

Genetics and Breeding

Monitoring of genealogical structure development of East Bulgarian breed horses originating from stallions of other sporting breeds

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Abstract. The origin of horses from the East Bulgarian breed, which descent from the other sport breeds stallions used for grading has been investigated. Genealogical structure development was traced by pedigree analyses of 1123 horses, born during the period from 2000 to 2018. The East Bulgarian Horse Association set of statistical data, concerning stallions' breeding activity and productive life of their progeny were used. Two new lines with founders Hanoverians Da Kapo (GER) and Eistanzer (GER) were set up during the last four generations. Nowadays the line of stallion Da Kapo (GER) has developed in second and third generation after the founder and the line of stallion Eistanzer (GER) – in fourth generation after the founder. A small bulk of genealogical groups with origin traced to stallions Ladykiller, Cottage Son, Cor de la Bryere and Alme Z have developed.

Keywords: sport horse-breeding, selection, genealogical structure

Introduction

The East Bulgarian horse is a national breed with an endangered status. The Stud Book is recognized by the World Breeding Federation for Sport Horses (WBFSH). The main method for improving the traits that are subject of selection is pure breeding. The genealogical structure and variation of genealogical units existence is the subject of numerous scientific studies, the results of which are used in the design of the respective breeding programs of populations (Popov, 1959; Sabeva, 1991; Kierkegaard, 1993; Silvestrelli et al., 1993; Flanagan, 1993; Zechner et al., 2002; Sabeva, 2007; Sabeva and Kaschiev, 2010; Barzev, 2011; Vicente et al., 2012; Bokor et al., 2013; Hamann and Distl, 2014; Medeiros et al., 2014; Popova, 2017).

By the early 1990s, horses of the East Bulgarian breed have been tested in flat races and steeplechase. When evaluating the breeding value, the data from their participation in equestrian sport disciplines was complementary. Over the last three generations, the increased demand for horses suitable for jumping has led to a wider application of grading with stallions from acknowledged sport breeds. Study of Sabeva (2009) showed that in terms of body measurements and development of the bone system, the descendants of the used Hanoverian stallions significantly exceeded the mean of the breed.

The aim of the current study is to establish the existence of new genealogical lines from stallions representing acknowledged sport breeds which were used in the population for grading of the East Bulgarian horse.

Material and methods

Subject of the study was to trace genealogical belonging of horses from the East Bulgarian breed, which on male side descend from the other sport breed representatives. Genealogical structure development was traced by pedigree analyses of 1123 horses, born during

the period from 2000 to 2018. The East Bulgarian Horse Association set of statistical data, concerning stallions' breeding activity and productive life of their progeny were used.

Results and discussion

Two new lines with founders Da Kapo (GER) and Eistanzer (GER) were set up during the last four generations:

Line of the Hanoverian stallion Da Kapo (GER) – Devils Own

Da Kapo¹⁹⁷⁷ (Direx1966 and Heidschnucke) was imported from former East Germany. He originated from the line of thoroughbred Stallion Devils Own¹⁸⁸⁷ through the branch of the Duel II¹⁹⁵⁹, which produced horses with exceptionally good sport qualities. Da Kapo himself had a very successful sports career in Bulgaria as a jumper. He produced 36 East Bulgarian foals, including 22 females. Based on official statistics, 6 of his sons were used for breeding. Nowadays the line is developing in the second and third generations after the founder (Figure 1).



*BSH – Bulgarian sport horse; EBH – East Bulgarian horse

Figure 1. Scheme of Line of the Hanoverian stallion Da Kapo^(GER) – Devils Own

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Line of the Hanoverian stallion Eistanzer (GER) – Adeptus

Eistanzer₁₉₈₅ was imported from Germany and originates from Eistvogel and mother Pera, the daughter of a renowned in the past stallion Adept. He was one of the most widely used stallions in our country during the period 1988-2002. Eistanzer gave over 102 foals, 79 (including 42 females) of which were representatives of the East Bulgarian breed. From the male descendants, 7 of his sons were used for grading. Nowadays, the line develops in second, third and fourth generation after the founder, through the progeny of Avantaj by Jenniffer (GER), Aden by Erigona and Argo Men by Membrana (Figure 2).



*BSH – Bulgarian sport horse; EBH – East Bulgarian horse

Figure 2. Scheme of Line of the Hanoverian stallion Eistanzer (GER) – Adeptus

A characteristic feature of sport horse-breeding at the present stage of breeds development is that the designation of stallions to a given breed is made depending on the licensed test they passed through and sometimes on the willingness of the owner. That is why in the genealogical development schemes there is breed designation of the representatives other than that of the founders, that of the parents or that of the other ancestors. Genetic plasma from some specialized lines of Hanoverian, Holsteiner, Trakehner, KWPN, Zangersheide and other breeds has an international spreading. During the last decades, the large scale implementation of artificial insemination has begun with deep-frozen semen from world-wide stallions. A few genealogical groups in East Bulgarian breed with origin from famous founders are set up:

Genealogical group of thoroughbred stallion Ladykiller (GB)

Ladykiller₁₉₆₁ (GB) was born in England out of Lone Beech and father Sailing Light from the Fairway line. He was imported to Germany, where he became one of the leading stallions in the Holsteiner breed. Ladykiller left behind 35 licensed stallions. His sons, Landgraf I₁₉₆₆ and Lord₁₉₆₇ had no less contribution to the creation of the modern type of Holsteiners. Semen from 7 stallions was imported from the branch of Landgraf I, numerous offspring gave the stallion Limnos (GER). The East Bulgarians Lafaet₂₀₀₄ (Leonardo_{GER} and Tafta from Tigar) and Lord Primero₂₀₀₈ (Limnos_{GER} and Primera from Don Primero) have been rarely used for breeding during the studied period. The imported stallions Lamar₁₉₉₉ (GER) and Lancelot₂₀₀₁ (GER) were representatives of the Lord's branch. From the same branch a deep-frozen plasma was used from Lord Granus₂₀₀₇ (GER). During the past 11 years 49 horses from the line took part in breeding tests for young East Bulgarian horses.

