OREGON VEGETABLE Digest

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Picking Interval Affects Pole Bean Yield

To obtain highest returns it is important for pole bean growers to have good grades as well as high yields. Intervals at which beans are picked influence the percentage of beans in the various sieve sizes.

Effects of three picking intervals on yield and grades of FM-1 stringless Blue Lake pole beans was studied in an experiment at Corvallis during the 1957 season. Picking intervals were 2 to 3 days, 4 to 5 days, and 7 days, with the same fertilizers, stand levels, and irrigations being used. Picking was closely supervised and beans were picked to a fairly small size on all plots. The 2- to 3-day interval plots were picked 16 times; the 4- to 5-day interval, 8 times; and the 7-day interval, 6 times. Beans were graded into sieve sizes 1 through 7 following harvest.

Yields, grades, and values as influenced by picking intervals are presented in tables 1 and 2. With existing weather and picking conditions of the season the 7-day interval treatment resulted in higher yields and values than either of the other treatments. The 7-day interval treatment resulted in a yield approximately 2.5 tons higher than the 2- to 3-day interval, and about 1.2 tons higher than the 4- to 5-day interval. Net returns ranked in the same order as yields (table 2).

A very high percentage of yield was Grade 1 for the 2- to 3-day picking interval treatment. Under conditions of this experiment the 7-day interval treatment had a good grade-out with

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Horticultural Society to Meet December 5 and 6

The 72nd annual meeting of the Oregon State Horticultural Society will be held in Corvallis, December 5 and 6, under the leadership of President Ross Hukari of Hood River.

This year, morning time will be devoted to sectional meetings as well as general sessions. Programs for the vegetable section are being planned under the leadership of Chairman Bob Ohling, of Salem.

Commercial and educational exhibits will be included, and a banquet will be held.

Remember the dates
December 5 and 6

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Pole Bean Yield... (Continued from page 1)

over 50% of the yield in Grade 1. (These grades are higher than average for our experimental plots.) Frequent picking every 2 to 3 days evidently reduced yield. This lower yield cut net returns even though grades were very good. On the other hand, the 7-day interval treatment produced the highest yield and although grades were not as good as with the other treatments the increased yield did result in higher returns.

These results are for one season only and different results may be expected in another season. Problems concerning supervision and pay for pickers would also have to be considered in determining the best picking interval for pole beans.

Table 1. Yield and Grades of FM-1 Pole Beans as Affected by Picking Intervals.

Picking interval	Tons per acre		Tons per acre in grades*			
	Ungraded	Graded	1	2	3	4
2-3 days	9.0	8.7	7.62	0.71	0.31	0.06
4-5 days	10.5	9.9	7.32	1.62	0.74	0.22
7 days	11.7	11.2	6.33	3.01	1.37	0.49

* Grade 1 - Sieve sizes 1, 2, 3; Grade 2 - Sieve size 4; Grade 3 - Sieve size 5; Grade 4 - Sieve sizes 6 and over.

Table 2. Picking Interval Effects on Grades and Value of Pole Beans.*

Picking interval	Grades								Total value	Picking cost	Net
	1		2		3		4				
	%	$	%	$	%	$	%	$	$	$	$
2-3 days	87.6	1295.	8.2	106.	3.6	29.	0.6	4.	1434.	540.	894.
4-5 days	73.9	1244.	16.4	243.	7.5	70.	2.2	15.	1572.	630.	942.
7 days	56.5	1076.	26.9	451.	12.2	130.	4.4	32.	1689.	702.	987.

* Value based on $170 per ton for Grade 1; $150 per ton for Grade 2; $95 per ton for Grade 3; and $65 for Grade 4. Picking cost - $60 per ton.

--H. J. Mack
Horticulture Department

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Register Irrigation Wells

Anyone using well water for irrigating should carefully note this information.

Under the Ground Water Act of 1955, persons using wells for irrigation purposes prior to August 3, 1955 in western Oregon and May 20, 1927 in eastern Oregon, have a vested right and are given the opportunity to claim this right by registering their wells with the State Engineer before August 3, 1958.

Lewis Stanley, State Engineer, estimates that considerably less than one-half the eligible wells have been registered so far.

Failure to register prior to August 3, 1958, is interpreted as abandonment of any priority claim. This could eventually cost present irrigators their right to use the well water for irrigation purposes. There already have been reports of wells going dry and water tables lowering in isolated cases. As ground water supplies become more completely developed, this situation will probably spread to other areas and there may not be enough water to go around.

Contact the State Engineer, Salem, Oregon, immediately, for forms and instructions on how to register your well. His office is located on the third floor of the building just east of the Capitol Building.

--Marvin N. Shearer
Irrigation Specialist

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Reports From National Hort. Meeting

The 54th annual meeting of the American Society for Horticultural Science was held August 26-29 at Stanford University, Palo Alto, California.

