

III. REPORT ON MAIZE COOPERATIVE

Seed requests to the Maize Cooperative for 1966 were the largest on record. A total of 152 requests were received during 1966. This is a 28 per cent increase in the number of requests compared to 1965. About 84 per cent of the total requests were from the U.S. and 16 per cent from foreign countries. A total of 1,907 samples were supplied to fill these requests or a 28 per cent increase over 1965. The number of requests has been gradually increasing over the years and is expected to continue.

During the summer of 1966 seed increases were made on maize genetic stocks of chromosomes 5, 7, 8, 9, 10 and additional chromosomal testers that required increased seed supplies. In addition, stocks of the andromonoecious dwarfs \underline{an}_1 , \underline{d}_1 , \underline{d}_2 , \underline{d}_3 , and \underline{d}_5 were increased to meet the increasing number of seed requests for these stocks. About 120 reciprocal translocation stocks were increased at Urbana and by Dr. D. S. Robertson at Iowa State University. It will be necessary to grow a few previously grown translocations of Dr. E. G. Anderson's collection in 1967 in order to extract more desirable genotypes. Plans are to have a complete list of all reciprocal translocations in the collection available for the 1968 News Letter.

Work is also continuing on chromosome location of unplaced genes in the collection. Generally, several unplaced genes are located to chromosomes each year using A-B translocations and waxy-marked reciprocal translocation series. Work is in progress to more accurately map the location of these genes to a specific region of the chromosome.

Over a period of years we receive from maize geneticists and breeders mutant phenotypes of several different traits that could be allelic to other known loci. In 1966, 16 unknown endosperm mutants were tested for allelism with 8 known endosperm genes. The following table lists the results where the tests were positive.

Allele tested	bt ₁	bt ₂	bt ₄	sh ₁	sh ₂	sh ₄	sh ₅	su ₁
bt ₆₀₋₁₅₆	-	-	-	-	+	-	-	-
*bt ₆₀₋₁₅₈	-	+	-	-	-	-	-	-
bt _{C103}	+	-	-	-	-	-	-	-
su _{A-4583}	-	-	-	-	-	-	-	+
bt ₆₅₋₁₀₉₆	-	+	-	-	-	-	-	-
bt ₆₅₋₁₃₃₄	-	-	-	-	+	-	-	-
*sh ₅	+	-	-	-	-	-	-	-

- = negative test

+ = positive test

*Also confirmed by Dr. O. E. Nelson, Purdue University.

Seeds of these different allelic sources are available upon request.

Over the past several years mutant traits located to chromosome have been sent to the coop for use as markers. These traits are usually observed for their desirability as a marker trait and to also determine if any other traits are present in the stocks before they are made available. The following stocks are being added to the stock list for 1967.

Gene symbol	Trait	Chromosome location	Description	Stock source
bz_2^m	Bronze mutable	1	Bronze aleurone in presence of other aleurone genes.	Neuffer
c_2	Colorless aleurone	4	Colorless aleurone in presence of $\frac{A_1 A_2 C_1 R}{1-2-1}$	Coe
cl_1	Albino seedling	3	Paper-white albino	Robertson
rs_2	Rough leaf sheath	1	Leaf sheath has abnormal contorted growth.	Cornell collection
mn	Miniature seed	2	Seed size much reduced. Poor to fair germination of homozygotes.	Nelson
wt	White leaf tip	2	Tips of seedling leaves lack chlorophyll.	Sprague
ys_3	Yellow stripe leaf	3	Similar to ys_1 in phenotype. Plant makes good growth.	Wright

The attached catalogue of stocks represents a listing of currently available genetic stocks. A more complete list of reciprocal translocations stocks is found in the 1966 News Letter, Vol. 40, (P. 186-190).

Requests for seed and correspondence relative to the stock program should be addressed to Dr. R. J. Lambert, S-116 Turner Hall, Department of Agronomy, University of Illinois, Urbana, Illinois 61801.

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