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Herbage Development Fact Sheet 6 • By Eric Hall and Andrea Hurst

Caucasian or Kura clover cv. Kuratas(þ)

(*Trifolium ambiguum* M.Bieb.)

Origin
Recurrent phenotypic selection: 5 cycles of recurrent phenotypic selection for vigour, winter activity, seed production, early rhizome production and anthocyanin leaf marker within the breeding line "Townsend" donated by Dr C E Townsend through the North East Regional Plant Introduction Station, Geneva, New York, USA June 1986. Breeders: Eric Hall and Andrea Hurst, Tasmanian Institute of Agriculture (TIA), Mt Pleasant Laboratories, Launceston, Tasmania.

Description
Ploidy: Hexaploid.

Major attributes
Very persistent, rhizomatous perennial clover with a large taproot. Kuratas(þ) was selected for increased winter production (Fig. 1) and seed production (Fig. 2) over the currently available cultivar. Rhizomatous growth habit provides protection from heat, drought, cold and grazing. Best adapted to well drained sandy loam to clay loam soils in all rainfall zones. Kuratas(þ) has excellent forage quality of high feed value. Reported to be an excellent honey producing plant.

Seasonal production
Highest herbage production is in spring and summer. Low production in autumn/winter, although Kuratas(þ) has been selected for improved winter production.

Drought tolerance
Kuratas(þ) has a very high level of drought tolerance in Tasmania's cool temperate environment.

Cold tolerance
Very high.

Waterlogging tolerance
Will tolerate poorly drained soils.

Salt tolerance
Poor.

Soil and climate requirements
Adapted to a range of climatic conditions and soil types pH 5.0 to 7.5. In Tasmania Kuratas(þ) has survived years where annual rainfall has been below 300mm. Can grow in soils with low fertility levels but responds well to fertiliser.

Maturity
Begins flowering in mid October. Seed is mature by mid January.

Seed size
Thousand seed weight 1.623gms (white clover 0.636gms).

Hard seed
Moderately hard. 40% hard seed.

Seed treatment
Seed must be scarified and inoculated with appropriate rhizobia prior to sowing.

Rhizobium
Requires a specific strain of Rhizobium, cc283b.

Sowing methods
Drilled, direct drilled or broadcast.

Sowing depth
No deeper than 10mm.

Sowing rate
3-6 kg/ha, depending on seedbed quality

Sowing time
Late summer to early autumn for sufficient seedling development prior to winter, but preferably in early spring.

Land preparation
Well-cultivated firm seedbed required for best results. For direct drilling or broadcasting there should be as little vegetation as possible and adequate soil moisture prior to sowing.

Compatibility with other species
Non-aggressive grasses are the best companions eg, Spanish cocksfoot, phalaris and tall fescue.

Suggested mix
Kuratas(þ) is best suited to sowing with grasses with low to moderate seedling vigour, Hispanic cocksfoot, winter active tall fescue or phalaris.

Seedling vigour
Kuratas(þ) has been selected for its improved seedling vigour. Initial emergence and vigour through to three true leaves is excellent, but then leaf development slows as energy is used for root and rhizome development.

Grazing management
Forage production in the first year will be low and management should be concentrated on maximising the chances of successful establishment and be considered an investment that will provide returns for years to come. Once established the plant can withstand extremely heavy grazing. Kuratas(þ) will be more productive if given regular rest periods.

Dry matter yield
Up to 3 t/ha DM/year achieved under dryland conditions at low rainfall site at Jericho, Tasmania (mean annual rainfall 550mm). Much higher yields (>10tDM/ha) achieved by Caucasian clover in dairy pastures in New Zealand (Watson 1996).

Feed value
High.

Typical feed test figures

Crude protein (%DM)	19.7
Digestibility (%digestible DM)	80.9
Metabolizable energy (MJ/kg DM)	11.9

Anti-quality factors
May be some risk of bloat for stock grazing pure stands.

Pollination requirements
Honey bees and or bumblebees.

Seed harvest methods
Direct heading, cutter rowing. Excellent seed retention when mature.

Seed yields
Kuratas(þ) has been selected for increased seed production with yields of just under 1 t/ha achieved in small multiplication blocks.

Diseases
May suffer from powdery mildew if ungrazed in areas or years of high summer rainfall.

Pests

Resistant to pasture grub and corbie attack. Red-legged earth mites may cause damage to young seedlings.

Herbicide tolerance

Tolerates all broadleaf herbicides commonly used on pastures.

Animal performance

No data available at this stage.

Reference

Watson R. N. *et. al*. Caucasian clover as a pasture legume for dryland dairying in the coastal Bay of Plenty Proceedings of the New Zealand Grassland Association 58: 183–188 (1996).

Figure 1 (above right): Highlighting the winter activity of Kuratas(þ) vs Endura Caucasian clover.

Figure 2. Kuratas(þ) seed block.

(þ) Variety is protected by Plant Breeders Rights