

Amino Acid Analysis in Snap Beans

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Beans *P. vulgaris* are a major source of protein in some areas of the world, particularly South America and Mexico. However, relatively little selection for high nutritional value has been made.

Seventy-four lines of snap beans and three of lima beans were grown in the greenhouse and harvested at fresh market stage. This was an arbitrary classification since the collection was made as wide as possible and included bushes and poles, flat, round, long and short podded lines. The pods were freeze dried and analyzed for percent nitrogen. They were also analyzed in a Spinco amino acid analyzer for the amino acid.

In Table 1 the average analyses for each amino acid as well as the lowest and highest individual recording is given. There was no correlation between high %N and high or low over-all amino acid levels. Some of the highest levels had the lowest %N, other almost the highest.

PI278674 had the highest Methionine level, PI180758 the highest Leucine and Lysine. PI136681 appeared to be the lowest nutritionally, Favorit the highest of all the beans tested.

Table 1. Amino acid analyses of 77 bean lines (expressed as grams per 16 grams of N).

	Average	Low	High
% N	2.43	1.84	3.31
Aspartic	11.69	7.64	15.21
Threonine	4.51	3.41	6.64
Serine	5.11	3.11	9.91
Glutamic	9.38	5.50	12.38
Proline	3.98	2.47	5.87
Glycine	3.42	2.64	4.80
Alanine	4.43	3.52	6.16
Valine	5.17	4.05	6.55
Methionine	.67	.39	1.91
Isoleucine	3.86	2.86	4.89
Leucine	5.85	4.50	7.71
Tyrosine	2.56	1.94	3.38
Phenylalanine	3.80	2.75	5.45
Ammonia	1.05	.67	1.27
Lysine	5.23	3.60	7.30
Histidine	2.23	1.51	2.75
Arginine	4.25	3.04	5.81
Sum	77.18	53.60	107.99