Genealogical group thoroughbred stallion Cottage Son (FR)

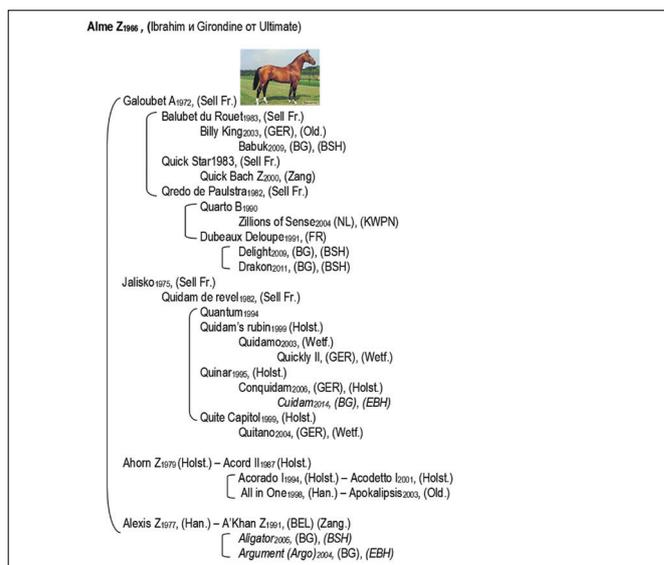
Cottage Son₁₉₄₄ (FR) originates from mother Wait Not and father Young Lover from the Dark Ronald's line. Young Lover is half-sib (by Son-in-Law) of Tihany, a founder of one of the main lines of the East-Bulgarian breed. Cottage Son acted in the Holsteiner breed, and his descendants displayed very good qualities in the military. In Bulgaria the line is represented through the branch of Capitol I₁₉₇₅ and his sons Calato₁₉₈₇, Cassini I₁₉₈₈, Cento₁₉₈₈, Cassini II₁₉₉₄ and Concens₁₉₉₄. The imported from Germany Camargo₂₀₀₁ (GER), Cardinal Lamberto₂₀₀₄ (GER) и Carre₂₀₀₅ (GER) left behind numerous descendants. From the line 35 horses participated in the breeding tests for young East Bulgarian horses.

Genealogical group of stallion Cor de la Bryere (FR)

Cor de la Bryere₁₉₆₈ (FR) is the son of the thoroughbred Rantzau (FR) from the line of Dark Ronald, through the Son-in-Law by branch of Fox Law. His mother Quenotte, as well as himself, belong to the Sell Francais breed. Deep-frozen plasma from the branches of the 6 sons of Cor de la Bryere in the Holsteiner breed - Calypso II₁₉₇₄, Caletto I₁₉₇₅, Caletto II₁₉₇₈, Corrado I₁₉₈₅, Carte Dor₁₉₈₇, Calypso I₁₉₈₉ and stallion Kotrak₁₉₉₇ (GER) was used in the East Bulgarian breed. 32 horses from the line participated in the breeding tests.

Genealogical group of stallion Alme Z (FR)

Alme Z₁₉₆₆ (FR) is a representative of the Sell Francais breed. He originates from Ibrahim, grandson of the thoroughbred Orange Peel (the old line St. Saimon) and mother Girondine out of the thoroughbred granddaughter of Blandford – Ultimate. Alme Z by his descendants has had significant influence on the development of sport horse-breeding in Europe (420 mares during the period 1971-1990). He is the only stallion that has produced 2 World and 3 Olympic champions. His licensed sons founded branches of the line in Zangersheide, Holsteiner, Hanoverian and others sport breeds. Stallions from the branches of Galobet A₁₉₇₂, Alexis Z₁₉₇₇, Ahorn Z₁₉₇₉ и Quidam de Ravel₁₉₈₂ were used for the grading of the East Bulgarian breed (Figure 3). During the period 2006-2018, 23 horses with origin traced to Alme Z participated in the breeding tests for young East Bulgarian horses.



*BSH – Bulgarian sport horse; EBH – East Bulgarian horse

Figure 3. Scheme of Line of the stallion Alme Z₁₉₆₆ (FR), (Sell Fr.)

Conclusion

Two new lines have formed during the last four generation intervals, with the Hanoverian stallions Da Kapo (GER) and Eistanzer (GER) being the founders. Currently the Da Kapo (GER) line is developing in second and third generation after the founder. The Eistanzer (GER) line is developing in fourth generation after the founder. A small bulk of genealogical groups with origin traced to stallions Ladykiller, Cottage Son, Cor de la Bryere and Alme Z have developed.

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