From Producer to the World

AGT COVER CROPS & FORAGES AFRICA

Grazing Vetch – *Vicia villosa ssp dasycarpa*

Grazing vetch aka Woolly pod vetch is an annual or biennial (rarely) leguminous plant. It produces most of its growth during autumn, winter and spring. It is most commonly used as grazing or hay production. The minimum rainfall requirement for these species is 350 mm per annum, provided that distribution correlates with its production curve. Stands under irrigation or higher rainfall (500 – 700 mm per annum) show improved growth, when soils can freely drain.

Strengths	Limitations
• 3 - 12 t DM/ha/season **Depending on environmental conditions and management** • Fixes atmospheric nitrogen (N) • Adapted to acid/low fertility soils • High nutritive value • Good pioneer species • Long growing season • Low bloat risk in cattle • Good for soil improvement • Ease of establishment • Adds quality to grass pastures	• Poor palatability, especially when young • Slow winter growth • Susceptible to heavy grazing pressure at establishment and in the spring • Potential weed in winter crops • Seed toxicity • Allelopathic to other plants (can also be an advantage)

Advance Seed FRESHPOP "CORONA" hi-harvest SELECTED SEED KEURSAAD AGT FOODS AFRICA

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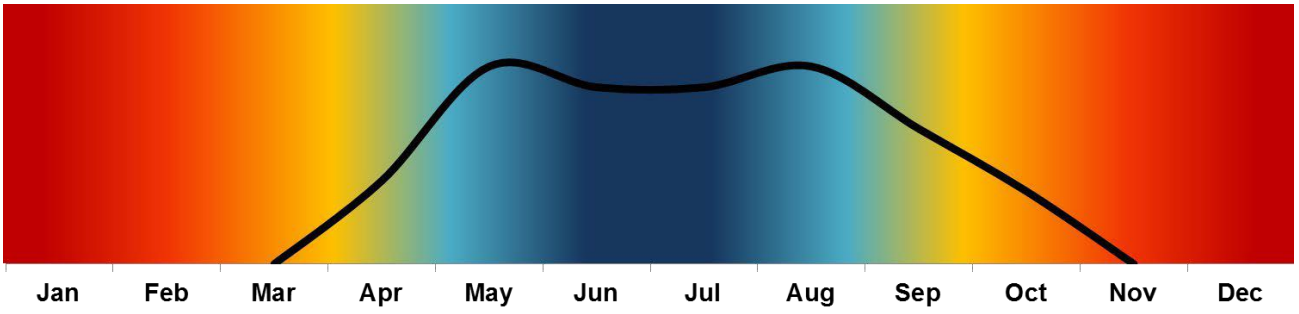
What can it be used for?

Grazing: Ideal cool season grazing when grazed at the right stage of maturity.

Hay: Vetch is tolerant of mowing and will dry fast. A reserve of 10 – 15 cm foliage will stimulate fast regrowth.

Cover Crop: Vetch offers a full spectrum of benefits for cover cropping. It builds the soil's organic material and nutrient content, by scavenging it from the soil and introducing new Nitrogen from Nitrogen fixation. Vetch protects the soil against erosion, improve water infiltration rate and break compaction and stabilise soil aggregates. Vetch also extracts some heavy metals from the soil.

Production potential: A production potential of 3 – 12 t DM/ha/season can be achieved, but this depends on soil fertility, environmental conditions and frequency of utilisation [1, 2].



Relative growth curve of a Vetch stand - one year cycle

Metabolic disturbances in animals on cultivated pastures:

Frothy Bloat: Build-up of gas in the rumen due to stable foam forming, causing animals to suffocate.

Phototoxicity: May occur in darkly coloured animals, but is extremely rare.

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Establishment

Climate: Vetch is widely adapted, but is most suited to cool winter rainfall areas. Success has been achieved in winter under irrigation in summer rainfall areas

Moisture: Under dry land conditions it requires at least 350 mm per annum, but 500 – 700 mm per annum is more suitable. Best production is achieved under irrigation. It does however not tolerate waterlogged conditions.

