

Late Blight Foliar Fungicide Standard Chemistries (1300 Series)

Location: Prosper, ND
Plot Design: 4 X 25 ft. rows; 4 replications, RCBD, all four rows sprayed, all data from center two rows.

Planting Date: May 26, 2003
Row Width: 38 inches
Plant Spacing: 12 inches

Cultivar: NorValley

Fertilizer: 220 lb/a 22-12-05

Herbicide: Prowl (2 pt/a)+ Matrix (1.5 oz/a) pre-emergence; June 18

Insecticide: Admire (18 oz/a) in-furrow at planting
Asana (6.0 oz/a), August 3, 8

Inoculation method: Late Blight: Greenhouse reared plants (six weeks old) were inoculated with US-8 (A2) on July 17. Two infected plants were transplanted into the center of each eight-row plot on July 22, following the second fungicide application.

Fungicide application dates: July 16, 21, 28, August 4, 11, 18, 25, September 5

Fungicide application method: Fungicides were applied using a converted ATV.
(55 psi; 69 gpa; 11005XR nozzles)

Late Blight Foliar Fungicide Standard Chemistries - Prosper Series 1300

NOTE: Treatments 1302, 1313-1316 are CONFIDENTIAL

Treatment	Rate	Schedule	Late Blight (% Severity)										AUDPC	RAUDPC	Early Blight (% Severity)										AUDPC	RAUDPC
			7/17	7/25	7/31	8/7	8/14	8/20	8/29	9/5	9/12	7/17			7/25	7/31	8/7	8/14	8/20	8/29	9/5	9/12				
1301 Untreated			0.0	0.0	0.1	29.4	69.4	86.6	93.5	93.3	97.4	3048.4	0.53	0.0	0.0	0.0	1.1	0.0	1.6	0.0	0.0	0.0	19.2	0.00		
1303 Ranman + Silwet L-77	2.75 fl oz/a + 2.0 fl oz/a	full season	0.0	0.0	0.0	1.3	0.9	1.4	8.5	14.1	30.1	297.9	0.05	0.0	0.0	0.0	0.7	0.0	0.8	8.0	15.6	26.2	275.0	0.05		
1304 Dithane Ranman + Silwet L-77	2.0 lb/a 2.75 fl oz/a + 2.0 fl oz/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.8	1.6	1.1	7.7	11.3	17.9	227.7	0.04	0.0	0.0	0.0	1.9	0.1	1.3	7.1	13.7	19.1	243.1	0.04		
1305 Bravo WS Ranman + Silwet L-77	1.5 pt/a 2.75 fl oz/a + 2.0 fl oz/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.4	1.4	0.8	12.1	16.5	37.4	360.4	0.06	0.0	0.0	0.1	1.8	0.0	1.3	8.5	16.4	14.7	256.1	0.04		
