

Acknowledgement: Without the extensive help unselfishly provided by the members of the Programa Cooperativo de Investigaciones en Maiz, Universidad Agraria, La Molina, Peru the field study on plant color would have been impossible. They also made all of their corn collections available to me. I would like to specifically thank Ings. Sevilla, Cerrate and Scheuch for their personal attention.

Once again I would like to thank the Maize Laboratory of the University of Illinois for providing field space and support for all the breeding work conducted during the past three years.

*Future Address: As of September 1, 1968 the address of this laboratory will be--The Biological Sciences Group
Genetics and Cell Biology Section
The University of Connecticut
Storrs, Connecticut 06268

OSMANIA UNIVERSITY
Hyderabad, India

1. Protein and amino acid content studies in single crosses of Indian hybrids.

The eight single crosses of Deccan hybrid, Ranjit, Ganga 101, Ganga-3, and opaque-2 as control have been analyzed for crude protein and for lysine, tryptophan, and methionine content. The procedure and technique used were the same as described earlier (M.N.L. page 162, 1967). The results are presented in Table 1.

Table 1
Protein and amino acid composition of single crosses of maize.

Variety	Single cross	Crude protein %(N \times 6.25)	Amino acids (gms/16gms N)		
			Lysine	Methionine	Tryptophan
Deccan hybrid	CM 104x105	11.42	2.90	1.94	0.42
	CM202x201	10.55	2.82	1.97	0.45
Ranjit	CM 103x104	12.69	2.70	1.86	0.43
	CM 202x106	11.47	2.57	1.76	0.44
Ganga-101	CM 103x104	12.69	2.70	1.86	0.43
	CM 201x105	11.53	2.54	1.91	0.47
Ganga-3	CM 202x111	8.94	2.84	2.35	0.33
	CM 109x110	9.20	2.82	2.83	0.43
Opaque-2		9.90	4.74	1.74	0.55

A negative correlation was found between methionine content of protein and the protein content for 16 varieties. The correlation co-efficient (r) is -0.54909 and the regression line was found to be $y = 3.2139 - 0.1142 x$. However, when the six hybrids along with opaque-2 and local varieties were considered these values were found to be $r = -0.873$; $y = 4.2159 - 0.2287 x$.

G. M. Reddy
*B. V. Ramasastry

*Nutrition Research Laboratories, Hyderabad.

2. A correction for lysine content.

In last year's Maize News Letter (1967) seven varieties of maize were analyzed for protein and amino acid composition. The lysine content was reported higher (ranging from 0.52-1.18) due to the use of lysine hydrochloride as a standard for bioassay and should have been multiplied by 0.8 to get the following correct lysine content in each variety, Opaque-2 4.74, Deccan hybrid 2.82, Ranjit 2.36, Ganga 101 2.08, Ganga-3 2.80, Hi Starch 2.21, Ganga sufed-2 2.40, Local variety 2.35.

G. M. Reddy

3. Incorporation of the opaque-2 gene into Indian inbred lines.

A breeding program was initiated in collaboration with the Maize Research Station (Amberpet, Hyderabad) to incorporate the opaque-2 gene in the desired background of Indian inbred lines and to ultimately recover the varieties with the opaque-2 gene. Thirteen inbred lines were used, including CM 105, CM 109, CM 110, CM 111, CM 201 and CM 202 which went into the leading Indian hybrids.

The opaque-2 gene in the yellow and white background was recovered by selfing the F_1 of these inbreds. The work is being continued with backcrossing the selected F_2 seed to their respective recurrent inbred lines. These varieties will be further tested for protein and lysine content as well as other amino acids in order to evaluate the performance of the opaque-2 gene in different genotypic combinations.

G. M. Reddy
K. Vaidyanath

4. Reversion of opaque-2 by diethyl sulfate (DES).

Opaque-2 white seeds (667) were treated with a 0.05 M concentration of DES for 8 hours by changing the treatment with fresh solution every hour. Besides a few chlorophyll sectors, five yellow seeds were obtained on independent selfed ears. Further tests will eliminate the possibility of contamination.

S. Annapurna
V. S. Bharathi
K. Vaidyanath