УДК 635.649:631.524.825

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THE ESTIMATION OF INTERPHASESPERIODDURATION OF COLLECTION SWEET PEPPER SAMPLES IN GREENHOUSES

The collections of source forms (lines) of sweet pepper in a greenhouse have been estimated oninterphases period duration.The sources earlinesswere filed and offered them for use in future selection process in creating earlyheterosis hybrids F_1.

Keywords: raw material, estimate, method, interphaseperiod, sweet pepper, growing season

Breeding success in creating heterosis hybrids largely depend on the availability of source material with the desired characteristics [5].The duration of plant growing season depends on the variety or hybrid, agro-climatic zone and growing conditions.

It is considered[2, 3], that enhance earlinessgrown plant species that are for many climate zones is the first condition for sustainable growth of the value and quality of the crop. Although it is known that usually, in the south late-ripening varieties of many crops, including peppers dominated by the yield and quality [10], However, the use of hybrids provides guaranteed early harvest in early spring when the needs of the population in fresh vegetable production increases significantly.But under cultivation sweet pepper in winter glass greenhouses the growing season is an important component of productpricing, becausethe optimal growing plants

conditions creation requires significant financial expenses. That is why the earliness characteristic is very important in greenhouses [4].

The sweet pepper varieties with less than 100 days from germination to the mass of fruits technical maturity, attributed to a group of very early, 101 – 120 days – early, 121 – 135 –middle135 – 150 – late, more than 150 days – very late [9].

Varieties of the first three groups (very early, early, middle) are the most valuable for sweet pepper breeding in glass hydroponic greenhouses, as growing duration under these conditions is limited by many factors and reduce the growing period is desirable.

The research purposewas to examine the collection of source material samples of sweet pepperin glass hydroponic greenhouses for vegetation the duration of interphase period from germination to flowering, from flowering to technical ripeness and from germination to technical ripeness.And to identify sources to create earliness heterosis F_1 hybrids with short growing period.

Materials and methods of researching. The study was conducted in glass hydroponic greenhouses of The Research and Training Center of greenhouses The State Enterprise Research-production Agrocomplex (RTCG SE RPA) "Pushcha-Voditsa" in 2007-2012.

The objects of the study were the collection of samples of the original forms (lines) of sweet pepper and seeds (in the laboratory experiment to cold resistant) RTCG SE RPA "Pushcha-Voditsa": ПВ-119, ПВ-112, ПВ-118, ПВ-122, ПВ-109, ПВ-117, ПВ-110, ПВ-120, ПВ-108, ПВ-105, ПВ-114, ПВ-106, ПВ-111, ПВ-107. The standard for the source forms (lines) was Dobirny variety (included in the List of plant varieties of Ukraine since 2007).

Experiments of assessment and observation conducted in accordance with the procedures set forth in the writings by V. Moyseychenko, B. Dospehov, The Methods for determining the quality of crop production, The Vegetables and Melons research methods [1, 4, 8].

Experiment was a tree-time repeated. Area of accounting site was 5 m^2.The scheme of plant landing was 90 × 40 cm, number of plants per 1 m^2– 2.9 pc.

Phenological observations conducted daily.

Seedlings were planted in a greenhouse on the 50 day after seeding. After rooting, plants were tying and formed in two shoots V-shapely.

The fruits were gathered in the phase of technical maturity.

Statistical data processing was performed by the method described by B. Dospehov, and Z. Sych and using the tools of MS Excel 2010 [1, 8,10].

The results of studding. Studies have shown that between the initial forms of sweet pepper in the glass hydroponic greenhouses conditions are significant differences in duration from germination to flowering, from blossom to technical maturity and from germination to technical ripeness.

Thus, in the years of research in various weather conditions period's duration in original forms varied as follows: germination – flowering –from 52 to 105 days (average for years and original forms 78.9 days), flowering – maturation – from 37 to 82 days (56.5 days) and germination – maturation – from 110 to 165 days (135.9 days).

