UNIVERSITY OF DELAWARE

LIMA BEAN

VARIETY

TRIAL

RESULTS

2010

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2010 University of Delaware Green Baby Lima Bean and Fordhook Lima Bean Variety Trials

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Green Baby Lima Bean Variety Trial

The 2010 Lima Bean Variety Trial included a total of 27 lines. Twelve of the lines were entered by the two participating seed companies: ADM Seedwest and Ben Fish & Son. Twelve lines were from the University of Delaware lima bean breeding program. The remaining three lines were standard varieties planted as checks. The purpose of this trial is to evaluate new processing green baby lima bean varieties for yield, maturity, and quality under Delaware growing conditions.

Varieties Entered in the 2010 Delaware Green Baby Lima Bean Variety Trial

Variety Name	Company
GBL 21-04-DA	Ben Fish
GBL C-elite	Ben Fish
GBL 24-04-DA	Ben Fish
GBL 25-04-DA	Ben Fish
GBL 26-04-DA	Ben Fish
GBL 184-85	check (Ben Fish)
G700805	ADM Seedwest
G700809	ADM Seedwest
G700801	ADM Seedwest
G200381	ADM Seedwest
G417274	ADM Seedwest
G418274	ADM Seedwest
G422266	ADM Seedwest
Cypress	check (ADM Seedwest)
M15	check
DE0401711	University of Delaware
DE0402701	University of Delaware
DE0407902	University of Delaware
DE0407903	University of Delaware
DE0407905	University of Delaware
DE0407906	University of Delaware
DE0407907	University of Delaware
DE0407910	University of Delaware
DE0407911	University of Delaware
DE0505002A	University of Delaware
DE0505002B	University of Delaware
DE0505004A	University of Delaware

Location:
Field 2B at the University of Delaware Research and Education Center Farm, Georgetown, DE

Cultural Practices:
The trial was planted on June 7, 2010 with a Monosem planter. None of the seed was treated. Varieties were planted in one-row plots with 30 inch between row spacing and 3 inch in-row spacing. Plots were 25 feet in length. Plots were arranged in a randomized complete block design with four replications. The field was fertilized according to soil test results. Pre-emergence herbicides (0.75 oz/A Sandea + 1.0 pint/A Dual II Magnum) were applied on June 8, 2010 as well as 40 lbs/A nitrogen in the form of 30% UAN. Plots were cultivated on July 15, 2010 and sidressed with 33 lbs/A nitrogen in the form of 30% UAN. Additional hand weeding was done in mid-August. Weed control in the trial was excellent. Plots were irrigated, when necessary, with a traveling, linear system. Warrior at 4 oz/A was applied for insect control on 7-27. No applications were made for disease control.

Harvest:
As harvest approached, five-plant samples were pulled from the maturing plots and the number of full, flat and dry pods was counted. Not all replications for a variety were harvested on the same day. Plots were harvested as close to ten percent dry pods as possible. However there were significant differences between the varieties in percent dry pods at harvest (Table 1). Harvest began on September 1 (86 DAP) and ended on September 13 (98 DAP).

A 15-foot section from each plot was harvested. The plants were cut off at soil level and weighed. To determine maturity at harvest, pods were stripped from five harvested plants from each plot and counted as full, flat or dry. The plants and pulled pods were fed into a stationary FMC viner. Trash was removed from the shelled beans with a fan and a screen, and the cleaned beans were weighed to determine yield.

Downy Mildew Resistance Testing
The twelve lines from the University of Delaware Lima Bean Breeding Program were screened for resistance to lima bean downy mildew, an important disease of lima beans in Delaware which is caused by *Phytophthora phaseoli*. Screening took place in field plots. Plants were screened for resistance to race F at the University of Delaware research farm at Georgetown and for resistance to race E at the University of Delaware research farm at Newark. Approximately 50 seeds of each line were planted in single-row plots in each location. The Newark location was planted on July 12, 2010 and the Georgetown location on July 7. Plants were inoculated three times during flowering. To encourage infection susceptible check varieties were planted in every fifth row within the plot and additional moisture was applied via misters timed to come on for four 15 minute intervals during the night. Plants were evaluated several times in September and October 2010 for disease reaction.

