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Application for mutant types from space induced in maize (*Zea mays L.*)

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In our previous papers we described a significant influence of space flight of maize seeds of mature and not yet of age on progeny. Some types of traits have been obtained{MNL.74:2-3,75:4, 77:3-4, 79:3, 80:1, 81:1, "Chinese space science and technology".18(6):63-67,1998.23(6):64-68, 20033.29(6):60-64,2009}.The paper will brief introduce a application status of partal mutants and variants.

1. Mut 5 from v8112 and Mut 2 from yi 01-4-1

Me12 inbred line was bred from (X1×Mut5)S7×PFGC2 analogous plant] F2 population by using biotic and abiotic factors-resistant technology and through the methods of artificial selection, multiple-cross. self-cross and test-cross. Among them,X1 inbreds was developed from [(M017×Zi330)×Pioneer's hybrid S2]S6 variant; PFGC0 was component synthesis population from 130plants for 13 Pioneer's hybrids S2.

The parents for selected Me12 involved 5 of the heterotic group, i.e. Lancaster, Luda red cob, Pioneer B, Tropical, and Reid etc., but Me12 is belong to heterotic group Reid.

XH3 inbred line was bred from [(XH×HZGC2 analogous plant) ×Mut2]F2 population by using biotic and abiotic factors-resistant technology and through artificial selection, multiple cross, self-cross and test-cross. Other them, XH inbreds was developed from HZGC1 synthesis population. HZGC0 was Component synthesis population from HZ4 of 6 local sub-lines, Tang sipintou, Hai7-1, HuangXiao 162 and 30 plants of S3 generation of JingZao No.7 .

The parents for selected XH3 involved 2 of the heterotic group, i.e. Tangsipintou-HZ4 and Local etc., but XH3 is belong heterotic group Tangsipintou-HZ4.

Changcheng dian No.12, Cross combination Me12×XH3. It is a high starch maize(75.7%), belong to heterotic pattern Reid×Tangsipintou-HZ4, already finished the breeding programme of test-cross, evaluate (asses)-test, comparative-test, regional-test, production-test and examination and approve.

2. Mut8 from Me141 and Mut7 from U8112

Met88 inbred line was bred from [(Me8×SW5PS3) ×Mut8]F2 population by using same as above technology and methods. SW5P was a composite population from 5 of population in it ,for example SW1C8, Thai composite No3, Cupurico etc.

Met88 was involved 2 of the heterotic group, i.e. Reid and Tropical Ⅰ, but it is belong to Tropical Ⅰ.

Mv02 inbred line was bred from[(Q1621×Y78599S3) ×Mut7]F2 population by using same as above. Q1621 inbreds was a derivative inbred line for the Tangsipintou-HZ4 group in it.

Mv02 was involved 3 of the helerotic group , i.e. Tangsipitou-HZ4, Pioneer B and Reid , but it is belong to Tangsipintou.

Changcheng siyu No.2, cross combination Met88×Mv02, it is a silage corn, belong to pattern Tropical Ⅰ×Tangsipintou-HZ4, already finished the breeding programme of test-cross, evaluate (asses)-test, comparative-test, regional-test, production-test and examination and so on.

Me12, XH3, Mv02 and Met88 were created to be new germplasms polymerized with highly effective biotic and abiotic factors-resistant genes for 2-5 of the heterotic group.