

Northfield

A new high quality red lentil for South Australia

Summary

Northfield is a midseason maturing, high quality red lentil. (Tested as ILL 5588)

Northfield is slightly shorter than Aldinga and has improved standability for easier harvesting

Northfield has good late season Ascochyta Blight (*Ascochyta lentis*) resistance which can result in less seed blemish and hence better marketability

Northfield has small plump grain which is preferred for marketing and the grain is more uniform in size and colour

Northfield is a red lentil alternative to Aldinga for planting in South Australia particularly in areas with a high risk of Ascochyta Blight

Northfield like Aldinga and Kye, is susceptible to the leaf disease, Grey Mould (*Botrytis cinerea*)

Northfield is best suited to medium to high rainfall (400 - 600 mm), free draining, alkaline soils in South Australia (pH > 6.0)

Breeding

Northfield was selected by Dr S.M.Ali, Chris Morony and the Grain Legume Breeding Team (SARDI), from a line (ILL 5588) introduced from ICARDA, Syria and registered in February, 1995.

Plant characteristics

Northfield has erect growth, growing to an average height of 30 - 40 cm (slightly shorter than Aldinga) in South Australian conditions.

Northfield is several days earlier maturing than Aldinga and reaches 50% flowering after 115 to 135 days depending on location and season.

Northfield is of midseason maturity like Aldinga, being earlier than Laird and later than Kye.

Northfield has good standability relative to other varieties which may make harvest easier.

	YEAR				
	1991	1992	1993	1994	mean
Northfield	100	100	100	100	100
Kye	107	44	72	70	75
Aldinga	112	119	127	115	120
Northfield t/ha	0.92	0.57	2.28	1.28	
No of trials	(7)	(4)	(6)	(6)	(23)

Grain yield

In trials conducted in South Australia during the seasons 1991 to 1994, the grain yield of Northfield has averaged 32% above Kye and 17% below Aldinga overall.

Table 1 Yields of Kye, and Aldinga as a % of Northfield according to year tested in South Australia

Northfield is widely adapted in S.A. but like Aldinga is best suited to fertile well drained soils in areas receiving more than 400 mm annual rainfall.

The yield of Northfield, relative to other lentil varieties, is consistent across trials and appears independent of rainfall and sowing date.

Disease resistance

Northfield was released in S.A. because it has good late season resistance to Ascochyta Blight (*Ascochyta lentis*) which can reduce the potential for seed infection and discolouration.

Like Adinga and Kye, Northfield is susceptible to Grey mould (*Botrytis cinerea*).

Sowing seed free of disease and the use of fungicidal seed dressings such as P Pickle T ® and fungicidal foliar sprays such as Mancozeb ® will help reduce yield loss and improve seed quality where the risk of Grey Mould and early Ascochyta infection is high.

Grain quality

Northfield seed is pink to orange in colour with no seed coat markings, red cotyledons and is suitable for splitting. The seed of Northfield is attractive, being generally free of blemish caused by diseases such as Ascochyta, and should have better market and export acceptance than other varieties.

The seed weight is smaller than Aldinga, but similar to Kye and ranges from 2.5 to 3.5 g per 100 seeds.

Protein and amino acid content of the grain is similar for Northfield, Aldinga and Kye.

Sowing

Suitable seeding dates for Northfield correspond to those used for peas. However weed control should not be compromised by early seeding as lentils have slow winter growth and are poor weed competitors.

Limited information suggests that seeding rates should aim to establish 120 plants per square metre. The seeding rate will therefore need to be adjusted for grain size and germination percentage (note: Northfield has a smaller seed than Aldinga). At a germination of 80% and weight of 3 g per 100 seeds the desired seeding rate would be 45 kg/ha.

Seed should be sown at 2 to 5 cms depth. The paddock should be rolled following seeding to improve soil to seed contact and to reduce the risk of damage to harvesting equipment.

Nutrition

Northfield should be inoculated with Group E (peas, beans, vetch) inoculum if a Group E crop has not been grown previously in the paddock.

Rates of starter nitrogen, up to 10 units of nitrogen per hectare, may improve early growth. Similar fertiliser practices used for other grain legumes are suitable for Northfield.

Herbicides

Lentils require good weed control since winter growth is slow and the crop is a poor competitor.

The pre-emergent herbicides trifluralin, diuron, metribuzin (Lexone®, Sencor®) and Bladex® can be used on Northfield. Phytotoxicity has been observed in some circumstances (particularly in drier seasons such as 1994) with most of these herbicides on lentils. There are indications that Northfield may have better herbicide tolerance than other varieties.

Most post-emergent grass control herbicides, such as Hoegrass® and Fusilade® (diclofop-methyl and fluziofop-butyl), are suitable to use on Northfield.

Lentils generally, are very sensitive to residues of sulfonylurea herbicides. Label recommendations for minimum recropping intervals must be observed, particularly on highly alkaline soils and following dry seasons when longer intervals may be required.

Insect pest control

Insect pests must be controlled to minimise yield loss and grain damage and maintain seed quality and marketability.

Insect pests important to lentils include red legged earth mite, lucerne flea, native budworm (*Heliothis*), lucerne seed web moth (*Etiella*), and aphids. Insect control practices used for the control of pests in field peas are suitable for Northfield.

Harvesting

Northfield should be harvested as soon as mature since delayed harvest will increase the risk of shattering and may reduce grain quality.

Harvesting should be carried out in cool conditions with low drum speed. Northfield can be harvested using conventional machinery as used for other grain legumes. Crop lifters are generally essential.

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For further information see PI(SA) Fact Sheet FS9/94 "Growing Lentils"

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