Results and Discussion
Yields differed significantly among the varieties in the trial this year, and overall, yields were higher than past years' trials. Weather conditions were hotter than average this season. The daytime high was over 90°F on 33 days, compared to an average of 16 days over 90°F for the 2007 through 2009 baby lima trials. The plants began flowering at the end of July, which is

typical for this trial. However, no pods set for approximately two weeks after flowering initiated because of sustained high temperatures. This resulted in an overall longer season and a more compressed harvest period for the varieties. A comparison days to harvest for three of the standard varieties for this year versus the historical average is as follows:

Variety	**Average DTH for 2006, 2007, 2008 & 2009 Trials**	**DTH for 2010 Trial**
Cypress	77	91
C-elite Select	84	96
184-85	86	95

Cypress was 14 days later than average, C-elite Select was 12 days later, and 184-85 was 9 days later. Despite obvious effects of heat on pod set, we did not see a split set in the vast majority of the varieties. G418274 and G422266 had a small second set that did not mature by harvest.

There were significant differences in yield among the 27 varieties in the trial. The highest yielding standard variety in the trial was C-elite Select, which had a significantly higher yield than the other standards: 184-85, M-15 and Cypress. The highest yielding experimental varieties in the trial were DE0505002A, DE0407907, G200381, DE0407906, DE0407905, DE0505002B, DE0407903, and GBL 26-04-DA; however none differed significantly in yield from C-elite Select. DE0505002A, DE0407907, G200381, DE0407906, DE0407905, DE0505002B, DE0407903 did have significantly higher yields than the other three standard varieties, 184-85, M-15 and Cypress. DE0505002A, the highest yielding variety in this year's trial, was also the highest yielding variety in the 2009 trial.

There were significant differences among the varieties in stand count at harvest (Table 1). None of the seed planted in the trial this year was treated. Low stand counts were probably partly to blame for low yields for several of the varieties including G417274, M-15, G700801, Cypress, G418274, G700809, and G422266.

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Table 1. Yield, Days to Harvest, Maturity at Harvest, Number of Pods per Plant, Plant Weight, Stand Count at Harvest, and Downy Mildew Disease Reactions for Entries in the 2010 Green Baby Lima Bean Variety Trial

Variety	Days to Harvest	Yield (Lbs/A)	% Full	% Flat	% Dry	# Pods/Plant	Plant Weight (Lbs/15 ft)	# Plants/15 ft[1]	Downy Mildew Resistance[2]	
									Race E	Race F
DE0505002A	95 abcdef	4683 a	92 a	4 cd	3 defg	43 a	24.3 ab	35 efg	R	S
DE0407907	97 a	4644 ab	92 a	4 cd	5 defg	40 a	25.8 a	40 abcdefg	S	R
G200381	94 def	4506 abc	91 a	2 cd	7 bcde	44 a	17.3 efghij	44 abc	?	?
DE0407906	95 abcd	4297 abcd	94 a	1 d	5 defg	44 a	25.8 a	44 ab	R	S
DE0407905	95 abcdef	4285 abcd	91 a	2 cd	8 bcd	37 a	15.6 ghijk	41 abcdef	S	S
DE0505002B	93 fgh	4265 abcd	95 a	2 cd	3 defg	45 a	20.6 bcde	36 bcdefg	S	S
GBL C-elite	96 ab	4133 abcde	89 a	3 cd	8 bcd	45 a	22.3 abcd	35 fg	R	S
DE0407903	93 efgh	4112 abcde	91 a	2 cd	7 cdef	42 a	19.2 cdefgh	45 a	S	R
GBL 26-04-DA	94 cdef	3782 abcdef	90 a	2 cd	8 abcd	35 a	18.5 defghi	45 a	?	?
DE0407911	96 abc	3779 bcdef	92 a	4 cd	4 defg	37 a	23.6 abc	43 abcd	S	R
DE0407902	94 cdef	3743 bcdef	93 a	2 cd	5 defg	40 a	18.0 defghi	43 abcde	S	R
DE0407910	94 cdef	3728 cdef	90 a	2 cd	7 bcde	43 a	18.0 defghi	36 cdefg	R	S
DE0505004A	93 defg	3699 cdef	85 a	3 cd	11 ab	40 a	18.2 defghi	43 abcd	S	S
DE0402701	95 abcdef	3690 cdef	87 a	2 cd	11 abc	44 a	20.1 bcdefg	37 bcdefg	S	S
GBL 25-04-DA	94 bcdef	3589 defg	84 a	3 cd	12 a	37 a	19.0 cdefgh	42 abcdef	?	?
GBL 24-04-DA	94 def	3396 defg	84 a	9 abc	8 abcd	42 a	20.2 bcdefg	38 abcdefg	?	?
GBL 21-04-DA	95 abcde	3336 efgh	89 a	7 abcd	4 defg	34 a	18.8 defghi	41 abcdef	?	?
DE0401711	94 cdef	3283 efghi	89 a	3 cd	7 bcde	42 a	18.6 defghi	35 efg	R	S
G700805	91 hi	3178 fghi	89 a	9 abc	2 efg	44 a	17.8 defghi	33 gh	?	?
GBL 184-85	95 abcd	3119 fghi	91 a	3 cd	6 defg	40 a	20.5 bcdef	36 defg	R	S
G417274	91 ghi	2905 fghi	90 a	4 cd	6 defg	48 a	16.0 fghijk	27 hi	?	?
M-15	94 def	2887 fghi	92 a	6 bcd	2 g	47 a	14.4 ijk	25 i	S	R
G700801	91 hi	2781 ghij	87 a	8 abcd	5 defg	61 a	16.1 efghijk	21 i	?	?
Cypress	91 ghi	2489 hij	89 a	9 abc	2 fg	44 a	14.8 hijk	24 i	R	S
G418274	90 ij	2433 ij	79 a	14 ab	7 bcdef	46 a	15.3 hijk	24 i	?	?
G700809	89 jk	1909 jk	89 a	8 abcd	3 defg	43 a	12.7 k	23 i	?	?
G422266	88 k	1311 k	83 a	14 a	3 defg	43 a	12.7 jk	20 i	?	?
p-value	***<0.0001***	***<0.0001***	***0.1167***	***0.0262***	***0.0006***	***0.3745***	***<0.0001***	***<0.0001***		
LSD	**2.16**	**902.65**	**NA**	**7.49**	**4.84**	**NA**	**4.60**	**7.89**		

