

Midichi - powdery mildew resistant, bleach tolerant marrowfat pea



Midichi is a high yielding marrowfat field pea variety bred by Crop & Food Research. It is New Zealand's first locally bred marrowfat cultivar and is the product of a joint breeding programme with Midlands Seed Ltd. Midichi has improved bleaching resistance and is resistant to pea powdery mildew.

Key features

- High yielding marrowfat cultivar (evaluated in FAR trials as 2E09)
- Improved grain bleaching resistance
- Resistant to pea powdery mildew
- Suited to both irrigated and dryland environments
- Bred specifically for the Asian snack-food market

Characteristics

Midichi is a spring-sown marrowfat field pea cultivar that produces a crop of medium height and matures early to mid-season. Flowering normally commences at nodes

14-16 and double pods which produce 4-6 grains/pod are set.

Midichi was bred at Crop & Food Research using traditional plant breeding techniques. **Midichi** is not genetically modified.

Excellent grain yields at both irrigated and dryland sites have been reported in FAR Arable Updates where it has been tested as 2E09.

Grain of **Midichi** has a characteristic marrowfat shape with green cotyledons. Grain size is normally similar to Guido, and larger than Maro and Primo. The internal cotyledon colour of **Midichi** is a uniform darker green, which produces a high quality grit for snack production.

Relative grain yield and reactions to powdery mildew of *Midichi* and *Guido* from regional pea trials funded by FAR in Canterbury during 1996/97 and 1997/98.

Cultivar	Chertsey 1996/97 ¹ (irrigated)	Lyndhurst 1996/97 ¹ (dryland)	Chertsey 1997/98 (irrigated)	Lyndhurst 1997/98 (dryland)	Reaction to powdery mildew ²
<i>Midichi</i> (CFR 2E09)	101	103	104	103	R
<i>Guido</i>	100	100	100	100	S
Yield of <i>Guido</i> (t/ha)	4.2	3.0	6.5	2.6	

¹ In addition to *Midichi* and *Guido*, trials in 1996/97 included the cultivars *Maro* and *Primo*.

² Reaction to pea powdery mildew (caused by *Erysiphe pisi*) where R = resistant and S = susceptible.

Management

General agronomic practices should be similar to those used for other marrowfat varieties.

Under normal conditions **Midichi** will stand until pod-fill. Lodging will normally occur at this time, but harvestability is usually similar to other marrowfat cultivars.

Midichi is best sown from mid-September to mid-October. The recommended sowing rate is 310-330 kg/ha. A minimum rotation of four years is recommended between **Midichi** and any other pea variety.

Recent FAR research indicates that peas do not respond to fertiliser (beyond maintenance applications prior to sowing). Excess fertiliser applications may promote too much growth which may reduce lodging resistance or cause problems at harvest.

Midichi has been exposed to most registered pea herbicides with no apparent problems. Ask for advice before applying herbicides.

Midichi will produce high yields if water use is monitored and irrigation carefully scheduled. However, excessive irrigation may enhance disease development or excessive vine growth.

Although **Midichi** has improved bleaching resistance, all green-seeded peas will bleach if left in the field too long. The best recommendation at present is to cut when the first pods on the plants are turning yellow. New Zealand Plant Breeding Ltd can offer further advice on harvest moisture and grain drying.

Diseases

Powdery mildew normally begins to appear in late December and can move rapidly through a pea crop where it can reduce yield, grain size and uniformity of grain size. **Midichi** incorporates genes from conventional plant breeding techniques which confer resistance to pea powdery mildew so fungicide should not be necessary.

Resistance to downy mildew and *Ascochyta* blight is similar to other marrowfat cultivars. These diseases can be managed using good rotational and residue management practices. With good management these diseases would not normally cause problems. Seed treatments offering protection from seedling downy mildew and *Ascochyta* blight are available if these diseases are likely to be a problem. **Midichi** is susceptible to pea seed-borne mosaic virus.

Marketing and Utilisation

The New Zealand Institute for Crop & Food Research Ltd (as Head Licensee of **Midichi**) has appointed New Zealand Plant Breeding Ltd as Seed Production Licensee in New Zealand.

Midichi was developed for New Zealand and international pea export markets. Its use is targeted primarily at high value Asian snack products.

Midichi was granted Plant Variety Rights in New Zealand on 14 July 1999.

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