1306 Bravo WS Headline Ranman + Silwet L-77 Omega	1.5 pt/a 9.0 fl oz/a 2.75 fl oz/a + 2.0 fl oz/a 5.5 fl oz/a	1,5 2 3,6,8 4,7	0.0	0.0	0.0	0.4	0.1	0.4	9.6	12.1	18.8	233.3	0.04	0.0	0.0	0.0	1.8	0.7	1.1	8.1	15.3	25.1	285.0	0.05		
1307 Bravo WS Omega Ranman + Silwet L-77	1.5 pt/a 5.5 fl oz/a 2.75 fl oz/a + 2.0 fl oz/a	1,2,7 3,5 4,6,8	0.0	0.0	0.0	0.9	0.6	0.9	10.3	13.4	35.9	319.3	0.06	0.0	0.0	0.0	1.1	0.0	1.2	9.2	18.4	30.6	326.5	0.06		
1308 Penncozeb	2.0 lb/a	full season	0.0	0.0	0.0	2.9	3.1	4.1	13.0	19.2	49.9	484.0	0.08	0.0	0.0	0.4	1.6	0.0	0.7	7.5	9.7	8.2	175.4	0.03		
1309 TD 2409-05	53.3 fl oz/a	full season	0.0	0.0	0.0	2.9	4.8	2.8	10.8	16.5	49.9	448.8	0.08	0.0	0.0	0.1	1.1	0.1	1.1	6.3	7.1	8.1	145.6	0.03		
1310 Penncozeb Bravo Zn	2.0 lb/a 2.125 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.9	1.9	1.6	7.4	10.9	16.3	223.1	0.04	0.0	0.0	0.2	1.0	0.3	1.2	5.9	8.7	9.9	161.1	0.03		
1311 Reason + Bond Bravo WS	5.5 fl oz/a + 0.1% v/v 1.0 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.3	1.9	2.5	8.8	11.3	23.5	263.7	0.05	0.0	0.0	0.0	1.3	0.0	0.8	7.3	11.4	21.1	226.9	0.04		
1312 Reason + Bond Bravo WS	8.2 fl oz/a + 0.1% v/v 1.0 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.3	1.2	1.0	9.8	15.3	32.6	317.3	0.06	0.0	0.0	0.0	2.1	0.0	0.9	8.1	12.1	19.9	240.2	0.04		
1317 VigorCal Phos + SprayTech Oil	2.0 qt/a + 1.0 pt/a	1,3,5,7	0.0	0.0	0.0	12.3	37.3	62.8	85.8	82.3	93.0	2386.7	0.42	0.0	0.0	0.0	0.8	0.0	0.2	2.1	2.1	2.3	46.0	0.01		
1318 Manzate Supertin + Curzate Manzate+ Headline Kocide LF + Bravo WS Manzate + Supertin	2.0 lb/a 2.5 oz/a + 3.2 oz/a 2.0 lb/a + 9.0 fl oz/a 2.0 pt/a + 1.0 pt/a 2.0 lb/a + 2.5 oz/a	1,2 3,4 5,7 6 8	0.0	0.0	0.0	0.4	2.1	2.3	9.1	11.0	16.4	241.3	0.04	0.0	0.0	0.0	1.3	0.1	0.6	7.4	8.4	10.3	168.2	0.03		
1319 Quadris Opti Bravo WS	1.5 pt/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.4	0.4	0.4	9.3	14.3	33.8	301.8	0.05	0.0	0.0	0.0	1.4	0.1	0.9	6.9	9.2	11.3	175.7	0.03		
1320 Quadris Opti Bravo WS	1.8 pt/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.5	0.3	0.9	8.0	9.7	14.8	195.5	0.03	0.0	0.0	0.0	1.3	0.3	0.6	7.8	10.9	15.1	207.1	0.04		

