

Possum

MILLING OAT

VARIETY SUMMARY

- Dwarf milling oat to replace Echidna.
- Better milling quality & fewer screenings than Echidna.
- Higher protein than Echidna & Euro.
- Improved stem rust, leaf rust & septoria resistance compared to Echidna.
- Very susceptible and intolerant to CCN.
- Regional fit – Echidna & Euro areas under medium to high rainfall.

BREEDING

Possum was developed by the Oat Breeding Program and collaborators within the South Australian Research and Development Institute and Agriculture Victoria. Possum was bred from the cross ND863468, a line imported from North Dakota, OX82;059-58-10, a sister line to Euro, and Carrolup, a WA bred milling quality tall oat variety. It was evaluated as SV91024-7. The name, Possum, was selected from Australian marsupials native to south eastern Australia as with other varieties previously released from the Oat Program.

AREA OF ADAPTATION

Possum is adapted to high rainfall regions of South Eastern Australia.

PLANT CHARACTERISTICS

Possum is a dwarf oat similar in height and maturity to Echidna. It is an early-mid season maturing line which heads 2 days earlier than Echidna and 2 days later than Euro. Possum has similar straw strength and standing ability compared to Echidna but is slightly more prone to shattering. It has better straw strength, standing ability and shattering resistance than Euro.

DISEASE AND PEST RESISTANCE

Possum is an improvement compared to Echidna for stem rust, leaf rust and septoria resistance. It is no improvement compared to Echidna for barley yellow dwarf virus (BYDV), bacterial blight resistance, and CCN resistance and tolerance. It is inferior to Echidna for stem nematode tolerance and red leather leaf resistance.

Stem rust	Moderately susceptible	Better than Echidna and Euro, similar to Mortlock
Leaf rust	Moderately susceptible	Better than Echidna, similar to Euro and Mortlock
BYD Virus	Moderately susceptible	Similar to Echidna, inferior to Euro and Mortlock
Septoria	Moderately susceptible	Better than Echidna, similar to Euro and Mortlock
Bacterial blight	Susceptible	Similar to Echidna, inferior to Euro and Mortlock
Red leather leaf	Susceptible	Similar to Euro, better than Mortlock, inferior to Echidna
CCN resistance	Very susceptible	Inferior to Echidna, Euro and Mortlock
CCN tolerance	Intolerant	Similar to Echidna, Euro and Mortlock
Stem nematode tolerance	Moderately intolerant	Better than Euro and Mortlock, inferior to Echidna

GRAIN QUALITY

The grain quality of Possum is of milling standard. It is 22% more likely to reach milling grade criteria than Echidna in medium to high rainfall zones and 9% less likely than Euro. Possum is superior to Echidna for hectolitre weight, 1000 grain weight, screenings percentage and groat percent (the percentage of grain remaining after the husk is removed). It is similar in hectolitre weight to Euro, superior for screenings percentage, but slightly inferior for 1000 grain weight and groat percent (Tables 1 and 2).

Possum is higher in protein than Echidna and Euro. It is equivalent to Echidna for oil percent but higher than Euro (Table 2).

Table 1. Average hectolitre weight, 1000 grain weight and screenings percentage for Possum, Echidna, Euro, Mortlock, Potoroo and Quoll (combined SA and Vic data, 1997 to 2001).

	Hectolitre weight (kg/hl)	1000 grain weight (g)	Screenings % (%<2mm)
Possum	50.5	32.4	6.5
Echidna	48.6	30.1	12.3
Euro	50.8	33.8	8.3
Mortlock	50.7	35.0	7.8
Potoroo	46.8	31.0	13.3
Quoll	46.2	31.3	9.9
No. trials	134	117	135

Table 1.

Table 2. Average protein, oil and groat percentage for Possum, Echidna, Euro, Mortlock, Potoroo and Quoll (combined SA and Vic data, 1997 to 2003 using NIR whole grain analysis).

	Protein %	Oil % (dry basis)	Groat %
Possum	11.3	6.6	71.2
Echidna	11.0	6.3	70.9
Euro	11.1	5.1	73.1
Mortlock	12.8	6.0	72.0
Potoroo	11.9	6.6	71.2
Quoll	11.8	6.3	71.6
No. trials	127	127	126

Table 2.

 **YIELD**

Possum is 10% lower yielding than Echidna in low rainfall regions, 3% lower in medium rainfall regions and 2% higher in high rainfall regions (Table 3). It is higher yielding than Euro and Mortlock in all rainfall regions.

Table 3. Average grain yields of Possum, Echidna, Euro, Mortlock, Potoroo and Quoll as % of Echidna in three rainfall zones (combined SA and Vic data, 1997 to 2003)

Variety	Grain yield (%)		
	<375mm	375-500	>500mm
Possum	90	97	98
Echidna	100	100	100
Euro	84	88	89
Mortlock	75	80	83
Potoroo	100	100	100
Quoll	96	100	101
Echidna's yield (t/ha)	1.9	3.0	3.9
No. trials	35	31	35

Table 3.

Possum has consistently yielded between Echidna and Euro. When stem rust was a significant problem in 2000, it out yielded Echidna by 9% and Euro by 38% due to its superior stem rust resistance.

 **AGRONOMIC GUIDELINES****Herbicide Reaction**

- This variety was tested for the first time in herbicide tolerance trials conducted at Hart in South Australia during 2001. Possum showed susceptibility at recommended rates for applications of 2,4D amine and Dicamba®. There was no effect on yield for applications at the recommended rates of Broadstrike®, Brominil M®, Diuron®/MCPA, Dual®, Diuron® applied post sowing, pre-emergence, Eclipse®/LVE MCPA, Glean®, Terbutryn® and Tigrex®.

ACKNOWLEDGMENTS

Possum is a product from the Oat Breeding Program of S.A. Research and Development Institute. This information is provided by Sue Hoppo and Pamela Zwer, Oat Breeding Program, and Rob Wheeler, Field Crop Evaluation and Agronomy Program, SARDI and Agriculture Victoria (or DNRE)



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Sowing

- Grain yield decreases with delayed sowing for all varieties. Possum is best sown prior to the middle of June. After this time its grain yield relative to Echidna decreases from 98% to 89%. The dwarf varieties Potoroo and Quoll do not change their yield relative to Echidna for all times of sowing.

1000 Seed Weight (grams)	x	Target Plant Population	÷	100	÷	Establishment % x Germination %
.....	

= Your Seeding Rate.....kg/ha

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Growers are allowed to retain seed from production of this variety for their own use as seed only.

An End Point Royalty of \$1.87 per tonne (GST inclusive), which includes breeder royalties, applies to this variety.