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Review of Literature on Rainfall as Fe i

By

C. BALASUBRAMANIAM

and

M. V. JAYARAMAN

Besides supplying water, which is inevitable for pla rainfall acts also as fertilizer by supplying to plants certain mi N, P, S, Cl, Ca, etc. Even from the days of Leibig (1847) th value of rainwater has been a highly controversial problem, r in regard to Nitrogen.

In the latter half of the nineteenth century analysis of received the attention of the scientists in most of the European In majority of the analysis the duration of study extended to periods and this might have been the reason for the conflictin the results. N. H. J. Miller of Rothamsted studied it as his lif for 13 years (1888—1889 to 1900—1901) and concluded that rai enrich Nitrogen content of the soil in an area of one acre to the t per year. The analysis of rainwater for the period 8888 revealed that at Madras an average rainfall of 39·21″ could add of soil 1·91 lb. Nitrogen per year.

With reference to Dehra-Dun and Cawnpore, J. Walt (1906) has reported that 86·48″ and 49·36″ of rainfall could rc add to an acre 3·405 lb. and 3·250 lb. of Nitrogen per year. and Rustan have reported 7·8 lb. to 18·4 lb. of nitrogen pe different stations at Leeds. The high figure at Leeds may be proximity of the field to the industrial concerns. Majority of the different places have reported 3 to 4 lb. of ammonia per annum.

In regard to other minerals, N. H. J. Miller at Rotha determined 14·87 lb. of Cl. per acre per annum and 17·41 lb. o acre per annum. R. C. Collisson of Geneva (New Yark) repc study of ten years data, an average of 41·25 lb. of sulphur per annum and 15·67 lb. of Cl. per acre per annum could be ad soil by rainfall. The same author states that 59·36 lb. of $Hc0_3$ i from rainwater per acre per annum with a wide range of v 11·95 lb. in 1926 to 91·86 lb. in 1922.

Ingham (South Africa, 1950) reports that in addition to t elements gained by the soils from rainfall, the soils themselves, their organic and inorganic colloidal contents, absorb huge qu mineral substances and thus replenish themselves. He contend

physical nature of the soil is responsible for fixing atmospheric nitrogen etc., even though the bacteria play some part in the fixation of atmosphic nitrogen in the soil. He reports that pure cellulose like Watmann Filter papers can absorb 40 to 50 p. p. m. of nitrogen in 24 hours, by purely physical process, and when calculated on acre basis this can add 30 to 50 lb. of nitrogen per acre per annum.

Ingham (1950) states that moist soil absorbs twice as much nitrogen as that contained in rainwater itself and rainwater improves the efficiency of the soil two fold. Rainwater allowed to stand in a porcelain dish absorbs as much ammonia in 24 hours as to supply 9·7 lb. per acre per annum.

The absorption by organic colloids is not confined to nitrogen alone but applies equally to lime, phosphate, potash and other mineral substances. Ingham (1950) reports that leaves of trees, still attached to plants can absorb a good lot of these mineral substance from the atmosphere and rain falling over these trees bring down a good lot of mineral elements. The following table is presented by him to show the change in mineral content of rain after falling over trees.

	From rain only	From drips from trees
	Lb. per acre per annum	Lb. per acre per annum
NH_4N	9.5	28·6
No_3N	1·1	1·1
Cl	162·8	411·4
Cao	95·7	337·7
P_2o_5	3·7	22·0
K_2o	42·9	287·2

It was observed that the leaves absorb further quantities of these substances in a few days after leaching.

In conclusion it may be stated that intensive research on the manurial value of rainfall with reference to different zones in any country may even alter the manurial requirements of cultivated economic crops in that country.