

Izmir subterranean clover

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ADVANTAGES

- Produces higher levels of hard seed than other cultivars of subterranean clover.
- High hard-seed levels allow it to better withstand false breaks and variable seasonal conditions.
- Improved ability to regenerate after cropping from hard-seed reserves.
- Very early maturity suited to areas with short growing seasons (4.5 months) where rainfall is insufficient for later maturing cultivars to reliably set seed.

PASTURE TYPE AND USE

Izmir is a new, very early maturing cultivar of subterranean clover, intended as an alternative to Nungarin in low-rainfall permanent pastures and in rotation with crops.

ORIGIN

It originates from seed collected in Turkey and was selected by the National Annual Pasture Legume Improvement Program (NAPLIP) as a harder seeded, early maturing alternative to Nungarin. It was evaluated under the code SE008.

AREA OF ADAPTATION

Izmir is suitable for pastures in low-rainfall areas of the wheat belt of NSW. It has a growing season extending until late September.

MINIMUM AVERAGE RAINFALL

It requires a minimum annual rainfall of 350 mm (southern NSW) and 475 mm (northern NSW).

OESTROGEN

Izmir has very low levels of the oestrogenic isoflavone, formononetin (approximately 0.1%). It has very low potential to cause clover disease.

LEAF MARKINGS

Izmir has a pale green 'crescent' shaped leaf mark (C3) with faint white 'arms' (A1) which fade in spring. Leaflets have a purplish brown anthocyanin marking along the mid rib when growing in colder conditions during winter. Stipule pigmentation is weak to intermediate, and calyx tubes have red pigmentation extending three-quarters along their length. Stems, peduncles and upper leaf surfaces are strongly hairy, but petioles have few hairs. (See [Subterranean clover in NSW — identification and use](#), Agfact P2.5.16, for descriptions of leaf markings.)



Izmir leaf showing pale green crescent leaf marking and slight mid rib anthocyanin pigmentation.



SEED

Izmir produces small black-coloured seed, slightly smaller than Nungarin and much smaller than Dalkeith. It has a mean seed weight of 4–5 mg/seed.

MATURITY

Flowering time is very early, similar to Nungarin and approximately 2 weeks earlier than Dalkeith. Izmir is best suited to short growing season environments.

HARD SEED

It is more hard seeded than most other subterranean clovers, with a laboratory hard seed test value of 67% compared to 50% for Nungarin. The high level of hard seededness will be an advantage where seed set is unreliable or false breaks are common.

DISEASE AND PEST RESISTANCE

Glasshouse data suggests that adult plants have moderate resistance to both Race 1 and Race 2 of clover scorch disease (*Kabatiella caulivora*), while seedling resistance is unknown. Clover scorch is unlikely to be a problem in low-rainfall areas with a short growing season, where the cultivar is best suited. Seed growers in higher-rainfall areas may need to undertake disease control in some years.

Izmir is susceptible to *Cercospora* leaf spot. It has a similar susceptibility to that of Nungarin. Izmir is moderately susceptible to leaf rust (*Uromyces repentis-trifolii*). Neither of these diseases is common in the target low-rainfall growing areas.

Izmir has similar susceptibility to redlegged earth mites (*Halotydeus destructor*) as other subterranean clover cultivars. Spraying to control mites is recommended if mites occur in the establishment year. Susceptibility to blue oat mite is unknown.

SOIL REQUIREMENTS

Izmir has similar requirements to most subterranean clovers. It prefers well-drained soils with a pH (Ca) > 5.0 but will grow in pH (Ca) 4.5. It is moderately tolerant of soil aluminium (<15% of CEC).

INOCULATION

It requires inoculation with Group C inoculant.

COMPANION SPECIES

Izmir can be sown alone or in mixtures with the earlier flowering cultivars Nungarin, Dalkeith or Seaton Park.

SEED PRODUCTION

Izmir is protected under Plant Breeder's Rights (PBR). Seed yields are similar to those of Nungarin. As a result of higher hard-seed levels, seed reserves after several years can be 50%–90% higher than other early cultivars.

Seed reserves can be high enough to allow natural regeneration after cropping for a season.

SEEDLING REGENERATION

Izmir will have a distinct advantage over Nungarin and Dalkeith in areas such as Condobolin where false breaks can deplete seed reserves and reduce seedling regeneration. Seedling densities may be slightly lower than Nungarin in the absence of false breaks due to the higher levels of hard seed.

HERBAGE YIELDS

Winter herbage production of Izmir was on average 10% greater than Nungarin, and spring production about 7% higher. Izmir also produced about 4% more herbage in winter than the later flowering cultivars Dalkeith and Urana. Due to its earlier maturity, spring production of Izmir will be less than Dalkeith and Urana, which both grow for longer in spring if moisture allows.

PASTURE IMPROVEMENT CAUTIONS

Pasture improvement may be associated with an increase in the incidence of certain livestock health disorders. Livestock and production losses from some disorders are possible. Management may need to be modified to minimise risk. Consult your veterinarian or adviser when planning pasture improvement.

The *Native Vegetation Conservation Act 1997* restricts some pasture improvement practices where existing pasture contains native species. Inquire through your office of the Department of Infrastructure, Planning and Natural Resources for further details.

FURTHER READING

See *Subterranean clover in NSW — identification and use* (Agfact P2.5.16), available at:

www.agric.nsw.gov.au/reader/past-varieties/p2516a.htm

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