

Field evaluation of fungicides for management of Ascochyta blight on chickpeas

Carrington, ND (2008)

Blaine Schatz, director & agronomist | Ezra Aberle, research specialist
NDSU Carrington Research Extension Center

KEY FINDINGS:

Sequential applications of Proline (5 and 5.7 fl oz/ac) and rotational strategies in which Proline (5 fl oz/ac) was tank-mixed with a protectant fungicide (mancozeb or chlorothalonil) and rotated with Endura (6 oz/ac) provided excellent control of Ascochyta.

When applied to chickpeas under significant Ascochyta disease pressure, ProPulse (10.3 fl oz/ac) provided greater “kick-back” curative activity than Proline (5 fl oz/ac). When applied as two sequential applications 10 and 25 days after an application of chlorothalonil (applied as Echo 720 at 1.4 pt/ac), ProPulse (10.3 fl oz/ac) resulted in a sharp increase in chickpea yields relative to Proline (5 fl oz/ac).

Under the conditions evaluated in this trial, chlorothalonil (applied as Echo 720 at 1.4 pt/ac) did not perform as well as Proline (5 fl oz/ac) when applied as the first product in a fungicide program. This result is not surprising; Ascochyta blight was at fairly high levels when the first fungicide was applied, and chlorothalonil is a protectant fungicide with no curative activity.

ACTIVE INGREDIENTS OF FUNGICIDES EVALUATED:

Dithane: mancozeb; **Echo 720:** 720 grams chlorothalonil per liter
Endura: 700 grams boscalid per kilogram
Headline: 250 grams pyraclostrobin per liter
Proline: 480 grams prothioconazole per liter
ProPulse: 200 grams prothioconazole + 200 grams fluopyram per liter

METHODS:

Chickpea variety: Sierra **Previous crop:** spring wheat
Planting date: May 12 **Harvest date:** September 25
Row spacing: 7 inches **Rows per plot:** 7
Plot size at harvest: 5 ft (center-to-center) by approx. 19 feet long
Fungicides were applied at 35 psi in 17 gallons of water per acre with 80015 flat-fan nozzles.
Fungicide application timing: A: June 30 (prior to flowering; Ascochyta at trace levels); B: July 10; C: July 25; Aug. 11

IMPORTANT NOTICE:

Fungicide performance can differ in response to which diseases are present, levels of disease when products are applied, environmental conditions, plant architecture and the susceptibility to disease of the chickpea variety planted, crop growth stage at the time of fungicide application, and other factors. This report summarizes fungicide performance as tested at the NDSU Carrington Research Extension Center under the conditions partially summarized in the methods section (above). Fungicide efficacy may differ under other conditions; when choosing fungicides, always evaluate results from multiple trials. This report is shared for educational purposes and is not an endorsement of any specific products.

This research was funded by Bayer CropScience

	Ascochyta Incidence		Ascochyta Severity		Test Weight	Yield	Seed Size						
	July 9	Aug. 21	July 9	Aug. 21			> 10 mm	9-10 mm	8-9 mm	7-8 mm	Seeds / Pound		
Untreated Check	100.0	100.0	68.8	81.3	98.0	na	0	0.0	0.0	0.0	0.0	0	
Untreated Check	100.0	100.0	65.0	81.3	99.0	na	24	0.0	0.0	0.0	0.0	0	
Proline 480SC 5 fl oz/ac (A,B,C)	71.3	63.8	82.5	16.3	6.3	7.3	60.7	1753	40.7	43.6	13.6	2.0	922
Proline 480SC 5.7 fl oz/ac (A,B,C)	60.0	45.0	70.0	20.0	6.3	7.0	60.8	1963	50.6	39.0	9.1	1.1	889
Proline 480SC 5 fl oz/ac (A,B,C) confidential	73.8	71.3	60.0	17.5	7.5	5.5	60.9	1802	35.5	45.8	16.7	1.8	957
Echo 720 1.4 pt/ac (A) / Headline 250EC 6 fl oz/ac (B) / Proline 480SC 5 fl oz/ac (C)	93.8	95.0	86.3	61.3	32.5	14.3	60.6	664	30.7	40.8	23.6	4.8	1030
Echo 720 1.4 pt/ac (A) / Proline 480SC 5 fl oz/ac (B) / Headline 250EC 6 fl oz/ac (C)	98.8	95.0	96.3	66.3	26.3	26.3	na	148	33.8	33.3	26.9	4.1	1057
Echo 720 1.4 pt/ac (A) / Proline 480SC 5 fl oz/ac (B,C)	98.8	95.0	86.3	62.5	22.5	11.8	60.6	653	26.5	44.0	24.2	5.1	1032
Echo 720 1.4 pt/ac (A) / ProPulse 10.3 fl oz/ac (B,C)	98.8	97.5	73.8	67.5	31.3	9.5	60.8	1331	35.7	45.9	16.2	2.1	964
Echo 720 1.4 pt/ac + Proline 480SC 5 fl oz/ac (A,C) / Endura 6 oz/ac (B)	58.8	55.0	65.0	11.3	5.0	6.3	60.1	1988	41.4	43.9	12.9	1.5	948
Dithane 1.5 lb/ac + Proline 480SC 5 fl oz/ac (A,C) / Endura 6 oz/ac (B)	63.8	80.0	83.8	17.5	11.3	11.3	60.8	1573	46.5	37.7	13.9	1.9	925
Dithane 1.5 lb/ac + Proline 480SC 5 fl oz/ac (A,C) / Endura 6 oz/ac (B,D)	86.3	90.0	88.8	23.8	18.8	13.8	60.6	1355	46.2	39.3	12.3	2.0	922
MEAN	83.6	82.3	82.7	41.5	27.5	25.8	60.7	1261	39.4	41.7	16.2	2.5	965
C.V.%	14.1	12.4	14.4	18.2	21.0	19.3	1.1	26.6	16.9	11.2	25.1	51.9	4.3
LSD.05	17.0	14.7	17.2	10.9	8.3	7.2	NS	487	9.7	NS	5.9	1.9	60
LSD.01	22.8	19.8	23.1	14.6	11.1	9.6	NS	656	13.1	NS	8.0	2.6	81