

It is noticeable that due to the small size of agricultural holdings, huge harvesting machines cannot be introduced, but rather these machines must be commensurate with the size of these holdings.

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ASSESSMENT OF THE INFLUENCE OF SYRIAN BREEDING STALLIONS ON THE DEVELOPMENT OF THOROUGHBRED ARAB HORSES IN RUSSIA USING DNA MARKERS

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Abstract: *In the formation of the Russian population has been widely used stallions from different Arab countries, including Syria. Therefore, to analyze the influence of stallions of Syrian origin on the formation of lines and families in thoroughbred horse breeds in Russia, as well as to evaluate the genetic structure of the breed using DNA markers is a very urgent problem.*

Keywords: thoroughbred, horse, breed, genetic structure, DNA markers.

The intensive development of the racing industry in Russia in recent years has led to a number of positive trends, such as the development of racing infrastructure, the reconstruction of racetracks, the creation of private stud farms. It is known that in Russia there is only a small part of the total population of thoroughbred horse breeds (according to the state studbook more than 1500 factory mares) and it is possible to conduct effective breeding only with timely assessment of the level of expression of

the selected traits in each of the structural units of the breed, as well as an assessment of its genetic diversity. The study of the results of breeding use of imported stallions, which became the founders of the main lines in the breed, is very relevant. Using imported manufacturers allows us to further expand the boundaries of adaptation and, as a result, improve performance. In horse breeding in Russia, the use of DNA analysis to control the authenticity of the origin of breeding horses since 2001 is a mandatory procedure for thoroughbred horses, and since 2009 for thoroughbred Arabian breeds, in order to study the genetic structure of the breed, to control the origin, identify horses, assess the level of homozygosity and monitor changes in the breed. The experience of world thoroughbred horse breeding shows that no country in the world, regardless of the achieved level of horse breeding, is able to successfully develop this breed without the help of stallions-producers of foreign selection. In this regard, these studies are of practical significance, as they will provide information about the compatibility of baselines and breeds and identify the most effective combinations of them for further use in breeding work with this breed.

The assessment of the influence of Syrian producers on the development of thoroughbred horse breeds in Russia, as well as the use of DNA markers for genotypic characteristics of lines and families formed on the basis of these producers, will be done through:

1. Conduct a genealogical analysis and identify lines obtained from stallions of Syrian origin.

2. Determine the main successors of these lines at the present time and characterize the performance, exterior indicators and other characteristics of the descendants of these producers in comparison with the descendants of other stallions in Russia and abroad.

3. Determine the influence of stallions-producers on the diversity of their offspring by performance.

4. Identify the influence of stallions belonging to a particular line on the quality of their descendants.

5. Evaluate stallions-producers as fathers of factory Queens, investigate the relationship between their assessment of the quality of offspring and the assessment of the quality of offspring through mothers.

6. Identify the founding Queens of families that are descended from Syrian producers and perform the following analyses: 1. conducting microsatellite DNA analysis with the selection of loci with appropriate primers. 2. Determination of the level of heterozygosity of selected microsatellite DNA loci. 3. Identification of polymorphism features for each microsatellite DNA locus. 4. Assessment of genetic differentiation of modern thoroughbred horse families, taking into account their origin.

The following sources will be used for the research: stud books of thoroughbred horses; data of racing tests, on the basis of which the performance of stallions-producers was evaluated; biological material (blood and hair of horses). Stallions-producers will be evaluated based on the performance of their descendants, the performance of starts, the total winnings, the precocity of descendants, the number of traditional prizes won. The performance indicators will include points,

speed, distance, the number of wins and paid places in trials, and the number of races. Scoring will be determined based on participation and effectiveness of performances of the youngsters in the prizes of a maximum score of 10 winners of traditional prizes of the 1st group on the home racetrack of the country, and the minimum - 4 points - participants of the race and had them paid places.

The average distance of wins will be calculated according to the generally accepted method, as a quotient of the total distance of wins of the entire brood and the number of races won for horses three years old and older. The "performance of starts" indicator will be calculated as the ratio of starts that ended in wins or paid places to the total number of performances of each stallion's descendants.

For the analysis of exterior features, the main measurements (height at the withers, oblique length of the trunk, chest and pastern girth) will be used, based on data from breeding books. Indicators of descendants of each stallion-the successor of the line received from the Syrian producer will be compared with the average values of the analyzed characteristics for the entire estimated livestock. Correlation analysis will be performed to identify the relationships between the features, and variance analysis will be used to determine the reliability and strength of the influence of various factors (line, generation, etc.). To conduct genetic monitoring of the all-round of thoroughbred horses, each selected animal will be genotyped by a maximum of 17 loci of DNA microsatellites.

By doing this we will be getting, data will be obtained on the influence of producers of Syrian origin on the modern structure of the thoroughbred horse breed in Russia, including its genotypic characteristics and indicators of exterior and performance, and recommendations will be given for further use of representatives of individual lines and families of thoroughbred horse breeds in Russia. The results obtained are planned to be used for a retrospective analysis of the development of this breed and for drawing up plans for breeding work with thoroughbred horse breeds in Russia.

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