

of September, the plants start flowering. Even if the plants are not cut for hay in the month of October, they naturally completely dry up by the close of the month of November.

*T. quadrivalvis* belongs to the tropical and sub-tropical regions of Old World, chiefly Indo-Malayan (cf. Blatter and McCann, 1935). In India it occurs in North-West India, Madhya Pradesh, Western Peninsula, Bihar (Haines, 1924), and Naga Hills (Bor, 1960). Hitchcock (1951) describes it as an introduced grass in U.S.A.; established on bottom land, near Oplousas, St. Landary Parish, La. Also introduced in the West Indies and East Indies. This excellent fodder grass thus has restricted distribution.

The present investigations have been undertaken to understand the causes for the restricted distribution of the species and to work out the optimum feed value of the grass when it may be harvested for hay.

## RESULTS AND THEIR INTERPRETATION

### I. Seed and its Germination

(i) *Size, shape and weight.*—The seeds are oblong-lanceolate in shape. Length of the seeds varies from 4.12 mm to 7.88 mm (Mean 6.25 mm; Standard Deviation (S.D.)  $\pm 0.9068$ ). The breadth varies from 0.91 mm to 1.12 mm (Mean 1.014 mm; S.D.  $\pm 0.0831$ ). The weight of a single seed varies from 1.7812 mg to 2.1534 mg (Mean 1.9375 mg S.D.  $\pm 0.1249$ ).

(ii) *Seed output.*—Seeds ripe from down upwards. Average seed output, calculated in 30 stands of the association, is 1,332 per plant (Minimum 624; Maximum 2,000).

(iii) *Germination.*—Seeds were collected in the month of October and put for germination immediately. There was no dormancy. Germination experiments were set in the months of April–May in the subsequent year but before the seeds would otherwise germinate in nature. Following treatments were given to the seeds:

- (a) In different light exposures.
- (b) Sulphuric acid scarification.
- (c) Electric shock of 8 volts for  $\frac{1}{2}$  hour.

Germination was effected in petri-dishes in between wet filter-papers. Three replicates were set for each treatment.