

2007 Ohio Soybean Inoculation Report

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In 2007 we evaluated 18 inoculation treatments including the untreated check (UTC) at each of six test sites with each treatment replicated eight times. Cultural information, and rainfall for each test site are shown in tables 1 and 2 respectively. The soil moisture was ideal for planting at each site and seedlings emerged within a week to produce relatively high plant populations. With the emergence of the second and third trifoliolate leaf, plant growth slowed dramatically at all sites due to dry surface soil conditions. Rainfall was very sparse from mid May through early July resulting in only a small amount of vegetative growth. There was little to no wilting, so we assume that most of the growth was in the root mass. Following receipt of rainfall in early to mid July, plants resumed vegetative growth, flowered well and formed many pods. The final plant height was about 70 percent of normal. An examination of the root systems indicated fewer than normal nodules on the tap roots of all plants examined and possibly more nodules than normal on some of the lateral roots. The reduced nodule count possibly accounts for the less than normal yield increase due to inoculation as seen in table 3. An economic analysis indicated that the reduced yield increases due to inoculation was off set by high grain prices so that inoculation paid a healthy dividend again in 2007.

Table 1. 2007 Cultural Information

	N1	N2	C1	C2	S1	S2
	Henry Co.	Huron Co.	Mercer Co.	Delaware Co.	Preble Co.	Clinton Co.
<u>Tillage</u>						
Fall	None	Chisel	Chisel	None	None	None
Spring	None	Field Cult	None	None	None	None
<u>Weed Control</u>						
Preemergence	Canopy XL/Dual II/Roundup UltraMax					
Postemergence	Roundup UltraMax					
<u>Soil and Crop Background</u>						
Soil Type	Hoytville	Kibbie	Mercer	Blount	Crosby	Westland
Soil pH	7.1	6.4	6.5	6.4	7.5	6.6
Soil Test P(ppm)	127	42	58	20	16	105
Soil Test K(ppm)	232	186	322	118	149	409
Fertilizer	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0
Previous Crop	Corn	Corn	Corn	Corn	Corn	Corn
Plant Date	5/15	5/19	5/14	5/10	5/08	5/9
Harvest Date	10/12	10/9	10/4	10/2	10/4	10/3

Table 2. 2007 Rainfall Data

	N1	N2	C1	C2	S1	S2						
	Henry Co.	Huron Co.	Mercer Co.	Delaware Co.	Preble Co.	Clinton Co.						
	-----Normal (2007)-----											
May	5.6	(0.5)	4.3	(0.6)	4.7	(0.9)	3.7	(1.0)	4.8	(1.6)	1.5	(1.8)
June	7.9	(1.4)	7.0	(2.6)	4.8	(2.2)	4.3	(1.8)	3.8	(2.2)	2.9	(2.3)
July	3.9	(1.9)	4.2	(3.0)	5.0	(2.3)	4.1	(1.9)	5.5	(2.1)	4.7	(4.2)
August	1.4	(3.6)	1.2	(7.7)	3.2	(8.0)	2.4	(4.6)	4.4	(1.5)	5.4	(1.3)
Sept.	1.4	(1.8)	2.3	(3.5)	2.2	(3.1)	2.1	(2.1)	3.5	(1.0)	5.3	(0.7)
TOTAL	20.2	(8.9)	18.9	(17.4)	20.0	(16.5)	16.5	(11.4)	21.9	(8.4)	19.3	(10.3)

Table 3: Effect of soybean inoculation product on yield (bu/ac) at six test sites in Ohio in 2007

Company *	Treatment	-----Test Site-----						
		N1	N2	C1	C2	S1	S2	MEAN
OSU	Untreated Check (UTC)	73.7	69.2	64.5	51.8	60.6	57.2	62.8
UAP	Dyna-Start	72.7	70.5	65.0	58.0	59.5	61.2	64.5
UAP	Dyna-Start + LI 6498	73.7	64.9	66.7	55.8	60.2	58.8	63.4
UAP	LI 6226	72.8	68.9	66.1	55.6	62.6	58.6	64.1
UAP	LI 6226 + LI 61945	76.0	66.9	65.5	55.1	62.1	60.5	64.4
UAP	Dyna-Start + Dyna-Start PRO	74.9	69.6	65.0	54.3	60.4	57.5	63.6
Precision	Launcher Pro	75.5	69.1	63.0	53.3	59.7	57.7	63.0
BU	NOD+	73.5	67.2	62.0	56.6	63.9	55.8	63.2
BU	NOD+ & NOD-extender	74.6	66.9	56.5	60.3	60.9	59.5	63.1
BU	Vault	74.1	70.7	66.6	55.9	61.3	54.3	63.8
BU	Cell Tech	73.5	68.2	66.7	53.7	61.7	58.9	63.8
EMD	Optimize	73.3	66.5	67.1	51.8	61.2	54.8	62.4
EMD	NI-65SC-4	73.9	70.0	65.9	54.1	60.5	56.6	63.5
EMD	NI65SC-4 + NI 50S-3	72.8	68.2	67.1	56.6	60.7	56.6	63.7
ABM	Excalibre Q/R	76.1	69.7	64.9	52.3	61.0	57.9	63.7
ABM	Excalibre Q/R half rate + extender	74.5	69.9	64.8	51.8	60.5	56.4	63.0
ABM	Excalibre Q/R + extender	74.9	69.5	67.4	56.2	62.8	58.3	64.9
Brett-Young	Soy Supurb	73.7	68.6	65.5	53.0	61.4	58.3	63.4
	Max	76.1	70.7	67.4	60.3	63.9	60.5	64.9
	Mean	74.1	68.6	65.0	54.8	61.2	57.7	63.6
	Min	72.7	64.9	62.0	51.8	59.5	54.3	62.4
	LSD 0.3	2.0	1.5	3.6	2.8	2.5	2.3	2.1
	CV	5.5%	4.3%	11.3%	10.5%	8.3%	7.9%	

* OSU	The Ohio State University	www.agcrops.com
UAP	United Agri Products	www.uap.com/uap/
Precision	Precision Laboratories Inc.	www.PrecisionLab.com
BU	BeckerUnderwood	www.beckerunderwood.com
MD	EMD CropBioScience	www.emdcropbioscience.com/
ABM	Advanced Biological Marketing	www.abm1st.com/
Brett-Young	Brett-Young Seeds, Ltd.	www.brettyoung.ca/