[1] Seeding rate was 4 seeds/ft

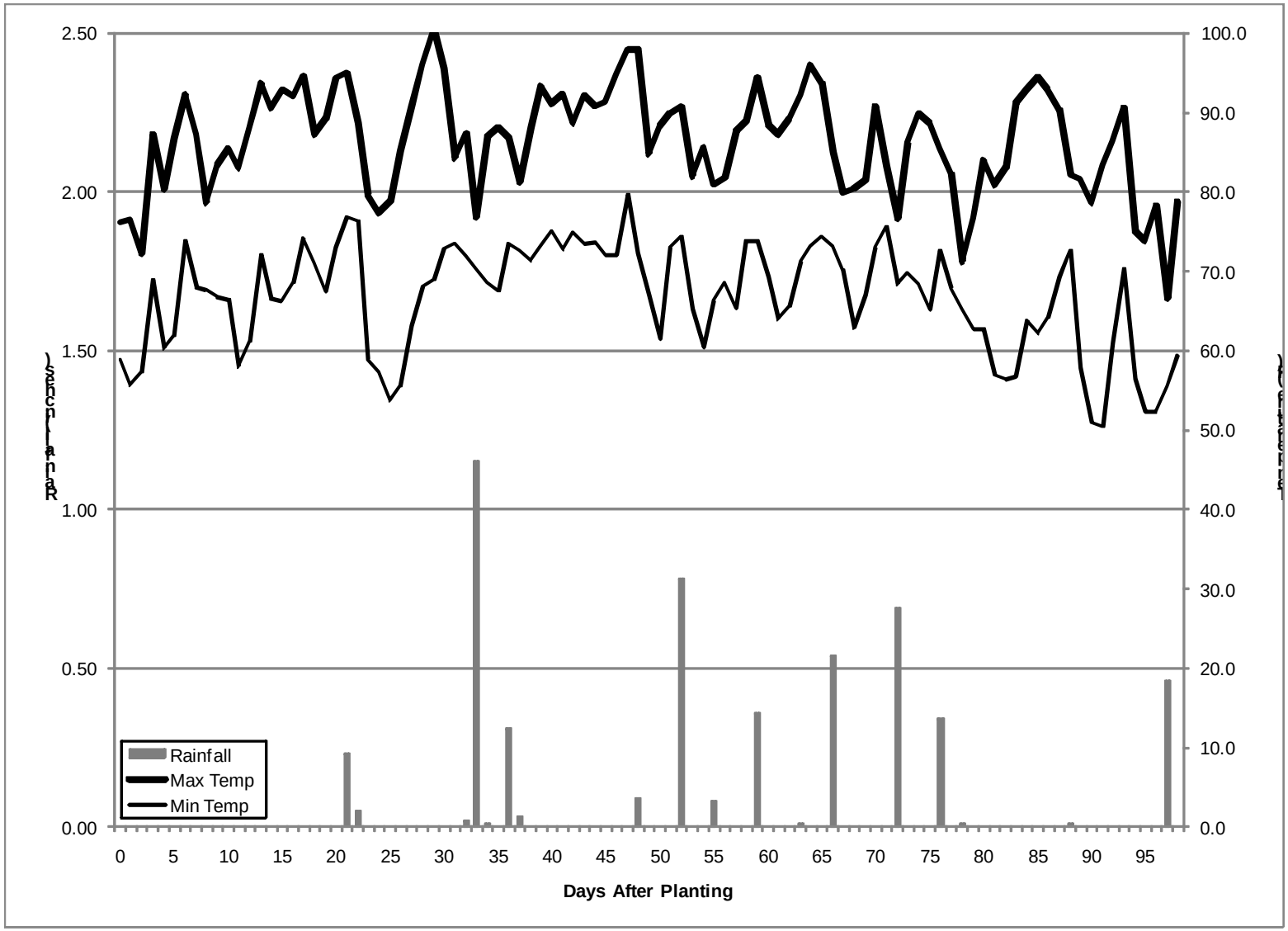
[2] Resistance to lima bean downy mildew (*Phytophthora phaseoli*) R=resistant, S=susceptible, ?=disease reaction unknown