Soil: Vetch is adapted to a wide range of soil types, varying from well-drained sands to heavy clays. The ideal pH (KCl) for production is 6 – 7, but can successfully grow in a range of 5.5 - 8. Although tolerant of acid / low fertility conditions, it is intolerant of high levels of Aluminium.

Fertilization: Grazing Vetch is a legume and therefore fixes atmospheric N into a usable form of N. For this reason, no N should be applied when cultivating this crop. A soil analysis before establishment is essential [1, 2, 3].

	N (kg/ha)	P (mg/kg soil)	K (mg/kg soil)
Requirement for establishment*	0	15-20	120
Seasonal application (kg/ha)	0**	Use removal rates	
Production - Removal rates (kg/ton):			
Good quality fodder	49	5.1	31
Average quality fodder	37	4.5	24
Poor quality fodder	30	3.5	17

* Determined by production potential

**Fixed from atmospheric-N in symbiosis with *Rhizobium*

Phosphorus (P) and Potassium (K) can be recycled back to pastures when grazed by animals. This is dependent on the grazing system and the type of animals used. Up to 40% of P and 90% of K can be recycled [5]. It is however necessary to do annual soil analysis to determine the level to which recycling occurred. The difference should be fertilized.

Methods: Establish on a firm, fine, weed free seed bed. Consolidating (rolling) the seedbed after sowing/planting will ensure good seed-soil contact and subsequently better germination and establishment. Seed must be inoculated with the correct bacteria before planting.

Our prescribed seeding rate:	**Blends** [1, 2]	**Pure** [1, 2]
	25 kg/ha	50 kg/ha

Planting time: The best time to establish Grazing Vetch is from February to April. It is commonly planted in a mixture with forage cereal crops. When planting in a mixture the best time to plant should correspond with the t time to plant the main component of the mixture.

Management

Utilisation: Utilisation should only start after branching has occurred to allow young plants to build-up sufficient reserves. This will allow strong regrowth. In general, grazing should start when the plant has about 10 – 15 nodes or has initiated flowering. A reserve of 10 – 15 cm foliage will stimulate fast regrowth after harvesting.

Cultivars

Namoi

Namoi is a very late (130 – 145 days) maturing vetch with very high forage production. This cultivar is known to have a ‘very high’ hard seed % which is good for building a persistent stand by reseeding, but is not good for rotational cropping as the seedbank is persistent.

Haymaker

Haymaker is a late (110 – 120 days) maturing vetch with high forage production. It makes excellent hay, silage and green manure in areas where the rainfall exceeds 400 mm per annum. This cultivar is known to have a 'moderate' hard seed % which makes this cultivar more suited for rotational cropping systems.

Resources

1. Pasture Handbook, Kejafa Knowledge Works, ISBN 0-620-31994-1
2. Tropical Forages - http://www.tropicalforages.info/key/Forages/Media/Html/Vicia_villosa_subsp._varia.htm
3. Feedipedia – Hairy vetch (*Vicia villosa*) - http://www.feedipedia.org/node/238
4. FAO - http://www.fao.org/ag/agp/AGPC/doc/Gbase/data/pf000506.htm
5. Dannhauser CS. 1991. Die bestuur van aangeplante weiding in die somerreënvaldele, vol. 1. Warmbad
6. Fodder legumes in the summer rainfall areas of Southern Africa – Dr. CS Dannhauser –SANSOR
7. Gids tot die volhoubare produksie van weiding. Alles oor natuurlike veld en aangeplante weiding vir kleinvee, grootvee en wildboere. Prof Hennie Snyman, 2012.
8. Truter, WF. Dannhauser, CS, Smith, H. and Trytsman, G. 2014. *Vicia spp.* (Vetches). Integrated Crop and Pasture-based livestock production systems. Conservation Agriculture – Part 18. SA Grain. ISSN 1814-1676. Page 81-83.