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THE NEW VARIETY OF PEA ALLIANCE

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ABSTRACT

Results of selective work concerning the development of the new grain pea variety Alliance are presented. Information about its main morphological, biological and managerial peculiarities is given.

KEY WORDS

Pea; Variety; Approbation features; Biological features; Strain testing; Yield per unit.

In modern conditions, creation of new high-yielding varieties, resistant to various abiotic and biotic stresses, with good quality products is a priority of any breeding program. Undoubtedly, intraspecific hybridization in the plan plays a crucial role, as it allows to correct the gene of the existing varieties, using the soil and climatic conditions of the region efficiently, and to obtain new forms that can withstand unfavourable factors of the environment which are often repeated in recent years [1, 2].

Pea variety Aksay tendriled 5, created by a team of authors led by a prominent breeder N.M.Verbitsky, appeared to be one of the most popular varieties in the North Caucasus region. Satisfying in many ways the requirements and characteristics of agricultural production, it does not have the necessary adaptability and has a significant variability in the yield due to the insufficient adaptability.

The new high-yielding variety of pea Alliance (number 53455 15.05.2012), established with the method of intraspecific hybridization followed by individual selection from the hybrid swarm [Aksay tendriled 5 x Amino (France)] x K - 7811 quite successfully combines harvesting capacity, adaptability and processability.

The cultivar was bred in the State Scientific Institution Don Zonal Research Institute of Agriculture. Authors: Verbitsky N.M., Korobova, N., A., Titarenko A.V., Korobov A.P. Zemlyanov A.N. Miroshnikova I.A., Dyugaev N.N.

Crossbreeding was conducted in 1994, the parent plant was selected in 1998. The years of small station test are from 2003 to 2005, competitive test years are from 2006 to 2009, the year of the transfer to the state test is 2009.

Approbation features. Botanical variety - *vulgare*, subvariety- *vulgare*. Plants are of the usual form. The caulis is green, its height is about 75-95 cm., pubescence is not present. The total number of internodes is about – 18-20, 16-17 before the first inflorescence. The leaf is simple with lots of tendrils and without feathers. The stipules are well developed, large, heart-shaped, green, spotted. The inflorescence is an axillary truss with two flowers. The flower-bearing stem is of medium height, dark-green. Flowers are large, white. The slipcover is ordinary. The bottom of the standard is upright. The peacods are of shelling type, fibrous. The average number of peas per a plant is from 4 to 5, the maximum is 9. The peacods are green, concave, slightly curved, with a blunt tip.

The average number of seeds in a peacod is from 4 to 5, maximum - 8. Seeds are round, medium sized, yellow-pink, smooth, dull, the hilum is light. Rugosity of the seed lobes is missing. The weight of 1000 seeds is from 180 to 200 g.

Biological features. Alliance is a mid-ripening variety. The growing period from the germination to the full ripeness is 70-75 days, or 1-2 days less than the standard Aksay tendriled 5. Resistance to the seeds fall and lodging of the plants is average. Drought

resistance is above average. Resistance to diseases (root rot, ascochytirosis, powdery mildew, rust) and pests is the average, at the level of the standard. Grain protein content is 22-25%. Palatability traits are good. It is homeostatic, combines high productivity with high resistance to drought. It is distinguished by evenness and uniformity of stalks stand and by even ripening.

Alliance is more resistant to lodging than the released varieties, so it is more adaptable to the streamlined production methods. On the clean of weeds fields it can be easily straight-cut in the phase of full ripeness. However, harvesting of mature crops should be carried out in the shortest time, as overripening increases crop losses due to the cracking and breaking of the peacods. Dry seeds are easily injured by working parts of the machines during threshing and sorting, which negatively affects the sowing qualities of seeds and the commercial qualities of the product.

Alliance is a variety of grain direction, combining high flexibility and productivity. During the years of the study in the competitive crop variety testing at the Don Research Institute (2006-2010) the yield per unit was 12,8-32,5 c / ha, which is 2,0-8,5 c / ha higher than the standard variety Aksay tendriled 5 (in different years). Being almost equal to the standard average grain protein content Alliance provided greater yield per unit (table 1).

In the state variety testing the new variety showed the maximum yield per unit on the Baksan variety test field in Kabardino-Balkaria in 2011 – 41.0 c / ha. High yields are also noted on the Ipatovsk variety test field in the Stavropol Territory (+ 7.4 kg / ha to the standard of Pharaoh), on the Republic of Adygea Koshekhabl variety test field (+ 6.8 kg / ha to the standard Lavr) on the Ostrogozhsk Krylovsky variety-test fields and in the Voronezh region (+6.2 and 5.2 kg / ha, respectively, to the standard Zenith), on the Volodarsky variety test field in the Orel region (+ 5.2 kg / ha to the standard of Pharaoh), Lievny variety test field in the Belgorod region (6.3 t / ha to the standard Deviz) and in the Lipetsk region – 5.8 t / ha to the standard Fokor.

Table 1 – Yield per unit and grain protein content of the Alliance pea variety (2006-2010)

Data	Alliance	Aksay tendriled 5, st	± to the standard variety
Yield, kg / ha	22,2	17,4	+4,8
Grain protein content, %	22,7	23,0	-0,3
Yield of protein per unit, c / ha	5,0	4,0	+1,0

High adaptability of the variety, productivity and resistance to drought correspond to some extent to the requirements of the modern agricultural industry. In Don Seed Research Institute a great seed-production work is being done for the rapid seed multiplication and introduction of the new variety to the manufacturing application, which will significantly increase the gross collection of peas in the country and resolve the problem of phytoalbumin deficiency.

REFERENCES

1. Zhuchenko A.A. Strategies of adaptive intensification of agriculture (concept)/ A.A.Zhuchenko – Pushhino, 1994. - 148 p.
2. Ionova E.V., Filippov E.G., Anisimova N.N. Leon – new variety of spring barley, high resistant to the regional drought type. // Grain Farming. - 2011. - №1(13). - P.5-7.