Appendix A: Weather Data for 2010 Green Baby Lima Variety Trial
June 7th (planting) to September 13th (final harvest)

DAP	Date	Max Temp °F	Min Temp °F	Rainfall (in.)
0	**7-Jun**	76.10	58.9	0
1	**8-Jun**	76.50	55.7	0
2	**9-Jun**	72.30	57.3	0
3	**10-Jun**	87.20	68.8	0
4	**11-Jun**	80.30	60.2	0
5	**12-Jun**	86.60	61.9	0
6	**13-Jun**	92.40	73.8	0
7	**14-Jun**	87.30	68	0
8	**15-Jun**	78.60	67.7	0
9	**16-Jun**	83.30	66.7	0
10	**17-Jun**	85.50	66.5	0
11	**18-Jun**	82.90	57.9	0
12	**19-Jun**	88.10	61.2	0
13	**20-Jun**	93.70	72	0
14	**21-Jun**	90.50	66.6	0
15	**22-Jun**	92.80	66.3	0
16	**23-Jun**	91.90	68.5	0
17	**24-Jun**	94.70	74.1	0
18	**25-Jun**	87.30	71	0
19	**26-Jun**	89.10	67.4	0
20	**27-Jun**	94.30	73	0
21	**28-Jun**	94.90	76.8	0.23
22	**29-Jun**	88.60	76.3	0.05
23	**30-Jun**	79.70	58.9	0
24	**1-Jul**	77.40	57.3	0
25	**2-Jul**	78.80	53.7	0
26	**3-Jul**	85.10	55.4	0
27	**4-Jul**	90.70	63	0
28	**5-Jul**	96.00	68	0
29	**6-Jul**	100.50	68.9	0
30	**7-Jul**	95.50	72.8	0
31	**8-Jul**	84.30	73.4	0
32	**9-Jul**	87.40	71.8	0.02
33	**10-Jul**	76.90	70.3	1.15
34	**11-Jul**	86.90	68.5	0.01
35	**12-Jul**	88.10	67.5	0
36	**13-Jul**	86.80	73.5	0.31
37	**14-Jul**	81.30	72.5	0.03
38	**15-Jul**	88.10	71.3	0
39	**16-Jul**	93.40	73.2	0
40	**17-Jul**	91.10	75.1	0
41	**18-Jul**	92.30	72.8	0
42	**19-Jul**	88.60	74.9	0
43	**20-Jul**	92.20	73.4	0
44	**21-Jul**	90.70	73.6	0
45	**22-Jul**	91.20	72.1	0
46	**23-Jul**	94.80	72.1	0
47	**24-Jul**	97.90	79.7	0