Here are a few "vegetable" highlights of papers presented by horticultural scientists from various sections of the country:

Margaret M. and J. W. Lesley of the University of California reported that radio-isotope P^{32} was useful in obtaining male sterile tomatoes, of possible use for more efficient production of F_1 hybrid tomato seed.

T. Moulton, Purdue, reported inheritance of resistance to fruit cracking in tomatoes to be of moderate complexity, and also indicated that fruit size may not be associated with cracking.

From Missouri, Lambeth reported on promising, disease resistant, greenhouse forcing tomatoes and Soost and Smith of California presented data on resistance to tobacco mosaic virus in the tomato. The tomato continues to be one of the most popular "guinea pigs" of plant scientists.

C. E. Peterson and J. L. Weigle showed that a line of cucumbers producing female plants (only female flowers) may be highly useful in hybrid seed production.

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Report From National Meet... (Continued from page 3)

From Michigan, P. M. Bessey and R. L. Carolus reported bitterness in carrots to be associated with maturity, packaging, and storage temperature, as well as variety and strain differences.

R. L. Sawyer and S. L. Dallyn of Cornell showed that ionizing radiation could be used to control sprouting of onions, although dark growth (growing sprout) centers will develop, and further work is contemplated in attempting to control this undesirable effect.

A. E. Thompson of Illinois reported that a high pigment tomato was promising for improved color and consistency of puree.

From Cornell, Oyer and Minges reported severe losses to growers in New York from premature heading of broccoli in 1956. Temperature and light effects on development of broccoli were studied in greenhouses. Relatively low temperatures and long days contributed to earlier heading.

From Oregon State, Harry Mack reported on basal defoliation of beans; Jim Baggett on disease resistance in beans; and W. A. Frazier on hybridization of bush and pole beans.

J. H. Kyle of Washington State reported "open micropyle," as well as hard seed coat, as important factors in early germination of bean seeds.

S. H. Wittwer and M. J. Bukovac reported that induction of flowering and seed production in biennials in the absence of the usual requisite cold had been achieved in beets, carrots, collards, kale, rutabagas, turnips, and several flower crops in Michigan by the use of Gibberellin.

A positive relationship between tomato yields and percentage of water soluble phosphorus in the fertilizers was found in a test by G. A. Bradley and J. W. Fleming of the University of Arkansas.

The highest total yield of pickling cucumbers resulted from a 6-inch spacing in the row as compared to 12, 18, and 24 inches, in rows 5 feet apart in Michigan according to experiments conducted by S. K. Ries.

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Staff Changes...

Vern Clarkson has accepted a research position with the Bakelite Corporation in North Carolina and will be leaving about October 15. Clarkson has been doing research on paper and polyethylene mulches for horticultural crops during the past 3 years.

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Dr. Garvin Crabtree should arrive about November 1, 1957, from Cornell University to fill the position in weed control research formerly held by Roland Laning. He will be responsible for weed control work in vegetable crops, small fruits, and other phases of horticulture.

Blue Lake Pole, Bush Bean Quality Compared

Quality of snap beans is largely determined by varietal characteristics and stage of maturity. However, moisture levels, fertilizer levels, and weather may also influence such quality factors as color, shape, and fibrousness. With increasing maturity both seed content and fiber increase.

Most regular bush beans develop a tough, fibrous sheath in the pod wall as the bean matures. Pods of the new Blue Lake-type hybrids are typically fleshy, low in percent seed, and largely free from a fibrous sheath in pod walls.

While characteristically low fiber and percent seed contents are present in many new varieties of regular bush beans, few approach the levels of Blue Lake hybrids. Since the quality standard of the Food and Drug Administration sets definite limits on percent fiber and seeds, this is an important characteristic to develop. The substandard limits are 15% for fiber and 25% for seed.

Many commercial lines and varieties tested in the variety testing program during recent years attain a fiber limit at low seed percentages. Thus, percent seed does not always correlate with fiber. Hot, dry weather rapidly increases the fiber content of bush beans. Also, fiber content varies from year to year, usually because of weather.

Even though results of this year's work are not complete it was felt that this information would be of interest now to bush bean growers and processors. It is difficult to evaluate data on a group of hybrids because of differences in date of maturity, pod size ranges peculiar to individual selections, and pod shapes. Since all factors affecting quality of selections have not been pooled and evaluated, this report is confined to comparing the percent fiber and seed of two groups of bush beans.

A representative cross section of the two groups is presented in the table. In all instances the beans were graded for size, after which sizes 3, 4, and 5 were composited for processing. Fiber content would ordinarily be higher in bush beans to obtain as large a picking as possible. In pole beans, pickings are as frequent as possible to keep the sieve size small. Therefore, we would normally expect the fiber content of bush beans to be slightly higher, even though inherent characters of both types may be similar, except in factors controlling the pole versus bush habit.

New Blue Lake-type bush beans develop very little fiber even in the larger sizes, compared to regular bush beans. The optimum stage of maturity for bush beans seems to occur when seed percentages reach about 4%. Because fiber content limits quality in most bush beans, these new Blue Lake lines are acceptable even in larger sizes.

