SHORT SCIENTIFIC NOTES

Ear Blight and Scab of Wheat in Arunachal Pradesh

Samples of wheat (Sonalika, Kalyan Sona, Safed Lerma, Lerma Rojo) infected by *Fusarium avenaceum* (Fr.) Sacc. causing 'ear blight' were received from Jomlo seed farm of Along, Siang District (Arunachal Pradesh) in February, 1970. Subsequently this was also recorded on samples received from Gauhati (Assam). Colony on PDA, white with rosy tinge and profuse aerial growth. Conidia 3–5 (— 6), mostly 5 septate, curved but middle portion almost straight and gradually pointed at the ends, (20 —) 25–44 × 3° 3–5 μ.

In April, 1973, another sample of wheat earheads (Kalyan Sona) was received from the same localities of Arunachal Pradesh including Kabu and found to be affected by a different malady, 'scab' caused by *Gibberella zeae* (Schw.) Petch. Innumerable black, gregarious, occasionally solitary perithecia were found on the glumes. Conidia were also observed in a pinkish mass. The first symptom appeared as drying up of only 3 to 4 spikelets which spread to the entire earhead within a month.

Individual perithecia: bluish, sometimes with violet tinge, osticlate, may or may not be shortly beaked, ovoid, 124–174 (diameter) × 180–250 (height) μ; asci clavate, short pedicellate, 58–83 × 10–13·3 μ; ascospores arranged irregularly biseriate, hyaline, fusiform with rounded ends, straight or dorsoventral, 3 septate, constricted at septa, 18·3–25 × 3·7–4·6 μ. Conidia like above and measure (27 —) 40–60 × 4·2–5·8 μ.

F. avenaceum causes foot rot, seedling blight and ear blight of wheat in Europe, U.S.A., Canada, Australia and New Zealand and *G. zeae* scab in Europe, U.S.A. and Canada[1] but this seems to be the first record for both these diseases in India. However, *F. avernaceum* has been isolated from soil in Madras[2] and *G. zeae* as *G. saubinenti* (Mont.) Sacc. recorded on earheads of rye in Shillong[3].

As the diseases are favoured by a temperature ranging from 10° C and above with wet environment[1], weather at Along which was found near to these conditions (R.H. 84·4 to 93·4%, rainfall 42·4 to 86·8 mm, Min. temp. 11·1 to 13·5° C and Max. temp. 20·1 to 24·1° C) during January–March seem to be responsible for heavy occurrence of scab in 1973.

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Assam Agricultural Univ., A. K. Roy.
Jorhat-785013,
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1. Butler, E. J. and Jones, S. G., *Plant Pathology* Macmillan & Co., London, 1955.
2. — and Bisby, G. R., *The Fungi of India* (Revd. by R. S. Vasudeva), I.C.A.R., New Delhi, 1960.
3. Chowdhury, S., *Curr. Sci.*, 1947, 16, 152.

Computer Program for Estimating Stability Parameters in Crop Plants

Evaluation of crop varieties for their suitability for general cultivation under varying ecological and agroclimatical systems, is of prime concern to plant breeders in thier breeding work. The stability of the newly synthesised superior performing genotyped are tested by exposing them to varying environmental stresses over years and locations. A number of statistical parameters have been used in the past to measure this inherent potentiality of the cultivars to withstand these environmental rigours and stresses.

A statistical model

$$\gamma_{ij} = pv_i + \beta_i I_j + \delta_{ij}$$

proposed by Eberhart and Russel[1] (1966), however. is the one now being widely used. Eberhart and Russel (1966) has defined a stable variety as one with regression of individual mean yield on environmental index (b) = 0, and deviation from regression (D^2 di) = 0.

A computer program which estimates all these parameters has been developed and documented for the Indian Made TDC-12 Computer. The program is written in 4 = — K fortran language. With suitable modifications in the dimension statement, the program can handle a large number of varieties in many years and locations. Presently, it handles 25 varieties grown over 4 seasons at the Horticultural Research Centre. Patharchatta, GBPUAT. Pantnagar (U.P.).

The computer output contains, means of varieties over-all the locations, regression of individual mean yield on environmental index, deviation from regression. test of deviation from regression for