DAP	Date	Max Temp °F	Min Temp °F	Rainfall (in.)
48	**25-Jul**	97.90	72.2	0.09
49	**26-Jul**	84.70	66.9	0
50	**27-Jul**	88.30	61.5	0
51	**28-Jul**	89.80	72.9	0
52	**29-Jul**	90.80	74.4	0.78
53	**30-Jul**	81.90	65.1	0
54	**31-Jul**	85.70	60.4	0
55	**1-Aug**	80.90	66.3	0.08
56	**2-Aug**	81.80	68.5	0
57	**3-Aug**	87.50	65.3	0
58	**4-Aug**	88.80	73.8	0
59	**5-Aug**	94.40	73.8	0.36
60	**6-Aug**	88.50	69.2	0
61	**7-Aug**	87.20	64	0
62	**8-Aug**	89.20	65.6	0
63	**9-Aug**	92.20	71.1	0.01
64	**10-Aug**	96.10	73.1	0
65	**11-Aug**	93.70	74.4	0
66	**12-Aug**	85.00	73.1	0.54
67	**13-Aug**	79.80	70.1	0
68	**14-Aug**	80.40	62.9	0
69	**15-Aug**	81.40	67	0
70	**16-Aug**	90.70	73	0
71	**17-Aug**	83.20	75.5	0
72	**18-Aug**	76.60	68.3	0.69
73	**19-Aug**	86.10	69.7	0
74	**20-Aug**	89.90	68.4	0
75	**21-Aug**	88.70	65.1	0
76	**22-Aug**	85.50	72.5	0.34
77	**23-Aug**	82.30	67.8	0
78	**24-Aug**	71.20	65.2	0.01
79	**25-Aug**	76.60	62.8	0
80	**26-Aug**	84.10	62.7	0
81	**27-Aug**	80.90	56.9	0
82	**28-Aug**	83.00	56.3	0
83	**29-Aug**	91.10	56.7	0
84	**30-Aug**	92.80	63.8	0
85	**31-Aug**	94.40	62.2	0
86	**1-Sep**	92.90	64.2	0
87	**2-Sep**	90.30	69.3	0
88	**3-Sep**	82.10	72.5	0.01
89	**4-Sep**	81.60	57.7	0
90	**5-Sep**	78.50	50.9	0
91	**6-Sep**	83.30	50.4	0
92	**7-Sep**	86.40	61	0
93	**8-Sep**	90.60	70.3	0
94	**9-Sep**	75.00	56.4	0
95	**10-Sep**	73.80	52.3	0
96	**11-Sep**	78.30	52.3	0
97	**12-Sep**	66.60	55.4	0.46
98	**13-Sep**	78.70	59.3	0

Appendix B: Weather Conditions During 2010 Green Baby Lima Variety Trial June 7th (planting) to September 13th (final harvest)



Fordhook Lima Bean Variety Trial

The 2010 Lima Bean Variety Trial included a total of 29 lines. Twenty-eight of the lines were from the University of Delaware lima bean breeding program. Concentrated Fordhook was the check for the trial. The purpose of this trial is to evaluate advanced Fordhook breeding lines for yield, maturity, and quality under Delaware growing conditions.

Varieties Entered in the 2010 Delaware Green Baby Lima Bean Variety Trial

Variety Name	Company
Concentrated Fordhook	Check (Charter Seed)
DE0501102A	University of Delaware
DE0501102B	University of Delaware
DE0501103A	University of Delaware
DE0501201A	University of Delaware
DE0503703A	University of Delaware
DE0504101D	University of Delaware
DE0504102A	University of Delaware
DE0504102B	University of Delaware
DE0504103A	University of Delaware
DE0504103B	University of Delaware
DE0504103C	University of Delaware
DE0600101A	University of Delaware
DE0600101D	University of Delaware
DE0600101E	University of Delaware
DE0600102B	University of Delaware
DE0600104A	University of Delaware
DE0600601A	University of Delaware
DE0600601B	University of Delaware
DE0600601D	University of Delaware
DE0600602B	University of Delaware
DE0600602C	University of Delaware
DE0600602D	University of Delaware
DE0600603B	University of Delaware
DE0600605A	University of Delaware
DE0600605C	University of Delaware
DE0601001A	University of Delaware
DE0601001B	University of Delaware
DE0601001D	University of Delaware

Location:
Field 2B at the University of Delaware Research and Education Center Farm, Georgetown, DE