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Vegetable Note...

W. W. Hare of Mississippi State College reported in Phytopathology (Vol. 47) that resistance to root-knot nematodes in peppers is controlled by a single genetic factor. Santanka x S and 405B-Mexico were resistant varieties used in his study and crossed with several commercial bell pepper varieties.

Blue Lake Bean Quality Compared... (Continued from page 5)

Regular bush beans			Blue Lake-type bush beans		
Variety or number	Seed	Fiber	Variety or number	Seed	Fiber
	Percent	Percent		Percent	Percent
King Green	5.06	.0558	411 (197)	5.55	.0199
Northrup-King #103	4.40	.0874	836	5.49	.0157
Wadex	6.15	.0972	538	6.03	.0198
B-3076 (USDA)	4.79	.0663	415 (194)	5.11	.0407
Green Pod #91	8.99	.0956	669	4.01	.0401
B-3034 (USDA)	2.83	.0981	816	4.01	.0361
Corneli 14	2.66	.0373	709	4.81	.0498
B-2135-4-5 (USDA)	6.53	.1526	820	5.43	.0388
Woodruff Stringless Whiteseeded	6.73	.0718	549	3.87	.0180
Blue Lake Pole Beans					
FM-1	3.16	.0303			
FM-1-1	3.08	.0270			

As shown by percentage of seed, the bush beans, when compared to pole beans, were allowed to develop more of the larger sizes before harvest. However, fiber content of Blue Lake-type bush beans is comparable to pole beans.

In future studies, more detailed comparisons involving individual sieve sizes will be possible.

--W. A. Sistrunk
Food and Dairy Technology Dept.
W. A. Frazier
--Horticulture Dept.

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Move to Cordley Hall Completed

Experiment Station entomologists, plant pathologists, and horticulturists are now housed in Cordley Hall, the new Agricultural Biological Science building. This building is located on Campus Way, just north of the Farm Crops building and east of Withycombe Hall and the old greenhouses.

Entomology is located in the center of the new building, on all four floors. The main office is on the second floor while first floor is devoted to an expanded program in insect toxicology.

Horticulture is located on all four floors of the north wing, with the main office on the second floor.

Plant Pathology occupies the south wing with the main office on the second floor.

Names, room numbers, and telephone numbers follow for staff members in each department who deal with horticultural crops.

DEPARTMENT OF ENTOMOLOGY

		Room No.	Phone No.
Ritcher, Paul O.	Department Head	233	343
Every, R. W.	Extension Entomologist	224	721
Crowell, H. H.	Vegetable Insects	222	721
Morrison, H. E.	Soil Insects, Symphylids	220	721
Terriere, L. C.	Insect Toxicology	124	722
Stephen, W. P.	Pollination, Bees	417B	723
Rosenstiel, R. G.	Small Fruit Pests	438	724
Jones, S. C.	Tree Fruit Insects	231	725
Swenson, K. G.	Insects of Ornamentals Greenhouse Crops	218	725

DEPARTMENT OF HORTICULTURE

		Room No.	Phone No.
Apple, S. B., Jr.	Department Head	242B	335
Compton, O. C.	Tree Fruits	454	719
Hansen, Elmer	Tree Fruits and Storage	450	719
Hartman, Henry	Tree Fruits and Storage	448	719
Zielinski, Q. B.	Tree Fruits	452	719
Frazier, Wm. A.	Vegetable Crops	340	320
Mack, Harry	Vegetable Crops	346	320
Baggett, J. R.	Vegetable Crops	344	320
Roberts, A. N.	Ornamentals	352	718
Blaney, L. T.	Ornamentals	350	718
Clarkson, V. A.	Small Fruits (Plastics)	354	718
Wadsworth, S. E.	Floriculture	232	717
Lagerstedt, Harry	Small Fruits	136	717
Clark, R. R.	Ext. Horticulturist	148	278 or 279
Rawlings, C. O.	Ext. Horticulturist	150	278 or 279
Painter, J. H.	USDA	138	336
Waldo, George	USDA	144	336

Move to Cordley Hall Completed... (Continued from page 7)

DEPARTMENT OF BOTANY AND PLANT PATHOLOGY

		Room No.	Phone No.
Dietz, S. M.	Department Head	206	339
Belkengren, R. O.	Tree Fruits	216	340
Cameron, H. R.	Tree Fruits	205	341
Deep, I. W.	Ornamentals	320	321
Dobie, N. D.	Tree Fruits & Strawberries	106	727
Jensen, H. J.	Nematode Problems	308	321
Jones, L. E.	Tree Fruits	105	331
McWhorter, F. P.	Ornamentals	214	340
MacSwan, I. C.	Ext. Plant Pathologist	100	727
Miller, P. W.	Strawberries	120	331
Milbrath, J. A.	Tree Fruits	201	341
Millsap, H. H.	Ornamentals	212	340
Vaughan, E. K.	Small Fruits, Vegetables	200	340
Young, R. A.	Ornamentals	207	341

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