11.9 g asparagine, 5.1 g threonine, 8.1 g serine, 14.9 g flutamic acid, 4.6 g proline, 4.4 g glycine, 4.7 g alanine, 5.8 g valine, 1.2 g methionine, 5.3 g isoleucine, 8.9 g leucine, 3.4 g tyrosine, 6.4 g phenylalanine, 3.2 g histidine, 7.5 g lysine, 6.3 g arginine, and 1.1 g cystine. Raw leaves contain (per 100 g edible portion) 8 calories, 97.2% moisture, 0.6 g protein, 1.7 g total carbohydrate, 0.5 g ash, 8 mg Ca, 36 mg P, 2.3 mg Fe. Cooked leaves contain, per 100 g, 112 calories, 70.5% moisture, 7.0 g protein, 0.2 g fat, 21.2 g total carbohydrate, 1.1 g fiber, 1.1 g ash, 36 mg Ca, 98 mg P, 0.7 mg Fe, 0.14 mg thiamine, 0.04 mg riboflavin, 0.9 mg niacin, and 18 mg ascorbic acid. Dried seeds contain 13.2% water, 20.0% protein, 1.5% fat, 58.0% carbohydrate, 3.7% crude fiber, and 3.4% ash. Seeds are reported to contain trypsin inhibitors and chymotrypsin inhibitors. The seeds may contain 0.62% lecithin, 0.09% cephalin, a papainlike protease, carotene oxidase, gum, and tannin.[40] Maturing seeds are reported to synthesize S-methylseleno cysteine. Silage made from the leaves and stems is reported to contain 27.3% DM, 3.3% protein, 2.1% digestible protein, 14.2% total digestible nutrients (nutritive ratio 5:8).

Toxicity — The root, considered poisonous by some, has been reported to cause colic, giddiness, nausea, prostration, purgation, and rapid pulse.[3] Addition of raw limas to the diets of rats is said to diminish the rate of growth and the apparent digestibility of protein and fat. Maya says that pods are poisonous to pigs.[42] Containing varying amounts of cyanogenetic glycosides, beans which have reverted to the wild or semicultivated forms should be avoided; "the dark purple beans are the most toxic and have caused death."[16] "Cooking does not altogether destroy these compounds."[11] Lima beans also contain a lectinic glycoprotein. Deeply colored red or black testas have, in the past, been associated with high levels of cyanogenic glucosides in the seed, but cyanogenic glucosides have been reduced to safe levels by selection in the U.S. and elsewhere. The supposed absence of HCN in white cultivars may represent wishful thinking. There seems to be no reliable correlation between seed color and cyanide content.[40] Some tropical limas may contain 0.3% HCN. The U.S. rejects beans containing more than 0.01%, while Canada stops imports with more than 0.02%. Plants containing 0.02% HCN or more are regarded as potentially dangerous to livestock. The small black lima of Puerto Rico contains as much as 0.3% and is said to have caused fatalities when ingested. Silage and wilted haulms may cause intoxication as well.[14]