Cultural Practices:
The trial was hand planted on June 28, 2010 into rows run with a Monosem planter. Only the Concentrated Fordhook seed was treated. Varieties were planted in one-row plots with 30 inch between row spacing and 6 inch in-row spacing. Plots were 10 feet in length. Plots were arranged in a randomized complete block design with three replications. Three of the varieties were not replicated because insufficient seed was available (DE0600605C, DE0504101D and DE0504102A). The field was fertilized according to soil test results. Pre-emergence herbicides (0.75 oz/A Sandea + 1.0 pint/A Dual II Magnum) were applied on June 29, 2010 as well as 40 lbs/A nitrogen in the form of 30% UAN. Plots were cultivated on August 4, 2010 and sidressed with 33 lbs/A nitrogen in the form of 30% UAN. Additional hand weeding was done in mid-August. Weed control in the trial was excellent. Plots were irrigated, when necessary, with a traveling, linear system. Warrior at 4 oz/A was applied for insect control on 8-20. No applications were made for disease control.

Harvest:
As harvest approached, plants were visually evaluated for maturity and plots were harvested when the majority of the pods were filled. Not all replications for a variety were harvested on the same day. There were significant differences between the varieties in percent dry pods at harvest, however there were not significant differences between the percent full pods or the percent flat pods (Table 2). Harvest began on September 29 (93 DAP) and ended on October 11 (105 DAP).

A 5 to 8 foot section from each plot was harvested. The plants were cut off at soil level and weighed. To pods were stripped from the harvested plants from each plot and counted as full, flat or dry. The pulled pods were shelled in a Model 520 "TaMaCo" huller from Taylor Manufacturing Co., Inc., Moultrie, GA. Any remaining trash was removed from the shelled beans by hand and the cleaned beans were weighed to determine yield.

Results and Discussion
Seedling emergence in this trial was poor due to soil crusting and final stands were less than 50% for 19 of the varieties. As is typical for limas, however, the plants did compensate for reduced stand to some degree; low stand was not necessarily associated with low yield, nor were better stands always associated with higher yields. With the exception of Concentrated Fordhook, all of the seed for the trial was produced in the greenhouse in winter 2009/2010. Consequently, any significant differences in final stand between the lines are interpreted as differences in seedling vigor between the varieties. The most vigorous of the breeding lines were DE0601001B, DE0501201A, DE0601001D, DE0600605A, DE0600101A, and DE0600101D.

There were significant differences in yield among the varieties in the trial. The standard variety, Concentrated Fordhook, produced a higher yield (3628 lbs/A) than in the 2009 Baby Lima Trial (1234 lbs/A), but not as high as its yield in the 2008 trial (3863 lbs/A). There were significant differences in yield among the varieties that were replicated, however only two lines

(DE0504103C and DE0600102B) had significantly higher yields than the standard, Concentrated Fordhook.

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Brian Hearn and the REC Farm Crew for help with field operations.

Table 2. Days to Harvest, Yield, Maturity at Harvest, Number of Pods per Plant, Pods per Row-Foot, Plant Weight, Stand Count at Harvest, for Entries in the 2010 Fordhook Lima Bean Variety Trial

