soils, prolific fruit set, medium maturity, determinate plant habit and uniform ripening immature green fruit (*uu*). It was not selected for processing-type fruit quality as Hawaii has no tomato processing industry.

The use of 'Kewalo' as a parent in making F_1 hybrids with other bacterial wilt resistant lines is suggested in part by its 'Anahu' ancestry. Hybrids made from the latter have been widely adapted in Hawaii and elsewhere in these latitudes where a combination of hybrid vigor and multiple disease resistance is needed.

'Anahu' hybrids have consistently outyielded all others in every trial at the Hawaii AES since 1959 (4, 5) and were tested in the Southern Tomato Exchange Program as STEP 314, 351, 352, 483, 484, and 537 during the same period with similar results. 'Kewalo' hybrids seen to date follow the general pattern of 'Anahu' hybrids by improving vigor, longevity, fruitfulness, and disease resistance but with little disturbance of the various horticultural characters of the other parent.

The 'Kewalo' hybrid which performed best for commercial type fruit in Hawaii was hybrid 'BWN-21' ('Kewalo × 'Venus'). 'Saturn', 'Venus' and other bacterial wilt resistant lines susceptible to root knot do not survive well in fields here infested with both these diseases. The effect of root knot galling as interfering with the expression of resistance to bacterial wilt has been well established (2). This suggests a need for the addition of the *Mi* gene to most bacterial wilt lines or hybrids.

Availability

Seed samples of 'Kewalo' are available. Trial samples of 'Kewalo' F_1 hybrids have been sent to some overseas cooperators. Additional seed of hybrid 'BWN-21' is expected by 1975. Address inquiries to: University of Hawaii, Dept. of Horticulture, Seedsman, 3190 Maile Way, Honolulu, Hawaii 96822.

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'Great Northern Valley' Dry Bean[1]

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Common blight, caused by the bacterium *Xanthomonas phaseoli* (E. F. Smith) Dowson, is one of the most serious seed-borne bacterial diseases of beans, *Phaseolus vulgaris* L. Recommended controls are use of certified disease-free seed and rotation. There is no satisfactory chemical control. Great Northern (GN) cultivars 'Tara' (2) and 'Jules' (3) have high tolerance to *X. phaseoli* and high yield but combine the disadvantages of late maturity and vigorous vines, the latter creating conditions favorable for white mold. These 2 cultivars were derived by pedigree selection from the cross of the late maturing, common blight tolerant GN Nebraska #1 sel. 27 line with the early maturing susceptible 'GN 1140'. The reaction to *X. phaseoli* was inherited quantitatively (4) while maturity was inherited qualitatively (1). Linkage occurred between genes controlling common blight tolerance and late maturity (4).

Origin

Genes controlling early maturity in 'GN 1140' were transferred using 6 backcrosses to the recurrent parent GN Nebraska #1, sel. 27. Earliness and a high level of common blight tolerance were recombined using this breeding procedure.

Description

'GN Valley' (tested as GN Expt.-M) is similar to the standard 'GN UI #59' in plant habit, seed size, seed shape, and oven baking quality, but matures only 2 to 4 days later. Common blight tolerance of 'GN Valley' is similar to 'GN Tara' and yield is superior to 'GN UI #59' and 'GN 1140' under conditions favorable for common blight (Table 1). Yield of 'GN Valley' is comparable to standard GN cultivars in the absence or in the presence of a moderate level of this disease (unpublished data from 3 years of trials).

Outstanding characteristics and uses

'GN Valley' is considered superior to 'GN Tara' and 'GN Jules' because it matures approx a week earlier and has less vine growth. Its tolerance to *X. phaseoli* is superior to 'GN 1140' and 'GN UI #59'. The introduction of this cultivar can reduce crop losses due to disease and may permit an expansion of the bean seed industry in Nebraska.

Availability

The Nebraska Foundation Seed Division, University of Nebraska, Lincoln, Nebraska plans to produce foundation seed from 770 kg of breeder seed in 1974. Samples of seed for trial may be obtained from that source.

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Table 1. Yield, disease reaction, and no. of days to maturity of 'GN Valley' and standard cultivars 'GN 1140' and 'GN UI #59' under severe levels of common blight in 1971, 1972, Nebraska.

Cultivar	1971 Scottsbluff Tons/ha	1971 Scottsbluff (Bu/acre)	1971 Scottsbluff Tons/ha	1971 Scottsbluff (Bu/acre)	1972 Alliance Tons/ha	1972 Alliance (Bu/acre)	Disease[z] reaction	No. days to maturity
GN Valley	3.2	(46.9 a[y]	3.6	(51.2) a	1.7	(25.7) a	Tolerant	95-97
GN 1140	2.4	(35.9) b	2.2	(33.0) b	1.5	(21.7) b	Highly susceptible	87-89
GN UI #59	2.8	(41.4) b	–	–	1.5	(21.5) b	Slightly susceptible	90-95

[z]Disease reaction: tolerant-slight small lesions on about 1-5% of leaves close to maturity; slightly susceptible-lesions of various sizes on most leaves and some leaves chlorotic; highly susceptible-many large lesions on most leaves, pronounced chlorosis and necrosis.

[y]Mean separation within columns by Duncan's multiple range test, 5% level.