



Woollypod Vetch

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Woollypod vetch (*Vicia villosa* ssp. *dasycarpa*) is unrivalled as a nitrogen and organic matter source on farms located at higher elevations. This legume can help reduce herbicide costs by smothering weeds. It provides a good habitat for insects that attack plant pests. It has great fame for protecting valuable topsoil from erosion on steep sloping fields. Woollypod can be grazed or fed to livestock. Plan to manage this vetch considering its twining growth habit, its susceptibility to root-knot nematode infection, and its growth-limiting (allelopathic) effects on the next crop.

Characteristics

Woollypod vetch is an annual cool-season legume. It grows rapidly to a height of 18–27 inches. Woollypod has a climbing tendency but is relatively easy to control. While similar in appearance to hairy vetch (*V. villosa*), woollypod has finer hairs on its stem and foliage. The leaflets are blunt and about ¼ inch (4–6 mm) wide. The floral racemes have 6–12 pinkish-purple flowers. This vetch is semi-prostrate, with trailing stems up to 3 ft long. It will climb on any available support, such as the stiff stems of grasses and grains.

Environmental requirements

Woollypod vetch tolerates a wide range of soil texture, from sands to heavy clays (if well drained). It adapts to a broad soil pH range (pH 4.5–7.0), and unlike some other legumes it can grow in strongly acidic soils. This legume has some drought and heat tolerance as well. It can be planted year-round at elevations over 1500 ft in Hawaii. At lower elevations (below 1500 ft) the best time to plant woollypod vetch is during the cooler fall and winter months, according to the USDA Natural Resources Conservation Service (NRCS).

Benefits provided by woollypod vetch

EXCELLENT source of organic nitrogen

EXCELLENT for increasing soil organic matter, improving soil quality, and suppressing weeds

VERY GOOD for quick growth and establishment

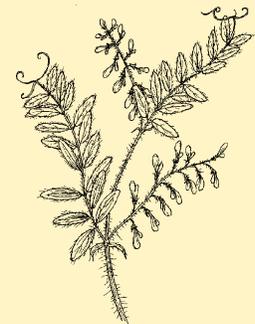
GOOD for attracting beneficial insects for reduced- or non-chemical pest management, for taking up and storing excess N, and for providing erosion control

GOOD forage production, nutritional quality, and palatability

TOLERATES acidic and low fertility soils

ADAPTED to higher elevations, cool seasons

USE IN annual production systems including vegetables, herbs, cut flowers and ornamentals, dryland taro



Cultivars

The woollypod vetch cultivar commonly recommended by Hawaii NRCS is 'Lana', which was developed and released by that agency in California. 'Namoi' is an Australian cultivar similar to 'Lana.'

Establishment

Broadcast 30–60 lb pure live seed per acre, or drill 10–30 lb pure live seed per acre. Broadcast and disc lightly, or drill to a depth of ½–1 inch (1.25–2.5 cm). Inoculate seeds with a “pea/vetch” type rhizobia inoculant unless a nodulated crop of vetch has been grown in the field within the past few years.

Uses

Soil improvement

Woollypod vetch produces about 1.5 tons/acre dry matter and an impressive 73 lb of nitrogen (N) per ton of dry matter, according to NRCS, making it one of the richest sources of organic N among green manure plants. It also produces more dry matter than other vetches.

For optimal N fixation, legumes need adequate phosphorus, a good balance of sulfur and micronutrients (especially iron and molybdenum), suitable pH, and good aeration (no compaction or waterlogging). Before planting, have the soil tested by the CTAHR Agricultural Diagnostic Service Center or a commercial laboratory familiar with Hawaii’s soils, and follow the recommendations for soil amendments and fertilizers.

The root system of woollypod vetch also has a beneficial effect on the structure and tilth of the topsoil layer. It can increase soil fertility by scavenging the soil for phosphorus and potassium and making them more available for subsequent crops.

Erosion control on slopes

Farmers can rely on the quick growing ‘Lana’ vetch as a soil conservation tool to preserve valuable topsoil on sloping fields and other erosion-prone areas. Its vigorous root system effectively holds soil in place while improving water infiltration, conserving moisture, and improving soil tilth.

