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UI 196 and Othello — Two Pinto Bean Cultivars for Idaho

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Pinto beans account for half of the total commercial dry bean acreage in Idaho each year. UI 196 and Othello are recently released pinto bean cultivars that are well adapted for production in Idaho.

Pedigree

UI 196 was released as germplasm by Doug Burke, Prosser, Washington, in 1987. UI 196 is an F_5 selection from the cross [{UI 114 × (UI 114 × PI 203958) × UI 114} × (UI 35 × PI 203958)] × red-seeded early-maturing Japanese bush bean (name unknown). UI 196 was tested in the Cooperative Dry Bean Nursery from 1981 through 1986. It was previously tested under the experimental designation GH-196-2.

Othello was developed by the USDA/ARS at the Irrigated Agriculture Research and Experiment Center at Prosser, in cooperation with the Washington Agricultural Experiment Station. Othello is an F_7 selection from the cross NW 410/2/Victor/Aurora, made by Doug Burke. Othello has been tested in advanced yield trials at Kimberly and Parma, Idaho, and in the Cooperative Dry Bean Nursery. Othello was tested under the experimental numbers GH-215 and GH-217.

Disease reaction

UI 196 is resistant to Fusarium root rot (*Fusarium* spp.), sugarbeet curly top virus, and all known strains of Bean Common Mosaic Virus (BCMV) found in North America. Othello is resistant to Fusarium root rot, sugarbeet curly top virus, and to Type and NY 15 strains of BCMV.

Description

UI 196 has vigorous plants with strong vines and a prostrate growth habit, making it a poor selection for fields with high fertility levels or white mold. Othello is also a vigorous plant, but is small and has a more upright growth habit. Both cultivars have mottled pods. Pods are set midplant in both UI 196 and Othello.

Performance

Othello was tested in advanced yield trials, and UI 196 was tested in Cooperative Dry Bean Nurseries, at Kimberly and Parma, to determine maturity and seed size (Table 1), seed yield (Table 2), seedfill efficiency (Table 3), and yield efficiency (Table 4). Seedfill efficiency is equal to yield/seed-

Table 1. Maturity and seed size of pinto beans grown at Kimberly and Parma, Idaho.

Cultivar	Days to maturity	Seed size (seed/lb)						Combined mean
		Kimberly			Parma			
		1989	1990	1991	1989	1990	1991	
UI 126	89	1,224	1,311	1,139	1,427	1,176	1,323	1,267
UI 196*	91	1,305	1,350	1,260	1,274	1,320	1,580	1,348
Othello	84	1,203	1,237	1,141	1,540	1,163	1,301	1,345
Olathe	85	1,446	1,231	1,246	1,519	1,314	1,388	1,358

*UI 196 data are from 1984, 1985, and 1986 Cooperative Dry Bean Nurseries grown at Kimberly and Parma, Idaho.

Table 2. Seed yields of pinto beans grown at Kimberly and Parma, Idaho.

Cultivar	Seed yield (lb/acre)								Combined mean
	Kimberly				Parma				
	1989	1990	1991	Mean	1989	1990	1991	Mean	
UI 126	3,185	3,246	3,180	3,204	1,557	3,158	2,970	2,562	2,883
UI 196	3,305	3,649	4,505	3,820	3,138	3,417	2,627	3,061	3,441
Othello	3,326	3,385	3,125	3,279	1,873	3,130	3,258	2,754	3,107
Olathe	3,236	3,016	3,100	3,117	2,429	2,976	2,640	2,682	2,900

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Table 3. Seedfill efficiencies of pinto beans grown at Kimberly and Parma, Idaho.

	Seedfill efficiency, %						
	Kimberly			Parma			Combined
Cultivar	1990	1991	Mean	1990	1991	Mean	mean
UI 126	64.64	74.34	69.49	77.19	75.88	76.54	73.02
Othello	81.68	83.67	82.68	80.47	91.16	85.82	84.25
Olathe	64.22	79.28	71.75	74.21	87.44	80.83	76.29

Table 4. Yield efficiencies of pinto beans grown at Kimberly and Parma, Idaho.

	Yield efficiency, %						
	Kimberly			Parma			Combined
Cultivar	1990	1991	Mean	1990	1991	Mean	mean
UI 126	35.95	37.62	36.79	34.75	33.05	33.90	35.35
UI 196	38.41	53.00	45.72	37.54	29.19	33.36	39.59
Othello	42.48	39.24	40.86	35.48	39.15	37.32	39.09
Olathe	35.37	36.41	35.89	35.66	30.47	33.07	34.48

fill duration, while yield efficiency is calculated as yield/maturity. Both efficiency values are measures of reproductive seed growth rates.

Othello matured 84 days after planting in Idaho trials, one day ahead of Olathe and 5 days before UI 126 reached maturity. UI 196 required 91 days to reach maturity.

In Kimberly trials, Othello showed larger seed size than UI 126, Olathe, or UI 196. Seed size was intermediate for UI 126, and smallest in Olathe and UI 196 cultivars. At Parma, UI 126 showed larger seed size than Othello, Olathe, or UI 196. Combined data from both Idaho locations show seed sizes similar to those seen at Parma.

UI 196 seed yields at Kimberly were higher than for any of the other cultivars shown. UI 126 and Othello showed very similar yields, while Olathe showed the lowest seed yields. In Parma trials, UI 196 again showed the highest seed yield. Othello yielded slightly more seed than did Olathe. Both Olathe and Othello seed yields were greater than those of UI 126. Combined data from both locations show seed yield trends like those at Parma.

Mean seedfill efficiency (yield/seedfill duration) for Othello was higher than for either UI 126 or Olathe at both Idaho trial locations. Othello also showed higher mean yield efficiency (yield/maturity) values than UI 126 and Olathe, and similar to UI 196 at both Kimberly and Parma.

Othello has been tested in canning trials at Washington State University, and demonstrated acceptable cooking qualities.

UI 196 and Othello are good choices for pinto bean producers in Idaho. UI 196 is a high-yielding cultivar, with resistance to Fusarium root rot, curly top virus, and Type and NY 15 BCMV strains. Othello is an early-maturing pinto with resistance to Type and NY 15 BCMV strains and Fusarium root rot.

UI 196 and Othello seed is available through the Foundation Seed Program, University of Idaho, Moscow, Idaho, or the Kimberly Research and Extension Center, Kimberly, Idaho.

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