

2008 Mother and Baby Trial Results
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Five great northern and two pinto bean lines were evaluated grower's fields in 2008 (Table 1). Great northern lines were evaluated in five fields and were compared to Marquis, Beryl-R, and Orion. Pinto lines were evaluated in one field and were compared to Othello. Irrigation systems and row spacing differed among fields. Participant growers were Rodney Loose (two fields in Scottsbluff), Jerry Mackie (Gering Valley), Craig Henkel (Bayard), Mark Buskirk (Alliance), and Mark Watson (Box Butte).

Great Northern Lines: Yield of NE1-06-12 was fairly consistent yield across years, averaging 2809 lbs/acre from 2005-2007. This was slightly higher than Marquis (2749 lbs/acre). In 2008, yield of NE1-06-12 averaged 2796 lbs/acre across 5 environments. NE1-07-12 had the highest yield (3540 lbs/acre) in its first year of evaluation in growers' fields.

Pinto Lines: Yield of NE2-06-8 was almost 3 bushels/acre greater than Othello. Although this line shows promise, it was only evaluated in one growers' field (Mark Watson, Box Butte) and more testing is needed before making any decision about releasing it.

NE1-06-12: Great northern dry bean cultivar NE1-06-12 was developed by the University of Nebraska Agricultural Research Division and released in 2008. NE1-06-12 will be marketed as 'Coyne', for Dermot P. Coyne who was the bean breeder at the University of Nebraska for about 30 years before retiring in 2001. Coyne died in 2002. NE1-06-12 was bred specifically for enhanced resistance to common bacterial blight (CBB), bean common rust, and adaptation to Nebraska growing conditions. Reaction of NE1-06-12 to CBB was consistent across years with field disease ratings of 3.6, 3.5, and 4.4 recorded at the West Central Research and Extension Center-North Platte in 2005, 2006 and 2007, respectively. Conversely, the susceptible great northern, Orion, scored 6.0, 8.5 and 9.0 in 2005, 2006 and 2007, respectively. NE1-06-12 carries the DNA marker (SAP6) linked to the independent loci for CBB resistance.

Inoculation of NE1-06-12 with common bean rust (races 41, 44, 47, 49, 53, 67, 73, and 108) under greenhouse conditions at Beltsville, MD from 2005-2007, provided evidence for the presence of *Ur-3* and *Ur-6* genes for resistance. In addition, NE1-06-12 carries the DNA marker (SK14) linked to the loci for *Ur-3* bean common rust resistance.

Based on top necrosis reaction to NL-3 strain of BCMNV, it was determined that NE1-06-12 carries the single dominant hypersensitive *I* gene that provides resistance to all non-necrotic strains of BCMV, but is hypersensitive to the temperature-dependent necrosis-inducing strains of BCMV and to the temperature-independent necrosis inducing strains of BCMNV. NE1-06-12 has the same partial avoidance of white mold as Weihing due to its semi-upright and porous plant architecture in field nurseries.

NE1-06-12 exhibits a semi-upright Type 2b indeterminate growth habit. Plants averaged 22 inches in height during 2007 with excellent lodging resistance. NE1-06-12 has white flowers and blooms 44 d after planting. It is a midseason bean maturing 91 d after planting (range 90-92 days). The seed coat of NE1-06-12 is bright white. Average seed size for NE1-06-12 (36.2 g/100 seeds) was slight larger than Orion (34.9 g/100 seeds) and Beryl-R (29.3 g/100 seeds) in the intermediate, advanced, and growers' field trials grown from 2005-2007.

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Table 1. 2008 Mother and Baby Trials (Yield in bushels/acre)

Grower's name	Irrigation	Row spacing	NE1-06-11	NE1-06-12	NE1-06-13	NE1-07-2	NE1-07-12	MARQUIS	BERYL-R	ORION	NE-2-07-10	NE2-06-8	OTHELLO
Rodney Loose	Pivot	30	43	45. 4	41. 8	53	79. 4	45. 4		.	.	.	.
Rodney Loose	Furrow	30	47. 8	54	47. 7	.	.	.	49. 6	.	.	.	.
Mark Buskirk	Pivot	30	44. 3	43. 6	34	.	.	.	45. 1	.	.	.	.
Craig Henkel	Furrow	30	40	41. 9	43	48. 4	48. 4	.	43. 8	.	.	.	.
Jerry Mackie	Furrow	22	52. 7	47. 9	33. 4	26	49. 2	.	.	56. 9	.	.	.
Mark Watson	Pivot	15	.	.	.	.	.	.	.	.	35	38	34. 8
Average			45. 6	46. 6	40. 4	42. 5	59	45. 4	46. 2	56. 9	35	38	34. 8