

(nitrogen). GA 153 is probably a low accumulator of Mg and therefore sensitive to a lack of this element in its tissues. The lower leaves only had .10% Mg. The normal amount is .20% or more.

The lower leaves of GA 153 also had only 1.77% N when they should have had 3.00%. The N deficiency is probably due to an inability of the plants to take up the applied N fertilizer.

The stocks should be of use in future genetic and fertility experiments.

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#### 4. Viability in long-stored seeds of maize.

Seeds of 200 entries of  $S_0 - S_3$  lines were produced in 1965. They were stored in filing cabinets under ordinary conditions of room temperature and humidity of the Southeast at Athens for seven years and then tested for viability in a germinator in 1972. A total of 21% of the entries germinated, ranging from 2 - 88% in germination. Resistance to Rhizopus sp. in the germinator was noted in 3.5% of all the entries, the range being from very resistant to moderately resistant.

The variation in viability and also resistance to Rhizopus appeared to be hereditary. Seedlings were transplanted to the field to obtain germplasm for future studies and breeding programs.

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#### 1. Seed viability of maize (*Zea mays* L.).\*

In the last issue of MGCNL 45:94-95 Dr. Walton C. Galinat has reported the oldest seed viability of sweet-corn "Chuspillo" from Bolivia,

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\*Articles 1-6 were received March 21, 1972.

which was kept under cold-storage conditions at below 40° F, stored in small screw cap bottles. This report has aroused our interest to check the seed viability of maize kept at room-temperature. Fortunately, we were able to procure 10 screw cap bottles containing maize seeds found in the course of renovating a laboratory in the Biological Laboratories of Harvard University. The maize seeds were collected 30 years ago (from 1942 crop year) by Dr. James W. Cameron, who at that time was working with Professor Paul C. Mangelsdorf.

Randomly selected seeds from each bottle were soaked in distilled water for about 6 hrs., then kept in paper cups with moist paper-towels at room temperature (70 to 72° F). The score for germination was made on the 12th and 15th days, and the number of germinated kernels for each day was added to represent the total percentage for each bottle. Of the 10 bottles of seeds, five showed no germination, while the percentage of germination in bottles with collection number 429 was 28% (slow growth, represented by the size of the seedlings); Coll. #1168-5-11 was 36% (medium growth); Coll. #353 had 44% (slow growth); Coll. #351 was 60% (most vigorous growth); and Coll. #354 had 68% germination (next most vigorous growth).

Using these data for viability in 30 year old maize seed stored at room temperature, we suggest that different races of maize may have a different capacity to retain seed viability. We also suggest that it would be useful to select those genetic races of maize which may retain higher percentages of seed viability without resorting to expensive cold-storage methods often not available in other parts of the world.

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## 2. Feminization in teosinte (*Euchlaena mexicana* Schrad.).

Most of the races of teosinte, having originated in Mexico and Central America, are short-day (SD) plants. They fail to flower, when grown outdoors in the North Eastern United States during summer, due to prolonged day length. Under natural conditions of their habitat, the vegetative phase of teosinte is terminated, and plants flower and fruit, when the day length becomes short. But in the New England climate, such SD conditions arise very late in the growing season and plants are killed by early frosts before