DWARF GENOTYPES AND GENETIC ASPECTS OF OBTAINING THEIR GENETIC DETERMINISM

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Abstract

Peach has a constant diploid karyotype and a small number of chromosomes, chromosome 2 O with n = 16. In cytological investigations it was found that no abnormalities in the meiotic divisions, which ensures transmission of hereditary characteristics from parents to offspring. Improvement processes of particular importance peach has its youthful stage is very short, so offspring can produce fruit pomace obtained from the second and third year after planting, accelerating the improvement of this species.

Research results, in terms assortment of peach rootstocks are much appreciated at this stage of reorganization of orchards by modernizing culture technologies, requiring a wider spread of modern new plantations will have a greater number of trees / ha , with medium-sized and small trees.

Studies conducted show that these properties of type dwarf trees are much influenced by rootstock, along with the variety is a limiting factor of a constant production every year, and the viability of the plantation. To justify in economic terms, peach tree will be planted intensively as palmetă (4 x 2 m.) and superintensive flag, Belgian or crown pilar fence at a distance of 4 x 1, 2 -1.5 m. (V. Mitre).

Key words: Dwarf genotypes, peach rootstocks

INTRODUCTION

Cultivated plant breeding work has grown along with the development of genetic research and discovery mechanisms that control heredity and vareabilitatea characters and their characteristics.

In the genetics peach, it has a long sexual cycle predominance diploid phase and the time and space needed for the growth and development of families in generation II. Floral biology allows us practicing controlled hybridization and autofecundarii favor the development of genetic and cytological studies.

Lammes (1945), studied dwarf genotype demonstrating that determinism is due to a recessive gene.

MATERIAL AND METHODS

From biological material existing germplasm collections and opportunities for achieving new selection of biotypes and populations of peach rootstock aimed to obtain superior qualities of those present.

To obtain genotypes as rootstocks for peach in researches have used induced vareabilitatea of characters from parents to offspring through controlled and autofecundării hibidării method to obtain F 2 generation.

Upon reaching the port dwarf trees to cross peach varieties standard dwarf peach varieties (dwarf), knowing that the knowledge monofactorială and recessive dwarf recesivă (Monet R., Salesses G., 1975; Lapins K.O., 1980) is the first generation F1-type individuals obtain standard normal force growth.

Resulting from combinations were selected and planted saplings in hybrids derived field, making all necessary observations. With their input bearing self-fertilization were performed to obtain the F2 generation, yielding hybrid seedlings that were planted in the field making observations on those hybrids. From seeds obtained resulted ¼ and ¾ dwarf fruit trees nature demonstrators standard character.

Dwarf plants are homozygous and can still work to obtain F3 generation. As originally intended înbunătățirii biological material improvement was achieved third stage of hybridization, the hybrid combinations fofosindu simple and complex hybrid combinations in which one of genitors was at the small (dwarf).

Scheme for obtaining dwarf genotypes,

F0 : Genotype breast (standard) x genotype pattern (dwarf)

↓

Heterogeneous hybrid standard

↓

F1: self-fertilization and cross elites dwarf dwarf hybrids,

↓

F2: self-fertilization and cross elites dwarf dwarf hybrids,

↓

Dwarf hybrids 100%

RESULTS AND DISSCUSION

As a result of the improvement was obtained genotype dwarf type, characterized by reduced waist tree: 1 - 1.5 m; shows secondary branches and third parties; inrenodiile short, intensely colored foliage is rich and therefore assimilation capacity is high, (Fideghelli C., 1982); productivity is good quality fruits like peaches standard.

Genetic determinism dwarf genotype refers to the genetic polymorphism of peach, which is ample, some qualitative characters with heredity, but most characters with quantitative heredity. The large number of genes which determine the quantitative characteristics makes it much more strongly influenced by environmental conditions compared to other characters AlterNet. Improve practice, the distinction between quantitative and qualitative characters depends not so much the size of individual genes EFCT How important role and have hereditary basis, ie, the environment in producing final phenotype (M. Ardelean).

Depending on genitors heterozigotismul in genetic improvement programs with clearly defined objectives, can achieve good results from the first generation in the heredity of characters monofactoriale (Cociu V. et al., 1999).

Dwarf genotype is determined by a recessive gene type dw. Dwarf habitus is determined, then controlled by monogenic recessive type dw / dw. Segregation ratio resulted from the first generation is 3:1. Transmission character type of this species is monogenic with incomplete dominance dw / dw.

CONCLUSIONS

The peach is a species rich in diversity for plant growth habit. Most of the growth habits are the result of single gene changes and are readily manipulated by breeders. (R. Scorza şi colab.)

Aimed to obtain new genotypes with small stock of "dwarf" rootstock for improving the range of this species also to get rich germplasm background and deeper knowledge regarding the selection of new rootstocks.

It seeks peach rootstocks of "dwarf" to withstand heavy soil, clay with temporary excess moisture to multiply relatively simple, to provide a good fit to grafting and productivity, all these qualities which will expand plantations and super-intensive type.

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