

previously for corn seed.

Preliminary experiments attempting to reverse 480 Kr inhibition of geotropism and growth with indoleacetic acid and naphthaleneacetic acid were unsuccessful.

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2. Physiological study of lazy.

The Coop stock of la, which grew very poorly in Florida, was outcrossed to Florida adapted lines and reisolated. Also, it was separated from su. The breaking strength of lazy and normal sib plant stalks was determined. The weights required to break a six inch span of basal stalk were variable, but the means were not very different. In this stock at least, stalk weakness does not seem to be the basis for the ultimate prostrate growth habit. Although it had been reported by Shafer that lazy plants became ageotropic at an age of ca. 4-7 days, according to temperature, no reference was made to the coleoptile. It was found that shoots of lazy seedlings in the coleoptile stage are normally geotropic, but after breaking through the coleoptile the leaves become ageotropic.

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3. The red pigment formed in corn seedling extracts with anthranilic acid.

The red pigment formed in breis of corn seedling leaves (News Letter 28: 22, 1954) has been further studied. Anthranilic acid disappears as the red material is formed. Paper chromatography and other evidence indicate that the substance in leaf extracts is yellow; crystalline; soluble in ether, acetone, and water but not ligroin; is slightly acidic; gives Craven's test for quinone; and the chromatographed 2, 4-dinitro-phenylhydrazone color suggests a benzoquinone.

The red pigment formed from anthranilic acid is acidic, has no free diazotizable amine, and is decolorized by bisulfite. Tentatively it is suggested that the material which combines with anthranilic acid to form the red pigment may be a partially substituted benzoquinone which would make the red pigment an aminoquinone, specifically an anthranilylquinone. It may be that material, which is almost absent in corn embryos and older plants but which is abundant in young plants, has a function in electron transport like Coenzyme Q, or conceivably is a precursor of Coenzyme Q.

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1. A method for keeping maize plants alive in the tasseling stage after removal from the nursery.

A simple method was developed for transporting and keeping corn plants alive for demonstrations. A mature corn plant undergoing anthesis was dug from the nursery with a shovel. The roots, in a clump

of soil approximately 10-12 inches in diameter, were enclosed in a plastic fertilizer bag 19 inches wide and 28 inches deep. The inside of the plastic bag and the soil were sprinkled with water before tying the bag securely with a string.

Five plants treated in this manner were transported in the trunk of an automobile 202 miles to Douglas, Georgia, and placed in the hot July sun during a demonstration at a corn clinic. Holes were dug in the soil at the site of the meeting for placing the bags and roots underneath the soil. Consequently, the bags were not visible to the audience.

The plants were still alive and in good condition for the demonstration, although one of the plants was dug two days prior to the meeting and the other four plants one day prior to the meeting. Three of the plants were transported back to Athens and placed in a grove of trees on the University campus. Water was sprinkled occasionally into the plastic bags. Two of the three plants lived until 17 days later. The third plant was still alive 22 days after the meeting but not in an entirely satisfactory condition for demonstrational use.

In addition to demonstrations, this method apparently has other possibilities such as transferring plants from greenhouse to the field and vice versa, and crossing plants from different locations.

A. A. Fleming

2. Effect of stand on yield and other agronomic characters in double-cross corn performance tests.

Genes controlling some characters in double crosses were affected more by variations in stand than genes controlling other characters. Under the conditions of this experiment, plant height, ear height, root lodging, and stalk lodging were not affected as greatly by deficiencies in stand as maturity, yield per plant, number of ears per plant, and size of ear.

When allowed the same amount of additional space in which to develop, plants of a two-eared hybrid had a greater increase in yield than plants of a one-eared hybrid.

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1. The blotching system involving the C locus.

In last year's News Letter it was concluded that the blotching system which causes blotches of color to develop in the aleurone in A c R genotypes involves at least four genes. This conclusion was based in part on the fact that the inbred strain, Oh45, which is not itself blotched, proved in test crosses to be homozygous for the Bh factors on chromosomes 4, 6, and 9. This suggested that there must be at least one additional factor in the system and that this factor is absent in Oh45. Ratios in crosses of Oh45 with testers for the known Bh genes also indicated that an additional factor is involved.

Test crosses made in 1959 show that this additional gene is A₂ rather than a gene specific for blotching. Oh45 has the genotype a₂ a₂. Our present conclusion is that three different Bh genes on chromo-