

Control of Cotton Rust in Southeastern Arizona

Deborah J. Young, Cochise County Agricultural Agent;
Lawrence M. Sullivan, Cochise County Director

Summary

The fungicides triadimefon (Bayleton), bitertanol (Baycor), and Bay HWG 1608 (Mobay Chemical Corporation) were applied for the control of cotton rust (Puccinia cacabata). Yield data showed that (1) curative applications of Baycor and (2) preventative applications of Bay HWG 1608 significantly increased seed cotton weights.

Southwestern cotton rust is a disease of economic importance in southern Arizona, New Mexico, west Texas, and northern Mexico. Disease incidence is dependent on the occurrence of summer rains. Because growers often fail to apply protective fungicides such as mancozeb on a timely basis, compounds with systemic activity (Bayleton and Bay HWG 1608) were tested.

Curative treatments were applied at first observed rust (July 18) and at 2-week intervals through August 14. Preventative treatments were applied beginning June 5 and at 3-week intervals through August 8. Specific treatment dates will vary from year to year.

Rust observations were made periodically. Percent infection was determined from the date of first rust (July 18) through August 21, when no new or continuing rust infections were active in the field. The greatest amount of rust infection was observed between August 1 and August 8.

Curative treatments were effective in decreasing observed rust infections when applied July 18 and August 1. One week following the August 1 application, all treatments except Bayleton (2 oz. active ingredient/acre) significantly reduced the number of rust pustules on leaves.

Preventative treatments applied June 27 did not decrease the amount of rust observed July 18. All treatments applied July 18, however, significantly reduced the number of rust pustules on leaves by August 1 except Bayleton (2 oz. active ingredient/acre).

Baycor, applied three times at a rate of 4 oz active ingredient per acre, significantly increased yield as compared to other curative treatments and control (Table 1). Bay HWG 1608, applied three times at a rate of 4 oz active ingredient/acre, significantly increased yield as compared to other preventative treatments and control (Table 2).

Table 1. Seed cotton yield at Haas Bros. Farms, Bonita - curative fungicides

<u>Treatment</u>	<u>Rate</u> ¹	<u>Dates of Application</u>	<u>Mean lbs./ 120 sq. ft.</u> ²	<u>Mean lbs./ Acre</u>
Baycor	4oz	7/18, 8/1, 8/15	4.5 ^b	1634
Baycor	2oz	7/18, 8/1, 8/15	3.7 ^{ab}	1343
Bayleton	4oz	7/18, 8/1, 8/15	3.3 ^{ab}	1198
Bayleton	2oz	7/18, 8/1, 8/15	2.9 ^a	1053
Control	---	7/18, 8/1, 8/15	2.2 ^a	799

¹Active ingredient/acre

²Values followed by the same letter are not significantly different at p=0.05 by Duncan's Multiple Range Test.

Table 2. Seed cotton yield at Haas Bros. Farms - preventative fungicides

<u>Treatment</u>	<u>Rate</u> ¹	<u>Dates of Application</u>	<u>Mean lbs./ 120 sq. ft.</u> ²	<u>Mean lbs./ Acre</u>
Bay HWG 1608	4oz	6/27, 7/18, 8/8	4.9 ^b	1778
Baycor	4oz	6/27, 7/18, 8/8	4.3 ^{ab}	1561
Baycor	2oz	6/27, 7/18, 8/8	3.3 ^{ab}	1198
Bayleton	2oz	6/27, 7/18, 8/8	3.2 ^{ab}	1162
Bayleton	4oz	6/27, 7/18, 8/8	3.0 ^{ab}	1089
Control	---	6/27, 7/18, 8/8	2.2 ^a	799

¹Active ingredient/acre

²Values followed by the same letter are not significantly different at p=0.05 by Duncan's Multiple Range Test.