

D – VETCH VARIETY UPDATE

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SARDI's National Vetch Breeding Program is supported by the GRDC. It focuses on the breeding and assessment of common vetch (*Vicia sativa*) and woolly pod vetch (*Vicia villosa*) with the aim of producing high yielding grain and hay lines with disease resistance, soft seeds and tolerance to drought/heat stress. All common vetch varieties released by this program are rust resistant.

CURRENT VARIETIES

Common Vetch

Morava - the first common vetch variety bred in Australia, it is highly rust resistant and very high in grain and dry matter production in areas with an average annual rainfall > 400 mm. It is a late flowering (115+ days to full flower), soft seeded, non-shattering multi-purpose variety, with beige cotyledons. It is palatable as fresh or dry plant and the grain is extremely palatable for ruminants with a grain toxin level of 0.5-0.6%.

Rasina - this variety is characterised by maturing 15-20 days earlier than Morava, (95 - 105 days to flowering), it is a small plant, with less shooting than Morava, but form pods on lower nodes (starts from 5-7node) and produce good grain yield in areas with annual rainfall less than 380 mm. Rasina is resistant to rust but not resistant to Ascochyta and Botrytis, but is less infected by these diseases because the canopy is more open than Morava's.

Volga - this variety is highly rust resistant has very good early establishment, earlier in maturity by 7-12 days than Rasina (from seeding to full flowering 95-100 days). It is well adapted to grain and hay production in low to medium rainfall areas; such as the SA Mallee, Mid North, Eyre Peninsula, Vic Mallee (Walpeup), Wimmera, NSW Central West (Ranking Springs). Volga is available from Heritage Seeds.

Timok - this variety matures between Rasina and Morava (from seeding to full flowering 100-105 days) is high yielding and highly rust resistant but is only moderately resistant to ascochyta blight, susceptible to botrytis. Timok is ideally suited to grain production in areas with annual rainfall > 380 mm. Timok dry matter production is similar to Morava in high rainfall regions (> 400 mm), but 19% higher than Morava in low to medium rainfall regions (330-380 mm). Timok is available from Pasture genetics/S&W Seeds.

Studentica is a new white flower variety of common vetch that will be commercially available for sowing for the first time in 2021. This variety has the earliest flowering and maturity of the common vetches, flowering in approx 85- 90 days. It is rust resistant but susceptible to botrytis like other common vetch varieties. The advantage Studentica has over other varieties is its winter growth and vigour combined with good frost tolerance which enables it to put on more bulk throughout the cold parts of winter, providing fodder earlier in the season. This variety is particularly well suited to low rainfall and marginal cropping/mixed farming systems requiring early feed to fill the winter feed gap, or a more reliable legume option in mixed enterprises. Studentica was developed and trialled by the SARDI national vetch breeding program in conjunction with GRDC and SAGIT, it will be available from Pasture genetics/S&W Seeds.

Woolly pod vetch

Capello (*Vicia villosa subsp.*) has high dry matter yields, similar to Haymaker. It has late maturity and is best suited to areas receiving greater than 450 mm annual rainfall. It is worth noting that Capello has a high level of high seeds.

RM4 (*Vicia villosa* subsp.) - this variety is characterised by good early establishment for a woolly pod vetch (> 10 nodes in 3 months) with earlier maturity than other woolly pod varieties, it is 10-20 days earlier than Capello and Namoi, respectively. It is soft seeded (emerged > 90% in Australian soil conditions), non-shattering (< 5% by full maturity/harvesting), palatable as both green plants and hay/silage with good leaf retention at baling.

ACKNOWLEDGMENT

The National Vetch Breeding Program would like to thank GRDC and SARDI for funding this program and acknowledge the ongoing support and interest provided by Australian farmers. Farmers and not for profit farmer groups and organisations provide trial sites, feedback, advice, recommendations and their wish lists for future varieties to the program, all of which are gratefully received and appreciated.

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Table 1. Characteristics of selected vetch varieties

Variety	Maturity	Yield potential		Flower colour	% of pod shattering	% of hard seeds	Disease reaction*		
		Grain	Dry matter				Rust	Ascochyta	Botrytis
Common vetch varieties (<i>Vicia sativa</i>).									
Blanchefleur	Mid	High	Mod	White	5-10	5-10	VS	MR	S
Studenica	Very early	High	High	White	0-2	0	R	MS	S
Morava	Late	High	High	Purple	0	0	R	MS	VS
Rasina	Early-mid	High	Mod	Purple	0-2	0	R	MR	S
Volga	Early	V. high	High	Purple	0-2	2-5	R	MR	MS
Timok	Mid	High	V. high	Purple	0-2	0-2	R	MR	MS
Purple vetch (<i>Vicia benghalensis</i> subsp. <i>benghalensis</i>)									
Popany	Very late	Low	High	Purple	20-30	5-10	R	S	VS
Woolly pod vetches (<i>Vicia villosa</i> subsp.)									
Haymaker	Late	Low	V. high	Purple	5-10	20-30	R	S	VS
Capello	Late	Low	V. high	Purple	5-10	15-20	R	S	VS
RM4	Mid	Mod.	V. high	Purple	2-5	2-5	R	MS	VS

VS: very susceptible

S: susceptible

MS: moderately susceptible

MR: moderately resistant

R: resistant

Aim: To increase vetch biomass using growth regulants.

Vetch biomass trial plan

Buffer	Buffer	Buffer
Morava (untreated)	Morava (untreated)	Timok (+ 20 g)
Timok (+ 10 g)	Studenica (untreated)	Morava (untreated)
Studenica (untreated)	Studenica (untreated)	Morava (+ 20 g)
Timok (untreated)	Morava (untreated)	Timok (untreated)
Studenica (+ 20 g)	Studenica (+ 10 g)	Studenica (+ 10 g)
Studenica (untreated)	Morava (+ 20 g)	Studenica (untreated)
Timok (+ 20 g)	Studenica (+ 20 g)	Timok (+ 10 g)
Morava (untreated)	Timok (untreated)	Studenica (untreated)
Timok (untreated)	Timok (+ 10 g)	Studenica (+ 20 g)
Morava (+ 20 g)	Timok (+ 20 g)	Timok (untreated)
Morava (+ 10 g)	Morava (+ 10 g)	Morava (untreated)
Studenica (+ 10 g)	Timok (untreated)	Morava (+ 10 g)

Buffer

Buffer

Buffer

N → **Seeding date:** May 20, 2020
Fertiliser: MAP
Fertiliser rate: 80 kg/ha

Note: Applications of ProGibb (Gibberellic acid) were made to vetch on June 11, 2020 at either 10 or 20 g/ha, four weeks prior to grazing. Biomass cuts were taken July 4. Flowering and podding dates will be monitored.