Treatment	Rate	Schedule	Late Blight (% Severity)									AUDPC	RAUDPC	Early Blight (% Severity)									AUDPC	RAUDPC	
			7/17	7/25	7/31	8/7	8/14	8/20	8/29	9/5	9/12			7/17	7/25	7/31	8/7	8/14	8/20	8/29	9/5	9/12			
1321	Quadris + Bravo WS Bravo WS Quadris + Bravo WS Bravo WS	11.5 fl oz/a + 1.25 pt/a 1.5 pt/a 11.5 fl oz/a + 2.5 pt/a 2.5 pt/a	1,3 2,4 5,7 6,8	0.0	0.0	0.0	0.2	0.3	0.9	7.7	10.9	16.1	203.6	0.04	0.0	0.0	0.0	1.4	0.0	0.6	6.4	10.9	11.4	181.9	0.03
1322	Quadris + Bravo WS Bravo WS	7.0 fl oz/a + 1.5 pt/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.3	1.1	0.8	9.8	11.3	17.8	234.5	0.04	0	0	0.1	1.4	0.0	0.1	7.4	10.2	15.7	196.2	0.03
1323	Headline Bravo WS Bravo WS	11.5 fl oz/a 1.5 pt/a 2.5 pt/a	1,3,5,7 2,4 6,8	0.0	0.0	0.0	0.1	0.9	1.0	7.9	9.4	21.5	219.3	0.04	0	0	0	1.4	0.0	0.6	6.4	8.6	15.1	179.1	0.03
1324	Amistar + Bravo WS Bravo WS	2.3 oz/a + 1.5 pt/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.1	0.5	1.1	7.7	10.1	17.7	206.0	0.04	0	0	0	1.4	0.3	0.8	6.4	11.0	17.4	207.3	0.04
1325	Tanos + Dithane Dithane	4.0 oz/a + 1.5 lb/a 2.0 lb/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.3	0.4	0.8	6.9	9.4	29.2	233.0	0.04	0	0	0	1.3	0.0	0.3	5.3	7.8	10.0	143.3	0.03
1326	Tanos + Dithane Bravo WS	6.0 oz/a + 1.5 lb/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.5	0.8	0.9	6.8	8.9	12.3	174.8	0.03	0	0	0	1.9	0.0	1.0	4.9	8.5	13.1	165.5	0.03
1327	Tanos + Dithane Dithane	6.0 oz/a + 1.5 lb/a 2.0 lb/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.7	0.2	1.3	8.0	10.0	22.5	228.6	0.04	0	0	0.1	1.0	0.0	1.0	6.0	9.3	11.5	168.3	0.03
1328	Tanos + Dithane Bravo WS	8.0 oz/a + 1.5 lb/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.4	1.5	0.7	7.4	10.8	14.9	205.4	0.04	0	0	0	1.1	1.3	0.9	5.7	9.3	12.0	174.8	0.03
1329	Tanos + Dithane Dithane	8.0 oz/a + 1.5 lb/a 2.0 lb/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.6	0.3	0.8	7.3	8.8	14.0	180.7	0.03	0	0	0	1.1	0.0	0.1	5.9	6.8	10.6	140.0	0.02
1330	KQ667 Bravo WS	1.5 lb/a 1.5 pt/a	1,3,5,7 2,4,6,8	0.0	0.0	0.0	0.9	2.1	2.3	8.1	10.6	15.6	230.6	0.04	0	0	0	0.7	0.1	0.3	6.7	9.9	14.9	181.8	0.03
1331	Dithane Gavel	2.0 lb/a 2.0 lb/a	1-5 6-8	0.0	0.0	0.0	1.9	0.8	1.8	7.9	9.3	14.4	211.4	0.04	0	0	0	1.0	0.0	0.7	5.5	7.8	10.0	145.4	0.03
1332	Dithane Gavel	2.0 lb/a 2.0 lb/a	1-3 4-8	0.0	0.0	0.0	0.9	0.9	1.4	9.4	9.6	15.1	218.4	0.04	0	0	0.1	0.6	0.3	0.9	7.1	9.1	11.7	175.1	0.03
1333	Dithane	2.0 lb/a	full season	0.0	0.0	0.0	1.5	1.5	1.7	7.7	10.0	17.5	225.7	0.04	0	0	0	1.3	0.1	1.1	5.8	8.8	9.8	160.1	0.03
1334	Polyram Headline + Endura Acrobat + Polyram	2.0 lb/a 12.0 fl oz/a + 4.5 oz/a 6.4 oz/a + 2.0 lb/a	1-3 4-5 6-8	0.0	0.0	0.1	4.1	2.6	3.4	8.1	9.8	21.2	279.6	0.05	0	0	0	1.8	0.3	1.3	5.8	7.8	9.4	157.2	0.03
1335	Echo 720	1.5 pt/a	full season	0.0	0.0	0.1	0.3	1.8	3.1	8.8	9.8	18.2	239.3	0.04	0	0	0.4	0.6	1.1	1.1	6.6	10.1	19.4	213.3	0.04
1336	Echo Zn	2.0 pt/a	full season	0.0	0.0	0.0	3.1	2.9	2.9	10.6	10.7	30.0	326.5	0.06	0	0	0.1	1.4	0.1	1.5	7.5	6.9	10.6	168.1	0.03
1337	Bravo Zn	2.0 pt/a	full season	0.0	0.0	0.0	1.1	1.6	0.8	7.7	9.4	21.6	226.3	0.04	0	0	0	1.2	0.0	1.1	5.7	8.4	10.7	158.7	0.03
1338	Bravo Zn + Dithane	1.0 pt/a + 1.125 lb/a	full season	0.0	0.0	0.0	0.6	0.7	1.4	7.8	9.4	18.9	213.1	0.04	0	0	0	0.9	0.0	0.4	5.4	7.1	11.0	141.7	0.02
LSD _{P=0.05}				NS	NS	NS	3.2	3.8	3.7	3.5	4.0	11.8	263.9	0.05	NS	NS	0.2	NS	0.4	0.8	1.2	1.8	2.9	63.5	0.01

NOTE: Early blight for the untreated treatment could not be assessed because of high late blight infection.