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# PINTO BEANS

## NW 410, NW 590 and Olathe

*Three New Pinto Cultivars Resistant  
To Curly Top and Common Bean Mosaic Viruses*

Marshall LeBaron and John J. Kolar

Pinto beans are the principle dry edible variety grown in Idaho, approaching half of the total dry bean production in 1979. Colorado, North Dakota, Idaho, Nebraska and Wyoming were the 5 largest producing states in 1979 with 5.01 million cwt of the total 5.94 million cwt produced that year. Three new cultivars of Pinto — NW 410, NW 590 and Olathe — are now available. All have performed well in trials in Idaho's bean-producing areas.

### Pedigree

NW 410 and NW 590 were developed by the U.S. Department of Agriculture at the Irrigated Agriculture Research and Extension Center, Prosser, Washington, in cooperation with the Washington Agricultural Experiment Station.

NW 410 was tested under the experimental number 6R-410. The parentage is Sutter Pink × Pinto UI 114. NW 590 was tested under the experimental numbers 6R-590 and 6R-563, a selection out of 6R-590. The parentage of NW 590 is (PI 203958 × Red Mexican UI-35) × Pinto UI 114. Sutter Pink is a mosaic-susceptible pink variety. PI 203958 is a plant introduction resistant to Fusarium root rot. Pinto UI 114 is a virus-resistant commercial variety and Red Mexican UI 35 is a later maturing, semi-vining, virus-resistant line. The crosses for both cultivars were made between 1960 and 1966 by Dr. D. W. Burke.

Olathe, released by Colorado State University, was tested under the experimental number 3439. It was derived from back crosses, made by USDA

scientists as early as 1940, of a rust-resistant pinto to Pinto UI 78, which was then crossed to a dark red kidney. A rust-resistant selection from this progeny was crossed to a light red kidney in 1962 and after a period of natural selection in bulk plots, Olathe was selected in 1972. The later crosses and selection were done by Dr. Don Wood and Dr. John Keenan.

### Disease Reaction

NW 410 and NW 590 are resistant to the Bean Common Mosaic Virus (BCMV) type strain and only slightly susceptible (tolerant) to the variant strain of the common mosaic virus (BVIA). They are resistant to Curly Top virus and also have an effective level of resistance to Fusarium root rot.

Olathe is resistant to the BCMV-type strain and also to the variant strain (BVIA). It is resistant to Curly Top virus. Testing for these viruses was done at Prosser by Dr. Matt Silbernagel of SEA-AR. Olathe shows resistance to rust strains prevalent in Colorado.

### Description

NW 410, NW 590 and Olathe have a semivining plant type similar to UI 111. However, total plant growth at Kimberly appears somewhat less vigorous than UI 114. UI 111 and UI 114 are larger seeded than the new varieties, averaging approximately 100 fewer seeds per pound (Table 1). The seed of NW 590 and Olathe is slightly darker and rounder than the standard varieties.

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

	Days to maturity	Seed size (seeds/lb.)								Avg. all tests
		Kimberly				Parma				
		1977	1978	1979	Avg.	1976	1978	1979	Avg.	
NW 410	93	1317	1495	1400	1404	1238	1506	1407	1384	1394
NW 590	93	1411	1473	1451	1445	1147	1578	1367	1364	1405
UI 111	90	1254	1333	1303	1297	1126	1518	1292	1312	1304
UI 114	92	1153	1267	1197	1206	1093	1372	1272	1246	1226
Olathe	94	—	1437	1315	1376	—	1491	1442	1446	1421

**Performance**

Maturity of the new varieties is similar to UI 114 but later than UI 111 (Table 1). Olathe appears to be slightly later than NW 410 and NW 590.

Seed yield of NW 410 and NW 590 averaged higher than the other entries in the Idaho trials, with their largest yield advantage at Kimberly (Table 2). Olathe yielded slightly better than UI 114 at Kimberly but less at Parma. UI 111 was the lowest

yielding variety in nearly every test. The data suggest that these new varieties should perform well in southern Idaho.

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

	Seed yield (lb./acre)								Avg. all tests
	Kimberly				Parma				
	1977	1978	1979	Avg.	1976	1978	1979	Avg.	
NW 410	2920	3110	3380	3140	3020	2450	2670	2710	2920
NW 590	2890	3290	3530	3240	3230	2100	2870	2730	2980
UI 111	2560	2740	3000	2770	2930	2190	2450	2520	2650
UI 114	2710	2830	3460	3000	2960	2380	2790	2710	2860
Olathe	2670	2930	3520	3040	—	2320	2870	2590	2860