This would indicate that miniature seed (mn) is located between v_4 and gl_2 having 16% recombination with v_4 and 38% recombination with gl_2.

Joseph Van Horn

PUNJAB AGRICULTURAL UNIVERSITY
Ludhiana, India
Department of Plant Breeding

1. Variable reaction of the monogenic resistant varieties Lady Finger Pop Corn and G.E. 440 to H. turcicum.

Lady Finger Pop Corn (PI. 217407) and inbred G.E. 440 have been reported by Hooker (1963) to carry dominant monogenic resistance to H. turcicum, the causal organism of the northern leaf blight of maize. He further observed that the genes controlling restricted chlorotic type of lesions in the two cultures were either alike, allelic or very closely linked. Recently Sharma and Aujla (1966) for the first time observed that the variety Lady Finger Pop Corn was highly susceptible to leaf blight in the northern hills of India (Kulu Valley). Since this observation differed from the report by Hooker, it was thought that the H. turcicum culture prevailing in India may be a different biotype than the isolates used by Hooker for studying the reaction of the variety. Prompted by this, it was thought desirable to study the reaction of G.E. 440 also to the prevailing biotype in the field inoculum.

The observations were taken on Lady Finger Pop Corn as well as on G.E. 440 at two different locations, viz. Bajaura (Kulu Valley) and Hyderabad. The reaction type on the two cultures was characteristically distinct at both places. On G.E. 440 the lesions were typical as described for the inbred by Hooker giving a restricted chlorotic type, while in the case of Lady Finger Pop Corn the lesions were clearly of the susceptible type as reported earlier by Sharma and Aujla. Later on these findings were confirmed under controlled conditions at the seedling stage in pots at Bajaura.

This sort of differential reaction of the two varieties indicates the presence of either different alleles at the same locus or different closely linked genes. The study is in progress and an F_2 population from the cross between Lady Finger Pop Corn and G.E. 440 will be studied for reaction to leaf blight in the 1968 rainy season.

D. Sharma
S. S. Aujla

UNIVERSIDADE DE SÃO PAULO
Piracicaba, Brazil
Escola Superior De Agricultura "Luiz De Queiroz"
Instituto De Genetica

1. Determination of amino acids in maize through a microbiological method.

Since the discovery that varieties of maize containing the opaque-2 (o-2) gene have higher amounts of certain amino acids, mainly lysine, there is

an increased interest in the analysis of other varieties of maize for their content of lysine and other amino acids. As it is frequently not possible to have access to an amino acid analyzer, other methods, such as microbiological ones, can be used for this purpose. We have developed a simple microbiological method for the assay of methionine, lysine and phenylalanine which can be used for maize. The three amino acids were assayed through nutritional deficient mutant strains of the fungus Aspergillus nidulans by a technique first developed by Princivale and Caradona (Rend. Inst. Sup. Sanitá, 26, 75) for the microbiological assay of vitamins. In our case, the diameters of the growth zones for the amino acids were linear functions of the logarithms of the doses for solutions of 15.625 ug/ml to 500 ug/ml for methionine and 156.25 ug/ml to 5000 ug/ml for lysine and phenylalanine. Using an acid hydrolysate of endosperm of opaque-2 maize, the results obtained were comparable with those found through the use of amino acid analyzers. In conclusion, the method presents several advantages: the media used are simple inexpensive preparations; the strains can be maintained for years without changing properties; the standard deviation obtained was never more than 9%; the fungus is resistant to penicillin so that this antibiotic can be added to the medium reducing the danger of contamination during the assay; responses are highly specific and are not influenced by other substances. The method can be useful for those people who have no facilities for analyzing their local varieties of maize for amino acid content through an amino acid analyzer.

J. Lucio De Azevedo
J. C. S. Cavenague
P. M. Lacava

2. A preliminary report on the literature related to the history of the races of maize in Brazil.

Although in certain areas of Latin America the variation among the races of maize is very great, the races of maize from the lowland regions of southeastern South America encompassed by eastern and southern Brazil, Uruguay, Paraguay, eastern Argentina and certain parts of Bolivia have relatively little variability. The region was occupied by several different Indian groups which are known to have cultivated maize and from which Brieger et al (1958) managed to obtain collections. The descriptions of maize encountered in the literature are remarkably consistent with those of ethnologists who have observed the remnant Indian populations in recent years. Although there appears to have been some transposition of names, the collections of maize described by Brieger et al seem to correspond quite well to the early descriptions also.

The earliest descriptions[1] (Thevet, 1556; Lery, 1578; Souza, 1587) indicate that the maize commonly encountered in the coastal regions of Brazil was a

[1]The non-twentieth century dates cited are those of the earliest known editions except in case of extreme delay in publication for which the actual year that the article was written is cited.