EVALUATION OF THE RESEARCH PROGRAM

The maize improvement program did not meet its goal of developing higher-yielding materials and putting them into commerical production by the seventh year of Project operation. Two of the best cryptic hybrids outyielded the best materials available in 1967 by about 10 percent. However, as the parental lines of these crosses yielded poorly and lodged badly, it was not feasible to produce these hybrids commercially. The Comp A x Comp B, formed from the parental lines of the five best cryptic hybrids, could have been produced at low cost, but unfortunately it did not retain the high yielding capacity of the single crosses.

TABLE 4.2. Average yields and days to flowering of late maturing local varieties and introduced hybrids. The values are averages for seven experiments carried out in 1971 and 1972.

Material	Yield of grain with 14% moisture ton/ha.	Days to flowering
Pinto Salvatori	5.52	107
Pue. 26	5.45	118
Pue. 66	5.36	107
Pue. 41	5.30	118
Pue. 77	5.30	111
Pue. 108	5.28	108
Pue. 79	5.28	114
Pue. 27	5.21	120
Pue. 67	5.21	106
Pue. 119	5.17	111
Tlax. 145	5.17	113
Pue. 69	5.17	113
Pue. 45	5.12	113
Pue. 4	5.10	105
Pue. 62	5.08	106
Pue. 2	5.07	104
Pue. 59	5.07	108
Pue. 10	5.06	105
Pue. 116	5.06	108
Pue. 141	5.04	112
Pue. 36	5.04	107
H-131	5.60	120
H-129	4.65	121

TABLE 4.3. Average yields and days to flowering of early maturing local varieties and introduced hybrids. The values are averages for four experiments carried out in 1971 and 1972.

Material	Yield of grain with 14%moisture ton/ha.	Days to flowering
Tlax. 237	2.27	82
Pue. 178	2.35	83
Pue. 153	2.59	84
Pue. 217	2.49	85
H-35E	3.14	86
Pue. 139	2.70	86
Pue. 175	2.52	87
Pue. 214	2.68	87
Pue. 184	2.75	88
Pue. 183	2.80	88
Pue. 53	2.83	88
Pue. 216	2.90	89
Pue. 159	3.08	89
Pue. 210	2.78	90
Pue. 200	3.26	90
Pue. 86	2.88	91
Pue. 91	2.92	91
Pue. 29	3.07	91
Pue. 195	3.01	92
H-30	3.82	93
H-28	3.60	98

Four years of mass selection in the late composite at a total of 19 sites produced little or no improvement in yielding ability. This result is not in accord with the experiences of many maize breeders and possibly was influenced by the following considerations: (a) the plant density in the selection blocks in 1968, 1969, and 1970 was only about half that used in commercial plantings; there is some evidence that plants that are outstanding at low densities are not necessarily superior at high densities; (b) there were difficulties at many sites in achieving complete isolation of the selection block, because the adjoining plantings could not be controlled; this may have resulted in the introduction of undesirable germplasm into the composite; and (c) the land chosen for some of the selection blocks was quite variable; this made it difficult to select only those plants that were genetically superior.

The major contribution of the maize improvement program has been in determining the usefulness of local and introduced materials for early and late plantings in the area. Pinto Salvatori is an outstanding local variety that should be used more widely for plantings in March, April, and