3098 ADVANCES IN THE SQUASH BREEDING PROGRAM IN EMBRAPA, BRAZIL. JOSÉ F. LOPES^{*}, S. BRUNE AND ANDRÉ N. DUSI EMBRAPA/CNPH, P.O. Box 07-0218, Brasília, DF 70359, Brazil.

<u>INTRODUCTION</u> - Brazilian vegetable growers use over 50 MT of squash seeds per year, and we have one the greatest diversities of landrace types of **Cucurbita moschata** and **C. maxima**. In contrast, we import about 83% of the squash sold in Brazil, and the yield is very low. Resistance to diseases such as **Phytophthora capsici**, powdery mildew and PRSV-w is necessary to improve yield and quality. The present experiments deal with collection and evaluation of germplasm and development of squash varieties well adapted to Brazilian conditions, better quality and resistance to the main diseases.

<u>METHOD</u> - Seeds of C. moschata and C. maxima landraces and commercial types were collected directly from growers and markets in Brazil and introduced from other research organization in the world. Those having at least 100 seeds were artificially inoculated to detect disease resistance. Resistant plants were selfed and used in breeding program. All introductions have been increased and kept in a cold chamber, at 15°C, 30-35% R.H. in aluminium bags. Forty-two lines of C. moschata and 14 lines of C. maxima were used to make 70 Fl hybrids within C. moschata, 30 Fl hybrids within C. maxima and 20 interspecific Fl hybrids between C. maxima and C. moschata.

<u>RESULTS</u> - 1 - Germplasm collection: From 1987 to 1989, 650 accessions were introduced from Brazil (625), Japan (8) and U.S.A. (17), including 380 of **C. maxima** and 270 of **C. moschata**. Seeds of each accession have been increased in greenhouse and evaluated to the main characteristics, such as disease resistance, quality and yield. Some accessions were detected as resistant to **P.** capsici (90) PRSV-w (13) and powdery mildew (1).

2 - Open pollinated varieties: One O.P. variety, CNPH-053, was developed and is ready to be released. It presents elongated pyriform fruits, average weight 650g; predominat fruit skin green Color striped, yielding about 8-10 t/ha, and presenting very good field resistance to **P. capsici** and PRSV-w, excellent quality, flesh color red, 7-9% brix, and good post-harvest keeping quality.

3 - Fl-hybrid development: during summer 1989/90, seventy Fl-hybrids of C. moschata and seventeen interspecific Fl hybrids between C. maxima and C. moschata were tested in the field. Twelve high yielding and good quality varieties were selected. Seeds will be increased soon and sent to regional and advanced field trials. The new hybrids yielded in average 15t/ha, while the average yield of traditional varieties has been 8t/ha. In addition to the yield, the new hybrids showed resistance to P. capsici and PRSV-w, higher quality and good post-harvest keeping quality.

<u>CONCLUSIONS</u> - The above fingings contribute not only to minimize the import of seeds in Brazil, but also to collect germplasm all over the country. The tendency of the germplasm is to disappear when improved varieties start being released, and it is believed that this collection will save the Brazilian squash and pumpkin germplasm even after improved varieties come to dominate all the fields in near future. The new varieties will give to the growers and consumers new options with higher yield and better quality.

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