Variety	Days to Harvest	Yield (Lbs/A)	% Full	% Flat	% Dry	# Pods/Plant	# Pods/Row Foot	Plant Weight (Lbs/8 ft)	# Plants/10 ft[1]
DE0600605C[2]	99	5960	83	14	3	43	25	9.7	4
DE0504103C	99 cd	5298 a	88 a	9 a	3 cde	38 a	33 a	10.7 cd	4 h
DE0600102B	95 efg	4939 ab	72 a	9 a	19 a	24 bcdef	27 a	9.8 cde	9 abcdef
DE0600101A	95 efg	4830 abc	90 a	6 a	4 bcde	22 bcdefg	25 a	11.5 abc	11 abcd
DE0600104A	100 bcd	4753 abcd	78 a	12 a	10 bc	23 bcdefg	28 a	13.7 ab	9 abcdef
DE0600601D	100 bcd	4532 abcde	75 a	19 a	6 bcde	26 bcd	25 a	10.1 cd	7 fgh
DE0600602C	95 efg	4491 abcde	82 a	17 a	1 e	21 cdefg	27 a	14.3 a	10 abcde
DE0600602B	97 defg	4301 abcdef	80 a	13 a	8 bcde	25 bcde	30 a	10.3 cd	9 abcdef
DE0504103B[2]	100	4235	75	24	1	34	38	15.7	4
DE0600101D	94 fg	4193 abcdef	79 a	18 a	2 cde	25 bcde	31 a	11.5 abc	11 abc
DE0501103A	99 cd	4151 abcdef	73 a	20 a	7 bcde	16 efg	24 a	10.7 bcd	7 efgh
DE0601001D	103 abc	4142 abcdef	81 a	13 a	6 bcde	15 g	24 a	11.3 abcd	11 abc
DE0504101D	95	4110	93	6	1	34	34	15.5	8
DE0601001B	95 efg	4075 abcdefg	69 a	19 a	12 ab	21 defg	29 a	11.3 abc	12 a
DE0600101E	94 g	4036 abcdefg	83 a	15 a	3 cde	31 ab	29 a	10.5 cd	8 cdefg
DE0504102A[2]	99	4026	69	25	5	34	27	8.5	5
DE0600601B	102 abc	4007 abcdefg	77 a	15 a	8 bcde	24 bcdef	28 a	11.5 abc	7 fgh
DE0504103A	93 g	3992 bcdefg	80 a	13 a	7 bcde	30 abc	31 a	10.1 cd	9 bcdef
DE0601001A	100 bcd	3980 bcdefg	67 a	24 a	9 bcde	20 defg	24 a	12.1 abc	10 abcdef
DE0600605A	94 g	3822 bcdefg	77 a	16 a	6 bcde	18 defg	26 a	10.2 cd	11 abc
DE0501102A	103 abc	3712 bcdefg	75 a	22 a	3 cde	24 bcdef	35 a	10.0 cd	8 cdefg
DE0600603B	95 efg	3633 cdefg	65 a	31 a	5 bcde	18 defg	22 a	10.1 cd	9 abcdef
Concentrated FH	98 de	3628 cdefg	77 a	14 a	9 bcd	16 fg	21 a	11.2 bcd	12 ab
DE0600602D	95 efg	3457 defg	88 a	10 a	2 de	24 bcdefg	20 a	10.3 cd	8 defg
DE0501201A	94 fg	3293 efgh	78 a	19 a	2 cde	18 defg	27 a	11.4 abc	12 ab
DE0504102B	96 defg	3170 fgh	81 a	17 a	2 cde	25 bcde	22 a	10.6 cd	7 efgh
DE0501102B	98 def	2831 gh	83 a	13 a	4 bcde	22 cdefg	23 a	6.8 f	10 abcdef
DE0600601A	104 a	2035 hi	61 a	29 a	10 bc	16 efg	18 a	8.2 def	9 abcdef
DE0503703A	103 ab	1328 i	74 a	19 a	7 bcde	17 defg	17 a	6.9 ef	5 gh
p-value	***<0.0001***	***<0.0001***	***0.0653***	***0.2261***	***0.0148***	***0.0007***	***0.1758***	***0.0044***	***0.0010***
LSD	**3.99**	**1303.70**	**NA**	**NA**	**7.87**	**8.89**	**NA**	**3.03**	**3.65**

[1] Seeding rate was 2 seeds/ft; [2] Lines not replicated in the trial due to insufficient seed

Appendix C: Weather Data for 2010 Fordhook Lima Variety Trial
June 28th (planting) to October 11th (final harvest)

DAP	Date	Max Temp °F	Min Temp °F	Rainfall (in.)
0	**28-Jun**	94.9	76.8	0.23
1	**29-Jun**	88.6	76.3	0.05
2	**30-Jun**	79.7	58.9	0
3	**1-Jul**	77.4	57.3	0
4	**2-Jul**	78.8	53.7	0
5	**3-Jul**	85.1	55.4	0
6	**4-Jul**	90.7	63.0	0
7	**5-Jul**	96.0	68.0	0
8	**6-Jul**	100.5	68.9	0
9	**7-Jul**	95.5	72.8	0
10	**8-Jul**	84.3	73.4	0
11	**9-Jul**	87.4	71.8	0.02
12	**10-Jul**	76.9	70.3	1.15
13	**11-Jul**	86.9	68.5	0.01
14	**12-Jul**	88.1	67.5	0
15	**13-Jul**	86.8	73.5	0.31
16	**14-Jul**	81.3	72.5	0.03
17	**15-Jul**	88.1	71.3	0
18	**16-Jul**	93.4	73.2	0
19	**17-Jul**	91.1	75.1	0
20	**18-Jul**	92.3	72.8	0
21	**19-Jul**	88.6	74.9	0
22	**20-Jul**	92.2	73.4	0
23	**21-Jul**	90.7	73.6	0
24	**22-Jul**	91.2	72.1	0
25	**23-Jul**	94.8	72.1	0
26	**24-Jul**	97.9	79.7	0
27	**25-Jul**	97.9	72.2	0.09
28	**26-Jul**	84.7	66.9	0
29	**27-Jul**	88.3	61.5	0
30	**28-Jul**	89.8	72.9	0
31	**29-Jul**	90.8	74.4	0.78
32	**30-Jul**	81.9	65.1	0
33	**31-Jul**	85.7	60.4	0
34	**1-Aug**	80.9	66.3	0.08
35	**2-Aug**	81.8	68.5	0
36	**3-Aug**	87.5	65.3	0
37	**4-Aug**	88.8	73.8	0
38	**5-Aug**	94.4	73.8	0.36
39	**6-Aug**	88.5	69.2	0
40	**7-Aug**	87.2	64.0	0
41	**8-Aug**	89.2	65.6	0
42	**9-Aug**	92.2	71.1	0.01
43	**10-Aug**	96.1	73.1	0
44	**11-Aug**	93.7	74.4	0
45	**12-Aug**	85.0	73.1	0.54
46	**13-Aug**	79.8	70.1	0
47	**14-Aug**	80.4	62.9	0

