

Aberrations
Method

Plants shorter than normal -	7	Completely sterile tassels -	10
Very narrow leaves -----	1	Kernels formed in tassel ---	1
Extremely late -----	7	Shoot with no silks -----	1
Semi-sterile tassels -----	10		

Endosperm segregations observed in all lines included wx, su₁, Y, and various defective types. Differences in aberration rates were noted according to inbred, type of irradiation, and amount of irradiation.

Difficulty was encountered in obtaining good seed sets by selfing even when the pollen appeared normal and abundant. The low number of ears classified for endosperm segregations in relation to the plant characters classified both in 1955 and 1956 bears this out.

The S₂ generation from plants irradiated in 1954 were grown in 1956 to observe possible desirable recessive plant characteristics. In this material we noticed several ear-rows which were segregating for various plant characteristics. We did not keep detailed data on obvious deleterious segregations -- our main screening was to detect obvious improvements of undesirable line characteristics. We found none.

As we see it, the chief objection to using radiation as a breeding tool is the same as is encountered with many other breeding techniques, namely, the testing of a large progeny to identify desirable agronomic characteristics.

Marvin L. Vineyard
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BLANDY EXPERIMENTAL FARM
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1. The Blandy Experimental Farm.

The Blandy Experimental Farm has joined the ranks of research institutions working on corn. Although it has been in operation for some 30 years comparatively little corn has been grown. Research at the Farm has consisted mainly in genetics, cytogenetics, and cytotaxonomy. Men who have taken their degrees at the Blandy Experimental Farm are now holding positions of responsibility in all sections of the country, particularly in the South.

The Blandy Experimental Farm is located in the Shenandoah Valley of Virginia. It consists of slightly more than 700 acres, 100 acres of which is the Orland E. White Arboretum named after the first director of the Blandy Experimental Farm. This arboretum consists of more than

5,000 species of plants. The farm was willed to the University by the late Graham F. Blandy. It was put into operation as a biological laboratory in 1927 when Dr. O. E. White became the first director. There are working and living facilities for a number of graduate students, also two furnished apartments for guests and investigators. The staff, students and guests take their meals in a common dining room provided by the Farm. There are available a number of fellowships paying \$1200 a year for the graduate students. Since the students spend at least half of the year at the Blandy Farm where the cost of living is merely the cost of food, or about \$30 a month, the stipends of \$1200 a year are adequate for living throughout the year. Fees and tuition are taken care of by the University for students on fellowships. At least two or three of these Fellowships will be open in the fall of 1957 and we would be pleased to have applications from anyone interested in doing genetic research, particularly with corn.

2. Blandy Radiation Field.

Beginning in the summer of 1957 there will be a Cobalt-60 radiation machine installed in a small circular field which is completely shielded by concrete wall and earth embankments. The radiation field is in some ways similar to the first radiation field established at the Brookhaven Laboratory with the difference mentioned that we are using concrete and soil for shielding instead of distance as is done at the Brookhaven Laboratory. Also this source will be considerably smaller, between 100 and 200 curies instead of the 1800 curie source in use at Brookhaven. It is not planned to grow plants for their entire life in the field at the Blandy Farm but rather grow them in pots or pails and move them in for a short radiation of fairly high intensity at different periods in the life of the plant. With a 200 curie source it would be possible to get around 3,000 r per day at a distance of 1 1/2 meters from the source. At 3 meters from the source the radiation will be 720 r per day which is sufficient for inducing changes in the growing corn plant. There are great differences in the sensitivity as the corn goes through the meiotic cycle. The short note to follow by Alan Caspar will give a few of the details of the difference observed. We will be happy to have investigators spend some time at the Blandy Farm and make use of the radiation facilities there. In future years it may be possible to make service irradiation for investigators, although for the present year we are not prepared to do this.

3. Plastic Tags for Labelling Hand Pollinated Ears of Corn.

In the 1955 edition of the Maize Genetics Cooperation News Letter we had a short item entitled "Hurricane Proof Tags." Our primary object in using the plastic tag there was so that the hurricanes could not obliterate the records on our hand pollinated ears. However, since that time we have found these tags most useful even when we do not have

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