

CENTRAL MAIZE RESEARCH STATION  
Yousafwala (Montgomery), West Pakistan

1. Quick drying maize hybrids for West Pakistan.

Maize is recognised as the highest yielding cereal crop and as such holds out the promise to solve food problems of countries like Pakistan where fast increasing population has already outstripped available food supplies. Being a short duration crop, it fits in very well in more intensive cropping patterns required for increased agricultural production. But, the farmers cannot put large areas under this crop because of the post-harvest difficulties in drying and shelling of the cobs. Maize cobs are harvested at 28-30% moisture and must be dried to bring the moisture level down to 15% before shelling. Since the maize crop matures for harvesting in the month of November and December, when the season is fairly cold and days are short, it takes quite a long time to dry the cobs out in the sun. During this period, more often than not, rains are received and the cobs are liable to be damaged. Moreover, farmers are extremely busy during this time of the year in sowing the wheat crop, picking cotton and crushing sugarcane, which are the major farm operations and have to be attended. Some of the farmers do not harvest the cobs from the standing maize crop but cut the plants down. After a few days when the plants have dried out a little they tie them into bundles and collect them into small stacks. After they finish the sowing of wheat, they come back and husk out the cobs from the stacks but in doing so the farmers have not only to put in extra labour but they lose a good deal of fodder, as they can utilise the stalks for feeding their cattle if they remove the cobs from the standing crop. Thus what farmers in West Pakistan need is a type of maize that loses moisture very rapidly during maturity and can be shelled directly on harvesting.

Combined picking and shelling is becoming popular in some areas of the United States but they allow their crop to stand in the field long enough that the cobs are dried down to the desired moisture level. On the contrary, the interest of farmers in West Pakistan is to remove the cobs when the plants are still green so that they can utilise the stalks to feed their cattle.

With a view to evolving maize hybrids that lose moisture in the cobs rapidly on maturity and can be shelled directly on harvesting, a large number of double cross hybrids involving lines of both local and foreign origin

were studied at the Central Maize Research Station at Yousafwala (Montgomery). The inbred lines involved in 243 double crosses tested for shelling quality immediately on harvesting are given below:

North American Lines.

1. A375	21. G7B	41. OH45	61. W33
2. A495	22. Hy	42. Pa 32	62. WD
3. A556	23. H49	43. P8	63. W28
4. A204	24. H19	44. Pa 86	64. W10
5. A619	25. I 153	45. R181	65. W59M
6. A575	26. L317	46. R853	66. W187
7. A554	27. M14	47. R71	67. 7K
8. A239	28. MS206	48. R53	68. 38-11
9. A96	29. MS1134	49. R101	
10. A486	30. M13	50. R172	
11. A251	31. N104	51. V3	
12. A508	32. N24	52. W64A	
13. B37	33. N613	53. WF9	
14. B8	34. N624	54. W22.	
15. B14	35. ND203	55. W85	
16. B21	36. ND230	56. W32	
17. BC3	37. ND255	57. WML3R	
18. B46	38. OH41	58. W182B	
19. C103	39. OH07	59. W9	
20. CMD5	40. OH51	60. WA374B	

Indigenous Lines.

1. Pb.7
2. 124P1
3. 52B
4. 20P
5. Pb.2
6. 54AP1
7. 9p3
8. 7QNo .2
9. 115p3

The double cross hybrids were classified into early, medium and late groups on the basis of days taken from germination to mid-silking stage. It has been observed that several hybrids in each group shelled without damage to the grains on harvesting, while the others needed drying before the grains could be separated from the cobs. Further analysis of the hybrids indicated that six inbred lines viz, M14, Pa32, R181, WML3R, W64A and V3 out of the North American material and 4 lines, i.e., 9p3, 124p1, 20p2 and 54AP1 out of the indigenous group yielded quick drying hybrids that could be shelled immediately on harvesting. Further studies on the capacity of different hybrids to lose moisture on maturity under West Pakistan conditions are being taken up.

A. G. Bhatti