Shortest period from germination to flowering was observed with lines: ПВ-112 (52 days), ПВ-107 (53), ПВ-120 (55), ПВ-117 (57), ПВ-106 (60days).

Shortest period from flowering tomaturation was observed with lines: ПВ-111 (37days), ПВ-122 (40), ПВ-107, ПВ-114 і ПВ-105 (42), ПВ-109 (43days).

Overall, during research years duration from germination to maturation with lines became much shorter, due to the annual selection earliness genotypes. Shortest period from germination to maturation had: ПВ-110 і ПВ-112 (110 days), ПВ-122 (111), ПВ-113 і ПВ-106 (117), ПВ-105 (118days).

Original formПВ-112 had both interfacial periods shorter than standard. They were germination– flowering– 71.0 days and the flowering – ripening – 58.8 days and due to this period stairs – ripening was the shortest –129.8.

Conclusion

The collectionsweet pepper original forms samples in the glass hydroponic greenhouses conditions considerably varied by the duration of interphase vegetation period from germination to flowering, from flowering to technical ripeness and from germination to technical ripeness. Significant differences observed in terms of duration interphase period germination – ripening.

The sourcesof precocity were researchedfor creatingheterosis hybrids F_1 with short growing period: ПВ-120, ПВ-112and ПВ-117, which can serve as sources of precocity in creating heterotic F_1 hybrids by reducing the interfacial period germination – flowering. LinesПВ-107, ПВ-110, ПВ-105, ПВ-112, ПВ-114, ПВ-111, ПВ-108, ПВ-118 and ПВ-122 –can be recommended as a source of reduced interfacial period of flowering – ripening.

References

1. Доспехов Б. А. Методика полевого опыта / Б. А. Доспехов. – М. : Колос, 1985. – 416 с.

2. Жученко А. А. Проблема адаптации в селекции, сортоиспытании и семеноводстве сельскохозяйственных растений / А. А. Жученко. – М. : 1995. – С. 3–5.

3. Жученко А. А. Эколого-генетические основы адаптивности системы селекции растений. / А. А. Жученко. // Селекция и семеноводство. – 1999. – № 4. – С. 5–16.

4. Кравченко В. А. Перець солодкий. Баклажан: селекція, насінництво, технології / В. А. Кравченко, О. В. Приліпка. – К. : Задруга, 2009. – 160 с.

5. Кравченко В. А. Селекція і насінництво овочевих культур у закритому ґрунті / В. А. Кравченко., О. В. Приліпка – К. : Аграрна наука, 2002. – 280 с.

6. Методика дослідної справи в овочівництві і баштанництві / За редакцією Г. Л. Бондаренка, К. І. Яковенка. – Х. : Основа, 2001. – 369 с.

7. Методические указания по изучению и поддержанию мировой коллекции овощных пасленовых культур (томаты, перцы, баклажаны). - Л. : ВИР, 1977. – 36 с.

8. Моисейченко В. Ф. Основы научных исследований с овощными культурами в защищенном грунте / Моисейченко В. Ф. – К. : Изд. УСХА, 1990. – 76 с.

9. Руководство по апробации овощных культур и кормовых корнеплодов. – М. : 1982. – С. 46-65.

10. Сич З. Д. Методические рекомендации по статистической оценке селекционного материала овощных и бахчевых культур / Сич З. Д. – Харьков, 1993. – 71 с.

11. Шабетя О. М. Джерела ранньостиглості для селекції овочевих культур. / О. М. Шабетя, Р. Л. Богуславський. // Генетичні ресурси рослин. – 2010. - № 8. – С. 63-70.

12. Эрмантраут Э. Р. Статистический анализ результатов агрономических исследований в прикладной программе "EXCEL-2000" / Эрмантраут Э. Р., Гудзъ В. П. // Материалы международной научно-практической конференции «современные проблемы опытного дела». – СПб, 2000 – том 2. – С. 13 – 134.