Weed control

A fast growing green manure crop such as woollypod vetch is useful for reduced- or non-chemical weed suppression. Sow at a higher rate (60 lb/acre) if severe weed competition is anticipated. Woollypod’s dense growth will shade and smother weeds and outcompete them for soil moisture and nutrients.

Caution is advised when using ‘Lana’ vetch in association with other crops unless they are known to be

immune to its allelopathic effects. Allelopathic compounds are natural chemicals that can suppress the growth of other plants susceptible to their effects. This characteristic can be useful against weeds, but it is harmful when it limits growth of valuable intercrops or following crops such as certain young grasses, lettuces, and peas.

Attracting beneficial insects

Woollypod vetch is a valuable plant for reduced-chemical or nonchemical management of insect pests. It attracts pollinators and beneficial insects such lady beetles, lacewings, minute pirate bugs, and others.

Grass-legume mixtures

Mixtures of two or more green manure crops can take advantage of the best agronomic features of each, and grasses and legumes can often be combined successfully. If using woollypod vetch for this purpose, try growing it with a small-grain crop such as oats. ‘Lana’ vetch and black oats (*Avena strigosa*) should make a good combination, because black oats are resistant to root-knot nematodes and will provide support for the vetch to climb on. Because woollypod vetch is a host of the root-knot nematode, a woollypod vetch-black oats mixture may not effectively suppress the soil population of these nematodes. If root-knot nematode control is desired, better results may be obtained with another green manure crop that is not a nematode host, maintained in a long-term planting free of weeds.

Feed

Woollypod vetch is very nutritious and can be used for grazing. Like most vetches, it is bitter when green and becomes more palatable as it dries. For hay of optimal quality, cut woollypod vetch when it is in full bloom.

Management cautions

Woollypod vetch has a climbing tendency, although it is not considered invasive, and in vineyards and young orchards it must be managed to keep it off both the crop and irrigation equipment. It is easy to cut or pull out. With regular monitoring and timely mowing, it can be easily controlled.

Woollypod vetch is aggressive and initially competes with companion crops for moisture. Over time,

the use of green manures and cover crops improves moisture retention in the soil, and thus water competition may subsequently become less of a problem. Vetch seeds have dormancy due to a hard seedcoat, and woollypod may become a weed in subsequent crops. The allelopathic compounds in woollypod vetch that suppress weeds may also be a problem for a subsequent cash crop. Avoid planting susceptible crops such as lettuce and peas immediately after incorporating woollypod vetch.

Pest problems

Woollypod vetch can be a host of *Sclerotinia minor*, which causes lettuce drop (a fungal disease of lettuce, basil, and cauliflower); do not use it when growing crops susceptible to this pathogen. 'Lana' vetch is susceptible to root-knot nematodes.

Common and purple vetch

NRCS also recommends common vetch and purple vetch as green manures for Hawaii for areas above 1500 ft elevation. Their establishment and management are similar to woollypod vetch.

For assistance:

Contact your nearest Cooperative Extension Service office for additional assistance in selecting appropriate cover crops and green manures for your farm and cropping situation. Help can also be obtained from the USDA Natural Resources Conservation Service field offices located on each island.

Visit CTAHR's Sustainable Agriculture for Hawaii Program Website at <<http://www.ctahr.hawaii.edu/sustainag>> to find additional information about green manure and cover crops. The site also includes references and links to other useful on-line resources.



Sustainable Agriculture in Hawaii . . .

. . . integrates three main goals—environmental health, economic profitability, and social and economic equity. Sustainable farms differ from conventional ones in that they rely more on management practices such as crop diversification and crop rotation, agroforestry, integrated pest management, rotational grazing, and innovative marketing strategies. For further information on Sustainable Agriculture in Hawaii, contact:

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This material is based on work supported by the Cooperative State Research, Education, and Extension Service, U. S. Department of Agriculture, and the Agricultural Experiment Station, Utah State University, under Cooperative Agreement 98-ESAG-1-0340. Portions of this text were adapted from the USDA Natural Resources Conservation Service Hawaii Field Office Technical Guide, Section IV, Code 340, "Cover and Green Manure Crop" May 1992. Plant drawing reprinted from *Managing Cover Crops Profitably*, 2nd edition, published by USDA's Sustainable Agriculture Network (SAN), original illustration by Marianne Sarrantonio and Elayne Sears. Logo drawing courtesy of Deित्रich Varez.

