

I think that it is possible that Dr. Randolph's line can be related to the one studied by McClintock (material which was never introduced in this Institute) and that the transposition phenomenon based on the breakage-fusion-bridge cycle may have given rise to many sublines with structural changes. In the light of the genetic regulation phenomena which are now known, such position effects could turn a character conditioned by only one gene of good expression and penetration into a fluctuating character, offering advantages in the evolution and selection of the organisms (Mazoti, 1945, Revista Argentina de Agronomía t.12, No. 3, p. 181). Perhaps with this system of transposition of chromosomic sectors the regulation of the reply of the genes or of a little sector of DNA can also be altered, causing a "self-infection" of unpredictable consequences for the organism that may change the concept about the basis of selection (Rendel, Proc. Nat. Acad. Sci. 64: 578-583, 1969) or perhaps may annul the normal inhibition of the cellular multiplication (Mazoti, 1963, Revista Facultad de Agronomía, 3a época, t. XXXIX, pp. 63-68).

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Information or seed for lines Ind.AH83 and CI617 — Iowa Stiff Stalk Synthetic was developed in 1933 and 1934 by recombining 16 lines selected by various corn breeders as being stiff stalked (Sprague, G. F., J. Amer. Soc. Agron. 38:108-117, 1946). The 16 lines recombined to form Iowa Stiff Stalk Synthetic were: Ia.I159, Ia.I224, Ia.Os420, Ia.WD456, Ind.461-3, Ill.12E, CI617, CI540, Ill. Hy, Oh3167B, Ind.AH83, Ind.Tr9-1-1-6, F1B1-7-1, A3G-3-1-3, CI187-2 and LE23. Iowa Stiff Stalk Synthetic has been used extensively in the Iowa Corn Breeding Program in basic breeding studies evaluating recurrent selection procedures for the improvement of breeding populations. It has been shown to be good for general combining ability in crosses with other varieties and also as a source population for lines having good general combining ability (e.g., B14, B37, B73 and N28).

Iowa Stiff Stalk Synthetic was developed about 40 years ago, and it is impossible to determine how many times the synthetic has been reproduced to maintain its viability. Consequently, I have been attempting to reassemble the original lines used in the formation of the synthetic variety. I am interested in resynthesizing Iowa Stiff Stalk Synthetic from the original lines to determine how its

mean performance and variability compare with the 'original' version of the variety we presently have in cold storage.

I have been able to recover 13 of the 16 lines from seed stocks at Iowa State University (Ia.I159, Ia.I224, Ia.0s420, Ia.WD456, Ill. Hy and CI187-2), Funk Brothers Seed Company (CI540, Ind.Tr9-1-1-6, A3G3-1-3 and Ill.12E), Pioneer Hi-Bred International, Inc. (LE23 and Ind.461-3) and Ohio Research and Development Center (Oh.3167B). In addition Mr. Baker of Pioneer Hi-Bred gave me seed of the parents (Fe and B2) of F1B1-1-7-1. I have not been successful in obtaining either seed for or information about Ind.AH83 and CI617-3-4. Dr. G. F. Sprague (personal communication) thought CI617-3-4 was a line developed by Dr. F. D. Richey from an Illinois variety; this is the extent of my information for Ind.AH83 and CI617-3-4.

If anyone can provide me with any information, suggestions or seed of Ind.AH83 and CI617-3-4, it would be appreciated. One or both of the lines may have been renumbered, or they may not have survived subsequent evaluation.

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Differences in absorption of foliar-applied high molecular weight phosphate among corn inbreds with three different cytoplasm — The Texas male-sterile cytoplasm (cms-T) has been shown to absorb a foliar-applied high molecular weight phosphate (HMP) more than its isoline with normal cytoplasm. In a similar experiment with the S cytoplasmic male-sterile (cms-S) and the C cytoplasmic male-sterile (cms-C), it was found that cms-C is similar to cms-T in its absorption of the HMP; cms-S showed no difference in absorption when compared with its normal isoline. In none of the three comparisons of each of the cytoplasmic male-sterile lines with its normal isoline was there a difference in orthophosphate absorption, nor did any of the lines show a difference in the translocation of either source of phosphorus inside the plant ten days after application. These results show that the three known cytoplasm are not similar in the property of absorption of foliar-applied HMP. Further, differences were found among lines in the rates of absorption of foliar-applied phosphorus.

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Gametophytic factor (ga10) on chromosome 5 distal to A2 — Reciprocal crosses of an A2 Bt/a2 bt stock with a homozygous a2 bt tester revealed a deficiency of colored kernels when the heterozygous plants were used as males (Table 1) compared to the results of crosses when the same plants were used as females (Table 2).