

Sweet lupine as a feed and food crop



- A seed rate of 80 kg/ha is generally recommended. In case of row planting, the nationally recommended spacing is 30 cm between rows and 7 cm between plants. However, with high germination rate (above 90%), the spacing between plants can be increased to 15 cm.
- Initial fertilizer application equivalent to 100 kg DAP/ha may be applied. As a legume crop, sweet lupine fixes nitrogen and does not need additional fertilization at later stages.
- Mid-July is a suitable period for planting sweet lupine.

Weeding

- Ideally the crop should be weeded twice during the growth cycle, the first time after full emergence, and the second just before the plant flowers.

Harvesting

- The crop reaches grain harvesting stage around the end of December. When mature, sweet lupine pods tend to shatter. It is, therefore, important to closely monitor sweet lupine fields and harvest the pods as they mature.



Introduction

Sweet lupine is a leguminous crop which was recently introduced to Ethiopia. As opposed to the local bitter lupine variety—which has high alkaloid content—sweet lupine has minimal levels of secondary metabolites, and the grain's crude protein content is high (37%); this makes it suitable for use as food and feed. As a legume crop, it contributes to soil fertility and can serve as a rotation crop, especially in areas where disease affecting pulse crops, such as faba bean, has become a serious problem.

Growing sweet lupine

- Sweet lupine varieties, such as Sanabor and Vitabor, released through the national agricultural research system have been found to perform very well at the Africa RISING research sites.
- While sweet lupine varieties are generally susceptible to water logging and do not grow well on vertisols, they tolerate high levels of soil acidity.
- Farmers can grow sweet lupine as a sole crop or intercrop it with maize.

Land preparation and sowing

- Sweet lupine has slow initial root establishment period. To compensate for that, the land needs to be prepared well through repeated ploughing (at least twice).
- Water drainages should be established to ensure that run-offs do not negatively impact the sweet lupine plot.

Benefits

- Sweet lupine yields up to three tonnes of grain/ha, and eight tonnes of haulm/ha.
- The grain is a very good protein and energy supplement for fattening animals.

- Supplementation of 200 g of sweet lupine grain daily to fattening sheep results in a daily body weight gain of about 75 g. The grain can effectively replace commercial concentrate supplements and help farmers finish fattening their animals using a farm grown energy and protein diet.
- Like other pulse crops, such as the faba bean and field pea, it can be used for human consumption. Mixed one–one with field pea grain, the Shiro from the grain has been very well received by farmers in northwestern Ethiopia.
- The grain can be processed into various products in the same way as soya bean.
- Generally, integrating sweet lupine into the mixed farming system provides multiple functions—ranging from soil fertility improvement to animal feed supplements and human food resources.



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Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

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