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Clovers in the Nilgiris *

by

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Synopsis: A brief report on the performance of a few species of the genus Trifolium on the Nilgiris is furnished in this paper.

Introduction: The importance of legumes in agriculture is too well realised to need reiteration. The role of clovers in particular and in relation to soil fertility, nutritional aspects as association with grasses under pasture conditions and conservation farming has been the subject of a great deal of attention in western countries. In India, interest on this aspect is of comparatively recent origin. The origin of clovers is believed to be south western Asia Minor and south eastern Europe, for it is in this general location that the greatest number of species with wide diversity of forms is found (Mckee, 1948). There are nearly 250 species of *Trifolium* found throughout the world. In general, they come up well under cool moist conditions. The clovers have both perennial and annual types. Many of the perennial types behave as annuals under unfavourable climatic conditions. In the Nilgiris, the clovers seem to have conditions more or less similar to their land of origin.

Baker, as early as 1897 in the Flora of British India reports *Trifolium repens* on the Nilgiris with the remarks, "Perhaps introduced". Fyson (1915) mentions of *T. repens* and *T. minus (probably T. dubium)* on the Nilgiris. But Gamble in 1915, records three species viz. *T. pratense, T. repens* and *T. dubium* as having been "Introduced and run wild". Till 1936, these are the only species which are reported to have been noted on the Nilgiris (Sampson, 1936). Records show the attention bestowed on this group by official agencies around the year 1883–84 when seeds of white clovers *(Trifolium repens)* were obtained and sown in stands of the grass Hariali *(Cynodon dactylon)* in the lawns of the Government House Gardens, Ootacamund in an effort to improve the conditions of the latter with successful results. Later in 1938, a small quantity of seeds of subterranean clover *(T. subterraneum)* would appear to have been tried in the Government farms in the Nilgiris, with particular success at Ootacamund and Nanjanad with luxuriant growth, seed formation and withstanding the severe winter conditions obtaining on these hills. Encouraged by these early reports of the past, work on this aspect was taken up by the Botany Section, Agricultural College and Research Institute, Coimbatore from the year 1951 onwards with introduction of the various species and strains of the clovers. A brief report on the performance of the species of the genus *Trifolium* on these hills, is given below, including those more or less naturalised under Nilgiris conditions. Apart from giving a

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continuity of account of the trials of this group of plants in the past, they also provide useful hints on their potentialities for future exploitation for varied purposes like pasture association, soil cover, conservation etc.,

Performance of *Trifolium* spp. on the Nilgiris: (i) *Trifolium dubium* Sibth *(Yellow suckling clover):* This is a slender spreading clover with minute foliage and flowers, forming thick patches of stands amidst Kikuyu *(Pennisetum clandestinum)* grass. It is found rather commonly at higher elevations in a natural condition. Though not important from the quantity of herbage produced or denseness of foliage, it comes up well with good flowering (minute yellow flowers in clusters) and seeding habit. The seeds get self-sown and come up well with the first rains. Its successful association with kikuyu points to possibilities in evolving suitable mixture and management practices. An acre yield of 4008 Kg. of green foliage in two cuttings was recorded at Ootacamund.

(ii) *Trifolium repens* Linn - (White clover) - This has now become naturalised at Ootacamund and can be seen to come up well in association with kikuyu *(Pennisetum clandestinum)* on roadsides, waste places, lawns etc. It produces fairly good amount of herbage, flowers and seeds profusely and though frost affected, produces a good crop of self sown seedlings with the first rains. Apart from this, trials from the year 1951 showed very good promise of this species under conditions obtaining at Ootacamund, Nanjanad and Coonoor with dense foliage cover, having recorded an yield of 4360 Kg. of green herbage per acre per year, with vigorous growth, flowering and seeding. Lower down at Burliar, its performance was not found satisfactory in repeated trials.

The introduction of Ladino clover (a variety of white clover) in the same year 1951 at Ootacamund, Nanjanad and Coonoor proved to be a further improvement over the ordinary white clover. This had better spread, vigorous growth, dense foliage, profuse flowering and seeding habit. This had excelled the ordinary white clover in all respects but was winter killed. Its performance at Coonoor at about 6000' elevation was better due perhaps to the milder winter.

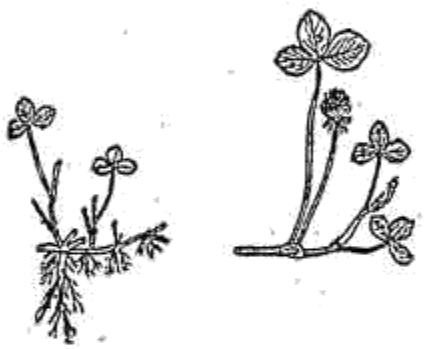
(iii) *Trifolium subterraneum* Linn *(subterranean clover):* This species was quite successful from the point of view of growth herbage production. The spread, however, was not promising and seed production was poor. One of the strains of this species received from Denmark came up well with good vigour and spread at Ootacamund at the State Soil Conservation Centre than at other places. An acre yield of 8189 kg. of green herbage in a single cut was recorded at this centre at Ootacamund. Due to paucity of seed setting, further work on this was handicapped.

Conclusion: Besides the above clover types, other species tried were different strains of Aberystwyth white and red clover, *Trifolium ruppellianum* and *Trifolium tembense.* These did not show promise of success under Nilgiri conditions. The trials, however, have indicated the suitability of five species of clovers to Nilgiris. Winter hardiness continues to be a problem to be tackled.

Trifolium subterraneum

T. dubium

T. incarnatum



T. repens

It is hoped that further trials with new introductions of various strains or species from the temperate zones or countries, may result in the isolation of winter hardy types, which would be capable of being naturalised under pasture conditions in the higher elevations of Nilgiris.

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