High Protein, Low Lipoxygenase Experimental Soybean Varieties Available From Iowa State University

IA1002 IA1003 IA2006

Iowa State University has developed three experimental soybean varieties, **IA1002**, **IA1003**, and **IA2006**, that combine high protein with the absence of the lipoxygenase-2 enzyme. This combination of traits has special potential for food products based on soy protein, such as tofu, that would benefit from a less beany flavor than current soybean varieties. The three experimental varieties also have other attributes considered important for some soy products. The seeds have yellow seed coats and hila. The seed size is greater than 200 mg/seed, resulting in minimal clean-out when passed over a 12/64-inch screen. Based on tests by Iowa State University, their seed yield is superior to the popular tofu variety Vinton 81.

IA1002, **IA1003**, and **IA2006** are BC_1F_2 plant selections from the cross (L_2-3 x HP203) x HP203. L_2-3 is a line released by the USDA-ARS and the Indiana Agricultural Experiment Station that lacks lipoxygenase-2. HP203 is a high-protein variety developed by Iowa State University. The experimental varieties were evaluated for agronomic performance and seed characteristics in hill plots at Ames, IA, in 1989 and in row plots at three Iowa locations in 1990 (see data below).

IA1002 and **IA1003** are of Maturity Group I. **IA2006** is of Maturity Group II. The three varieties do not have any major genes for resistance to *Phytophthora* rot or the soybean cyst nematode. They are moderately susceptible to iron-deficiency chlorosis when grown on calcareous soil.

Seed of **IA1002**, **IA1003**, and **IA2006** will be distributed under license agreements with the Iowa State University Research Foundation. Seed of the three varieties will be available to interested parties for testing and research in 1991. Foundation seed will be produced in 1991, and the seed will be distributed on a first-come basis. It is recommended that orders for foundation seed be placed before February 1, 1991.

Interested parties should contact Steven Price, Interim Director, ISURF, 214 Office and Lab Bldg., ISU, Ames, Iowa 50011, tel. (515) 294-4740, FAX (515) 294-0778.

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1990 IOWA STATE UNIVERSITY EVALUATION OF IA1002, IA1003, and IA2006
AVERAGE OF AMES, MARSHALLTOWN, AND ROYAL, IA.

Entry	Yield (bu/A)	Maturity* (mo-day)	Height (in)	Lodging† (score)	Seed size mg/sd	Seed size sd/lb	Protein 0%$H_2$0	Oil 0%$H_2$0
IA1002	**43.2**	**9-13**	**31**	**2.2**	**212**	**2142**	**44.2**	**20.9**
IA1003	**45.3**	**9-16**	**33**	**2.0**	**220**	**2064**	**44.9**	**20.6**
IA2006	**44.3**	**9-19**	**31**	**1.9**	**207**	**2193**	**43.6**	**21.4**
Vinton 81	41.9	9-16	33	1.8	235	1932	44.0	21.0
Kenwood	51.4	9-16	31	1.9	160	2838	40.6	22.5
Marcus	49.8	9-17	29	1.9	170	2670		
Hack	49.6	9-19	25	1.6	172	2640		
LSD (0.05)	3.8	2.0	5.7	0.2				

* Maturity recorded at Ames.
† Scores range from 1 (plants erect) to 5 (plants prostrate).