DECOMPOSITION OF CROTALARIA JUNCEA UNDER FIELD CONDITIONS

B. N. Singh and S. N. Singh

In India the commonly used green-manuring crop, *Crotalaria juncea*, is generally sown with the onset of the rains and is plowed under when about half grown. The succeeding crop is sown in winter, in the middle of October, unless the field is prepared for sugarcane which is generally sown in the months of February and March. The interval between the turning under of the *Crotalaria juncea* and the sowing of the winter crop is intended to allow for the decomposition of the incorporated material. To a large extent the success of the following crop depends upon the degree of decomposition attained.

In a previous communication, dealing with the chemical analysis of *Crotalaria juncea*, it was shown that the potential manurial efficiency of this plant is quite high, but that in common practice only a fraction of its real value is realized. The explanation for the difference between the expected and the observed manurial values of this plant seemed to lie in the part that the various plant organs contributed and suggested a further study of the rate of decomposition of these parts. Hence, this paper deals with the rapidity, order, and degree of decomposition of the different organs of *Crotalaria juncea* under field conditions.

EXPERIMENTAL TECHNIC

The experiments were conducted in lysimeters, located in the Experimental Farm area of the Institute. During the last four years all lysimeters received the same type of treatments. Each year they were planted with wheat in winter and left fallow during the rest of the year. No artificial fertilizer or organic manure were applied.

In June 1936 *Crotalaria juncea* was sown broadcast in an adjoining field. In the last week of August the plants were dug, the various parts separated, and mechanically disintegrated and added to different lysimeters. At regular intervals the soil

1 Contribution from the Institute of Agricultural Research, Benares Hindu University, Benares, India. Received for publication May 13, 1937.
2 Director of the Institute and Research Scholar, respectively.