other insects in cotton?***

Actara does not provide adequate protection against Lygus bugs in Arizona despite its labelling for “suppression.” Replicated research on this compound has shown that this product’s strengths are in whitefly and aphid control.

## ***Other Considerations... Rates?***

Because this product is labelled for only a single rate, there is no latitude in applying this product. Growers should examine test results carefully and compare this use pattern with those used in

replicated studies. For example, in one study, the minimum rate tested was 4.27 oz / A (Ellsworth 1999) which is considerably higher than the cotton label of 3 oz / A.

### ***Other Considerations... Resistance?***

Actara comes from the same chemical family as Admire® or Provado®. Like any chemical class, it is prudent to expect some level of cross-resistance among products (cross-resistance among neonicotinoids has been documented in areas of intense dependence on this class such as in Almeria, Spain). Until now, imidacloprid, the active ingredient in Admire, was the only neonicotinoid on the market. Even then, it has played a major insect control role mainly in melons and vegetables and not in cotton. Because Actara is registered on multiple crops that are important to Arizona, it is important that pest managers recognize the risk of exposing whiteflies to this class of chemistry too many times. Thus, growers should not use foliar sprays of Actara (or Provado) on melons or vegetables where Admire (or Platinum) has already been used. It would be prudent to avoid usage of Actara on cotton that is adjacent to or in localized areas of melon or vegetable production that have been previously treated with Admire.

### ***Where can I find more information on this or other products of interest?***

Several good resources exist for information about Actara or thiamethoxam. Many publications and reports on this active ingredient are available from the Arizona Cotton Information Site (ACIS), a University web site containing independent, science-based, crop production and protection information. That site is located at: <http://ag.arizona.edu/crops>. Various menus and buttons can be used to navigate to information on many topics of importance to growers and pest managers. Furthermore, there is a “Search” button on the site that can provide quick access to information on virtually any topic. In this case, you could enter in any key word or words relating to Actara. You could, for example, try “293343” the experimental number assigned to this active ingredient. This example search brought up 8 publications on the site including information on aphid control in spinach, whitefly control in melons, and resistance management. Other keywords are likely to bring up even more information.

### **Some references to learn more about thiamethoxam include:**

Ellsworth, P.C. 1999. Evaluation of chemical controls of *Lygus hesperus* in Arizona. In J.C. Silvertooth [ed.], Cotton, A College of Agriculture Report. Series P-116. University of Arizona, College of Agriculture, Tucson, AZ. pp. 428–447. URL: <http://ag.arizona.edu/pubs/crops/az1123/az11237n.pdf>

Kerns, D.L. & T. Tellez. 1998. Efficacy of Experimental Insecticides for Insect Control in Cotton Grown in the Low Desert Region of Arizona, 1997. In J.C. Silvertooth [ed.], Cotton, A College of Agriculture Report. Series P-108. University of Arizona, College of Agriculture, Tucson, AZ. pp. 422–434. URL: <http://ag.arizona.edu/pubs/crops/az1006/az10067o.html>

Palumbo, J.C., P.C. Ellsworth, T.J. Dennehy & K. Umeda. (1999) Cross commodity management of whiteflies and chemical efficacy in Arizona. In D. N. Byrne [ed.], 1999 Vegetable Report. Series P-117, AZ 1143, University of Arizona, College of Agriculture, Tucson, AZ. pp.108-120. URL: [http://ag.arizona.edu/pubs/crops/az1143/az1143\\_24.pdf](http://ag.arizona.edu/pubs/crops/az1143/az1143_24.pdf)

Palumbo, J.C., C. Mullis, Jr., F. Reyes, A. Amaya & L. Ledesman. 1999. Application and Timing of Insecticides for Aphid Management in Head Lettuce. In D. N. Byrne [ed.], 1999 Vegetable Report. Series P-117, AZ 1143, University of Arizona, College of Agriculture, Tucson, AZ. pp. 94–107. URL: [http://ag.arizona.edu/pubs/crops/az1143/az1143\\_23.pdf](http://ag.arizona.edu/pubs/crops/az1143/az1143_23.pdf)

Li, A.Y., T.J. Dennehy, S. Li, M.E. Wigert, M. Zarborac, and R.L. Nichols. 2001. Sustaining Arizona’s fragile success in whitefly resistance management, In J.C. Silvertooth [ed.], Cotton, A College of Agriculture Report. Series P-125. University of Arizona, College of Agriculture, Tucson, AZ. pp. 278–291. URL: <http://ag.arizona.edu/pubs/crops/az1224/az12247g.pdf>