

electronic eye sorting and/or gravity - shaker table sorting. The final consumer bite-off is a flavor blend of 25 percent sugary-shrunken on a sugary background. Credit for the suggestion of a physical separation of the ca 10% starchy kernels goes to my son David W. Galinat.

Walton C. Galinat

The practical production of trisweet hybrids

A type of sweet corn hybrid segregating two extra endosperm types on a sugary background is practical from a cross in which both pollen and seed parents carry a different endosperm recessive in combination with sugary. For example, if the pollen parent was su sh2 and the seed parent was su bt2 then the hybrid seed would be all standard su su with both sh2 and bt2 covered by their dominant alleles from the other parent. But the crop ear would be about 7/16 or 44% super-sweet on a sugary background rather than just 25% as in the case of the bisweet types.

Walton C. Galinat

Comparative cytology of certain Maydeae and Andropogoneae

The inclusion of several Oriental and American genera in a single tribe, the Maydeae, has been considered by some as an artificial assemblage of monoecious grasses from the tribe Andropogoneae (Weatherwax, 1954), while others have considered the Maydeae as a valid taxonomic offshoot from the Andropogoneae (Hitchcock and Chase, 1950; Anderson, 1945; Stebbins, 1956a - as reviewed by Chandravada and Galinat, in press).

Since the floral morphology of the Maydeae is most similar to that of the subtribe Rottboelliinae of the Andropogoneae, it seems possible that studies of comparative chromosome morphology of the subtribe could help to identify the most probable connecting link between the American Maydeae and the Andropogoneae. If the closest possible hybrid between these tribes were produced experimentally, then subsequent studies of its chromosome homeology may serve to elucidate their evolutionary divergence.

In the present study, a comparative analysis is made of the chromosome morphology of the genera Elyonurus, Manisuris and Coelorachis of the tribe Andropogoneae. The individual chromosomes of these genera have been identified at pachytene and tabulated. The morphological details of the pachytene chromosomes have been reported earlier (MNL 44, 1970; MNL 45, 1971; and MNL 46, 1972).

An attempt to compare the morphological details of the chromosomes at pachytene of these genera with those of maize, Tripsacum and Coix, the first two of American Maydeae and the third of Oriental Maydeae, has revealed some interesting correspondences.

It appears that Manisuris and Coelorachis share many cytological features. Out of the 18 chromosomes of Coelorachis, 9 are comparable to the 9 chromosomes of Manisuris. Since no meiotic irregularities were noticed in Coelorachis at any stage, the similarities of nine of the Manisuris chromosomes with the nine of Coelorachis at pachytene, including the nucleolar chromosome, suggests a hybrid origin of Coelorachis. The two collections of Elyonurus tripsacoides from Veracruz and Mexico are distinct both morphologically and cytologically. The chromosomes of these three genera resemble maize chromosomes to a greater extent than they do those of Tripsacum. However, a comparison of maize chromosomes with the other Maydeae like Coix would reveal that they also share some features. They have the same lengths and both have internal and terminal knobs, the nucleolar chromosome of maize is more similar to that of the members of Andropogoneae studied than to that of either Tripsacum or Coix. In the light of the above cytological findings it seems that certain maize (Zea) chromosomes have more in common with certain members of Andropogoneae than with those of the other Maydeae (Coix and Tripsacum). This seems to support the earlier suggestions that Maydeae is an artificial assemblage and might be an offshoot of the Andropogoneae. The close relation of both maize