

This plant is a branching annual, with many upright stems from the same root. The leaves resemble those of the vetch, having 7 pairs of small leaflets. These are oblong, soft-hairy all over,  $\frac{1}{2}$  inch long or less, and sharply toothed on the margins. The flowers are borne singly in the axils of the leaves on short stalks about  $\frac{1}{2}$  inch long. The pods are bladderly, inflated, from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long, and finely pubescent with glandular hairs. Each pod contains one, or very rarely two, large seeds, which are wrinkled and bear a fanciful resemblance to a ram's head, whence the Latin name *arietinum*. The seeds are a little larger than those of the common garden pea, to which they are quite similar.

The "Idaho" pea was cultivated at the Colorado Experiment Station in 1895 and 1896. Professor Cooke states that "it has demonstrated its ability to make a large growth with plenty of water and a fair growth with a very limited supply. It belongs to the pea family, and is grown in rows 30 inches apart, the plants 6 to 12 inches apart in the rows. Its growth indicates that it can be raised for about 1 cent per pound."

About 30 to 50 pounds of seed are used per acre, depending upon whether it is sown in drills or broadcast. In India the largest acreage is in the northwest provinces, where the soils are similar to those in the States west of the one hundredth meridian, and the climate is much like that of New Mexico and Arizona. All authorities agree that it is better suited to arid and semiarid regions than to humid ones, the crop apparently requiring a great many sunny days during its season of growth. Better results are secured in growing it with irrigation than without, although it makes a fair yield on comparatively dry soils.

The seed should be sown not earlier than May 15, or at the higher altitudes about the 1st of June, and, if some of the short-season varieties are procured, there will be less danger of their being caught by early frosts. It might prove of some value in parts of the Southern States as a winter crop and soil cover on lands which are unsuited to the vetches and crimson clover.

The average analyses of the seeds show that they contain 20.5 per cent crude protein, 3.9 per cent fat, and 59.4 per cent carbohydrates, having approximately the composition of the seeds of the field pea commonly grown in the Northern States.

Digestion experiments have not been made with them, but their fattening qualities in use show them to be fully as valuable as the seeds of many of the other legumes.

The leaves of the gram are viscid with a secretion which contains oxalic, acetic, and malic acids, the first of these predominating. In India the secretion is collected by means of cloths spread over the plant at night and wrung out in the morning when wet with dew. The solution thus obtained is used in the preparation of cooling drinks, and also finds sale as a vinegar. The forage is said to be actually poisonous to horses on account of the excess of oxalic acid in the leaves. Cattle eat it, but it often proves injurious to them, although to a less extent than to horses. However, this crop is not ordinarily grown as a forage crop, but for the seeds, and the seeds alone are used in India for feeding purposes.

Reports of this pea grown in the Rocky Mountain regions mentioned yields estimated at the rate of 90 bushels to the acre, but this is very unusual. The average crop in India is about 10 bushels to the acre, and the highest yields do not exceed 25 bushels, the latter only when grown on the best soils under the most favorable conditions.

## 2140-2150. LINUM USITATISSIMUM.

**Flax.**

From France and Russia. Received through Mr. W. T. Swingle, February 13, 1899. The following varieties of flax were sent:

2140. "Common French flax."

2141. "Large-seeded flax." A race of flax having particularly large seeds, grown as a winter flax for oil in Southern France, Sicily, and Algeria.

2142. "White-flowered." A spring flax, said not to degenerate in France, vigorous, easily grown, yields abundantly a fiber of ordinary quality esteemed for machine spinning. Seed is ripe when fiber is mature. A large variety, should be sown thinner than other sorts.

2143. "True Riga flax." The standard Russian fiber flax; seed from Russia.

2144. "French one-year Riga." Riga flax is said to be improved by being grown one season in France; it degenerates later.

2145. "Pskoff." A superior form of Riga flax. Seed grown in France.

2146. "Improved Russian Pskoff." A spring flax. A variety of Riga flax, but higher, having finer fiber and not degenerating in France, as does the Riga. Vilmorin recommends this as the best variety for France. Seed from Russia.