DAP	Date	Max Temp °F	Min Temp °F	Rainfall (in.)
48	**15-Aug**	81.4	67.0	0
49	**16-Aug**	90.7	73.0	0
50	**17-Aug**	83.2	75.5	0
51	**18-Aug**	76.6	68.3	0.69
52	**19-Aug**	86.1	69.7	0
53	**20-Aug**	89.9	68.4	0
54	**21-Aug**	88.7	65.1	0
55	**22-Aug**	85.5	72.5	0.34
56	**23-Aug**	82.3	67.8	0
57	**24-Aug**	71.2	65.2	0.01
58	**25-Aug**	76.6	62.8	0
59	**26-Aug**	84.1	62.7	0
60	**27-Aug**	80.9	56.9	0
61	**28-Aug**	83.0	56.3	0
62	**29-Aug**	91.1	56.7	0
63	**30-Aug**	92.8	63.8	0
64	**31-Aug**	94.4	62.2	0
65	**1-Sep**	92.9	64.2	0
66	**2-Sep**	90.3	69.3	0
67	**3-Sep**	82.1	72.5	0.01
68	**4-Sep**	81.6	57.7	0
69	**5-Sep**	78.5	50.9	0
70	**6-Sep**	83.3	50.4	0
71	**7-Sep**	86.4	61.0	0
72	**8-Sep**	90.6	70.3	0
73	**9-Sep**	75.0	56.4	0
74	**10-Sep**	73.8	52.3	0
75	**11-Sep**	78.3	52.3	0
76	**12-Sep**	66.6	55.4	0.46
77	**13-Sep**	78.7	59.3	0
78	**14-Sep**	82.3	55.6	0
79	**15-Sep**	80.0	52.3	0
80	**16-Sep**	87.0	59.6	0.01
81	**17-Sep**	80.4	63.5	0.09
82	**18-Sep**	77.1	53.0	0
83	**19-Sep**	83.9	50.5	0
84	**20-Sep**	76.4	55.8	0
85	**21-Sep**	79.8	44.9	0
86	**22-Sep**	87.7	61.3	0
87	**23-Sep**	91.0	65.0	0
88	**24-Sep**	94.5	67.8	0
89	**25-Sep**	89.0	69.5	0
90	**26-Sep**	75.0	65.8	0.08
91	**27-Sep**	77.0	66.4	1.7
92	**28-Sep**	78.5	66.5	0.13
93	**29-Sep**	70.4	60.7	0.07
94	**30-Sep**	79.6	70.2	1.48
95	**1-Oct**	76.5	55.7	1.4
96	**2-Oct**	68.8	47.4	0
97	**3-Oct**	60.2	47.6	0.89
98	**4-Oct**	57.4	50.8	0.21
99	**5-Oct**	59.3	46.7	0

DAP	Date	Max Temp °F	Min Temp °F	Rainfall (in.)
100	**6-Oct**	62.2	41.6	0
101	**7-Oct**	73.3	50.6	0
102	**8-Oct**	75.2	48.3	0
103	**9-Oct**	79.3	53.1	0
104	**10-Oct**	78.7	48.2	0
105	**11-Oct**	85.4	60.1	0

Appendix D: Weather Conditions During 2010 Fordhook Variety Trial June 28th (planting) to October 11th (final harvest)