

It nodulates satisfactorily with Rhizobium strain TA1 contained in Australian commercial inoculant "B". It is cross fertilized and insect pollination is required for satisfactory seed set (2). It has some oestrogenic potency, green forage containing isoflavones including formononetin in excess of 1% on a dry weight basis (3).

Useful for grazing or hay and better able to withstand close grazing by sheep than the earlier flowering and more erect types (2,5). It is, however, slower to establish and generally less vigorous than Grasslands Humua and tends to be suppressed by other pasture species in the first year of sowing. This lack of competitive ability and lower productivity may, under many conditions, largely offset its advantages of greater perenniality as compared with the early-maturing types (5).

#### References

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# Register of Australian Herbage Plant Cultivars

## B. Legumes

### 1. Clover

#### *Trifolium pratense* L. (red clover) cv. Grasslands Turoa

Reg. No. B-1b-1

Registered prior to December 1971

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#### Origin

Prior to 1964 known as New Zealand Montgomery Red Clover (1) and first certified on pedigree basis in New Zealand in 1939. Developed by Grasslands Division of D.S.I.R., New Zealand, by selection from New Zealand-grown Montgomery-shire late-flowering red clover. Montgomeryshire red clover had been grown in New Zealand from seed imported from England for some 10 years before the selection work of D.S.I.R. was effected (7,11). The Montgomeryshire clovers from which the New Zealand stock was derived have been described by R.D. Williams (9). They were of the "Mammoth", "single cut", or "late flowering" type.

#### Morphological description (6,10)

Short-lived perennial of compact and dense rosette habit in early growth, becoming semi-erect later and at flowering. Numerous tillers arise from a low crown; the tillers have an average of 13-19 internodes and the development of laterals gives each tiller a fan-like form (4). A strong tap root is formed. Leaflets oblong or ovate, notched or with entire margin, very hairy on both surfaces, with widely spaced branched veins, with no markings or a central light green crescent, and borne on hairy petioles; hairs uniseriate and minutely tuberculate. Stipules large, broad at base, and adnate to petiole, bearing long coarse hairs on abaxial surface, membranous and with conspicuous greenish purple veins, the free part triangular tapering to a point. The inflorescence is a large terminal dense head of many (100 or more) flowers on a short peduncle above pair of small leaflets with large stipules and very short petioles. Flowers small, mostly purplish pink; calyx tube ribbed, 10-veined, hairy with five teeth, the lowest longer than the others, all erect in flower and spreading in pod. Pod contains one seed and the top portion splits off when mature. Seed compressed ovoid, asymmetrical, radicle lobe much shorter than cotyledonary lobe and appears as projection on one side of seed, furrow usually indistinct, hilum lateral, most commonly dark purplish at base and apically yellow, but amount of each colour varies and seeds are from yellow to purple. Number of seeds approx. 550,000 per kg.

Differs from cv. Hamua mainly in less erect growth habit, denser crown, and shorter but more numerous internodes. The leaflets are also slightly smaller and more hairy and the stipules also are not as coarse. In cv. Turoa there is usually a group (10 or more) of short internodes at the base of each tiller; these short basal internodes are never found in cv. Hamua (4).

#### Agronomic characters

Adapted to a cool temperate climate and requires a rainfall of 610 mm or more principally of summer incidence. It prefers well-drained soils of pH 5.8-6.2 or more and of fairly heavy texture (2). It is generally reported as not thriving on acid soils but on the Central Tablelands of New South Wales it is being used successfully as a pioneer clover on poor low-fertility acid soils (pH 5.0-5.2) because of its ease of establishment and vigour (8).

It is winter-dormant and winter-hardy. Growth begins later in spring and flowering is later than in Grasslands Hamua. Summer and autumn growth are good and it gives a longer and leafier autumn aftermath than Grasslands Hamua (2,5). It will maintain production in late autumn when low soil moisture may limit the growth of white clovers. It may also give relatively high production under conditions of low soil fertility (2,8).