

► The Evolving World Of Marestalk Control

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Horseweed or marestalk information continues to evolve and research continues. We will compare and contrast research results and current recommendations. In this report we will use the name “marestalk” as it seems to be the most commonly used popular name, but to be technical, we are discussing Horseweed (or *Conyza Canadensis*, it's Latin name), which is pictured below.



Research Summary:

Clarity and 2,4-D have both provided very good marestalk control in our trials. We have made bi-monthly applications from March until May and all treatments have provided complete control. Treatments made in late March had minimal regrowth. This tends to conflict with other experiences that 1) 2,4-D or low rates of Clarity do not provide control and 2) that new germination is a problem through much of the cotton growing season.

Some recommendations have suggested using Gramoxone early (February) as it is more size sensitive but less temperature sensitive, and Ignite late (April) as it is less size sensitive but more temperature sensitive. However, 2006 research showed variable results, with Ignite working well early, and Gramoxone working well later. A number of strong warm and cool spells in 2006 probably complicated the results. Ignite and Gramoxone may be a part of a marestalk management program; however, they do not provide acceptable, stand-alone control.

Envoke continues to show good utility for marestalk management. In 2005-2006 studies, fall-applied Envoke controlled horseweed until planting time. Fall Envoke also caused some cotton stunting but no yield effects. Postemergence Envoke has also provided good horseweed suppression. Control tends to be around 80% or greater when horseweed is 8" tall or less.

We conducted a in-depth burndown program study evaluating late-winter burndowns followed by “planting time” applications; however in this study acceptable horseweed control was essentially due to the latewinter burndown with Clarity or 2,4-D and planting time follow up treatments added little for horseweed control.

General Recommendations for 2007 are similar to the past with a later-winter application of a growth regulator herbicide being the foundation of marestalk control. There is some discussion of using higher Clarity rates; however, we are currently limited by a label maximum of 8 oz/A.

It is also recommended that growers plan on using a fall application to keep marestalk smaller, or that they plan on a “clean up” application around the time of planting. In other words, a “two-shot” approach is recommended. Obviously, at this time, the “Fall option” has passed.

With the clean-up option, the choices are Gramoxone or Ignite. With both of these herbicides, activity is increased by applying them with a photosynthetic-inhibitor herbicide such as Cotoran, Direx or Caparol. Even with tank mixtures, control may be less than complete. Envoke is a good option postemergence; however, for best results, marestalk should be shorter than 4".

Again, with either “spray-in-the-fall-to-keep-it-small” or “planting-time-clean-up” control programs, the “real meat” of the weed control program is Clarity or 2,4-D, applied during “warm” late-winter weather in February or March. Fall applications, or planting time applications will fail if they aren’t in a program with a growth regulator.

One final recurring recommendation is Liberty Link cotton. Spraying Ignite twice, in the cotton crop, when temperatures are warmer usually makes for excellent marestalk control. However, growers should be aware that for adequate pigweed control, a residual preemergence treatment should be used and Ignite must be sprayed in an extremely timely manner.

► Cotton Aphid Population Dynamics And Control Strategies In Conservation Tillage Cotton Fields

Presented by Dr. B. Roger Leonard

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Introduction

The cotton aphid, *Aphis gossypii* Glover, has been a cotton, *Gossypium hirsutum* L., pest in the United States since 1854. Historically, significant infestations of this insect have been induced with pesticides, but cotton aphid usually has been considered a secondary pest problem. The use of non-selective insecticides disrupts natural biological control agents of cotton aphid. Populations of these pests then reach levels that can influence normal plant development during vegetative and reproductive growth stages. In addition, ‘honeydew’ produced by these insects during boll opening can contaminate seedcotton, and in some instances, reduce harvest efficiency and affect fiber quality in open bolls.

Reports of significant infestations of this pest have been randomly scattered throughout the scientific literature. Prior to the 1940’s, cotton aphid was associated with applications of the inorganic insecticide, calcium arsenate, applied to control boll weevil, *Anthonomus grandis grandis* Boheman. In the mid-1980’s, this insect appeared to become an annual problem on cotton in selected states across the U.S. cotton belt. The occurrence of treatable infestations in many areas was associated with frequent applications of pyrethroids for caterpillar pest control or applications of malathion used in boll weevil eradication programs. In 1991, the cotton aphid was considered the most significant cotton pest of the U.S. Cotton Belt due to failures of recommended insecticides. The significance of cotton aphid as a cotton pest during the previous decade was associated with the development of insecticide resistance in populations across numerous states. Many labeled insecticides failed to provide satisfactory control and were removed from Cooperative Extension Service recommendations. Presently, only a limited number of products remain consistently effective against this pest. During 2006, cotton aphids were a significant pest problem in Mid-South cotton fields. Reports of unsatisfactory control with a range of insecticides were common, and additional oversprays were applied to many fields.

Cotton aphid infestations usually are detected more often on seedling plants in conservation tillage cotton production systems compared to plants in conventional tillage systems. Nearly all of Louisiana’s cotton fields are exposed to very limited tillage practices and are planted to herbicide-tolerant (Roundup ready) cotton varieties. Cotton aphids in conservation tillage fields consistently reach peak population densities more rapidly compared to cotton aphids in conventional tillage fields. This occurrence can trigger insecticide applications earlier in the season and increase the frequency of treatments for cotton aphid. The objectives of this report are to briefly review a few selected factors that contribute to cotton aphid population dynamics and illustrate the performance of recommended insecticide use strategies.

Key Factors Influencing Cotton Aphid Population Dynamics

Cotton aphid population dynamics can be influenced by both agronomic and pest management practices. A number of biological and operational factors, including tillage practices, cotton varieties, seeding dates, solar radiation, leaf moisture concentrations, plant spacing, plant nutrition/soil fertility levels, host plant diversity, insecticide use strategies, insecticide-resistant populations, and intensity of natural biological enemies, can influence cotton aphid populations and their effects on cotton plants. However, this summary will focus on the contribution of conservation tillage practices and insecticide use strategies to cotton aphid population