

Kaspa

Field Pea

VARIETY SUMMARY

- Exceptionally high yielding semi-leafless, late flowering dun type field pea.
- Excellent pod shatter resistance.
- Good lodging resistance.
- Resistant to downy mildew and improved resistance to black spot.
- Reduced dimpling and uniform grain size.

BREEDING

Kaspa (PSL4) was developed by the Australian Coordinated Field Pea Improvement Program. It was bred at the Victorian Institute for Dryland Agriculture (VIDA), Horsham, with subsequent evaluation in conjunction with NSW Agriculture and the South Australian Research and Development Institute (SARDI), Adelaide.

AREA OF ADAPTATION

Kaspa is well adapted to all the field pea growing regions of south eastern Australia and will perform well in low rainfall areas (<400mm) as well as in the medium to high rainfall regions (>500mm). Adaptation to Western Australia is still to be determined as testing has been limited to date. Peas are not suitable in areas of high frost risk.

DISEASE RESISTANCE

Kaspa is resistant to downy mildew and has improved resistance to black spot (*Ascochyta blight*). Kaspa is susceptible to powdery mildew.

Table 1. Plant characteristics and disease resistance of

| Variety | Leaf Type | Plant Height | Flowering | Harvestability | Lodging Resistance | Pod Shattering | Downy Mildew | Powdery Mildew | Black Spot |
|-----------|-----------|--------------|-----------|----------------|--------------------|----------------|--------------|----------------|------------|
| Kaspa | SL | Med | L | Excellent | MS/MR | R | R | S | MS |
| Parafield | C | Tall | M | Poor | S | S | S | S | S |
| Paravic | SL | Med | E | Good | MS | S | R | S | S |
| Dundale | C | Tall | E | Good | S | S | S | S | S |
| Excell | SL | Med | M | Excellent | MR | S | R | S | S |
| Snowpeak | SL | Med | E | Excellent | MR | S | R | S | S |
| Mukta | SL | Med | L | Fair | MS | S | MR | R | MS |

Plant and Disease Terms: R - Resistant, S - Susceptible, MR - Moderately Resistant, MS - Moderately Susceptible, M - Medium, L - Late, E - Early, C - Conventional, SL - Semi-Leafless

Data source: NSW Agriculture, DPI

SOIL TYPE

Kaspa is broadly adapted to a range of soil types, however on acid soils inoculation is critical.

MATURITY

Kaspa is late flowering, about five days later flowering than Parafield and Dundale and 10 days later than Excell. The stages of pod development and filling progress rapidly, and as such, Kaspa will reach maturity at a similar time to these varieties.

PLANT CHARACTERISTICS

Kaspa is a semi-leafless field pea variety of medium height, slightly taller than Snowpeak. The variety has several distinct characteristics, including its pale pink flowers, and pod shatter resistance. Kaspa is the first variety released in Australia with shatter resistance. Kaspa has excellent early vigour and dry matter production, making it a very good competitor with weeds. Pods are set higher up the plant which improves harvestability and the pod size is large and uniform, with 4-7 grain per pod. Kaspa has good resistance to lodging at harvest.

GRAIN QUALITY

Kaspa produces a medium sized grain with a very attractive light reddish brown seed coat. The seed is more uniform and less dimpled than other commonly grown dun type varieties, which makes it more suitable for splitting. Germination and hydration capacity tests indicate that Kaspa has fewer hard seeds than other dun types, but relatively more hard seeds than white or blue peas.

 **YIELD**

Table 2. In collaborative trials, Kaspa has yielded very well across a range of environments in Victoria, South Australia and in NSW, demonstrating a significant yield advantage over most commercially available cultivars.

| Variety | Victorian results 1995 - 2001 as a % of Dundale | | South Australian results 1995 - 2001 as a % of Alma | | | | NSW results 1995 - 2001 as a % of Excell | |
|--------------|--|----------------|--|---------------|---------------|---------------|---|----------------|
| | Mallee | Wimmera | <400mm | 400-450mm | 450-500mm | >500mm | SouthEast | SouthWest |
| Kaspa | 115(22) | 110(18) | 127(6) | 125(8) | 121(6) | 119(9) | 100(24) | 108(23) |
| Parafield | 108(28) | 106(23) | 115(27) | 113(23) | 111(16) | 110(20) | 110(45) | 108(44) |
| Paravic | 104(41) | 98(34) | - | - | - | - | 98(38) | 100(39) |
| Dundale | 100(41) | 100(36) | - | - | - | - | 92(60) | 94(58) |
| Alma | 100(10) | 99(26) | 100(27) | 100(23) | 100(16) | 100(20) | 92(41) | 95(41) |
| Snowpeak | 107(46) | 104(38) | - | - | - | - | 99(43) | 99(40) |
| Mukta | 107(28) | 104(23) | 109(27) | 108(23) | 107(16) | 106(20) | 107(45) | 107(44) |
| Excell | 105(41) | 100(34) | 109(21) | 108(19) | 107(14) | 107(19) | 100(54) | 100(52) |

Data source: NSW Agriculture, SARDI, PIRSA, DPI

 **AGRONOMIC GUIDELINES**

Sowing

- Sowing highly viable seed uniformly into a firm seedbed that is free of weeds, clods and trash will help increase yields. In general, sowing depth is recommended at between 3 - 5cm, however this should vary according to soil types. Seed sown into soil treated with a pre-emergence herbicide must be kept below the layer of herbicide.
- Optimum seeding rates vary widely across region, however sowing rates should be higher than conventional types and should range between 100-130 kg/ha. Aim to achieve plant densities of 50-55 plants/m². Lower densities are recommended for areas of less reliable rainfall.
- Seed treatments can be applied to the seed prior to sowing to aid the control of black spots, ascochyta and other diseases.
- The Rhizobia strain necessary for effective nodulation of field peas does not occur naturally in Australian soils, therefore, growers should ensure the appropriate E type rhizobium inoculum is applied to the field pea prior to sowing.
- We recommend using the formula to correctly determine seeding rate. Seed counts are supplied with newly purchased seed.

Nutrition

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

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

- Phosphorus is the major nutrient required for field peas, however phosphorus is of low to moderate availability in the majority of Australian soils used for crop production. Paddocks expecting yields of 1.4-2.5 t/ha and which have a good history of

phosphorus management require 9-14 kg/ha actual P to maintain soil reserves. Higher rates of P are required on calcareous and ironstone soils. Fertiliser is best placed in a band close to the root zone at sowing.

- Field Pea crops may benefit from Nitrogen fertilizer applied at seeding, particularly where crop fertility is low and where nodulation may be restricted through late sowing, acid soils or waterlogging. Nitrogen should be applied at rates of 5 – 10kg/ha as at this rate, nodulation will not be affected.
- Sulfur is also required at higher rates for field peas than for cereals. If soil sulfur levels are low, then an appropriate legume fertilizer mix should be applied.
- Zinc is required for field pea production on alkaline soils. Zinc should be applied to soil every 2-7 years depending on soil type, as it lasts longer on loamy soils than on heavy, calcareous clays.

Weed Control

- Weed control prior to sowing and in the early growth stages is critical for success. A wide range of pre and post-emergent herbicides are available.

 **PLANT BREEDER RIGHTS AND ROYALTIES**

Kaspa is protected by Plant Breeder Rights, any unauthorised commercial propagation or any sale, conditioning, export, import or stocking of propagating material of this variety is an infringement under the Plant Breeder's Rights Act, 1994.

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

An End Point Royalty of \$2.20 per tonne (GST inclusive), which includes breeder royalties, applies to this variety.

ACKNOWLEDGEMENTS

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