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Research

Effect of the age on performance tests in Warmblood horses in Poland

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ABSTRACT

The best age for testing and starting a career is not clear, and there are pros and cons with respect to conditioning and training of young horses. The aim of the study was to identify the best age for young horses to enter performance tests. The Federation Equestrian International rules allow young horses to start at the age at four. The proper age for young horses to start their performance life was analyzed on the basis of their level of performance in the young test for Warmblood horses on the basis of stallion (329 horses) and mare data (160 horses). An analysis of variance was conducted for fixed effects- year of the performance test and training center. The preferred age for performance tests was the fifth year of life (as calculated for mare performance tests), although basic training does not yield highly statistically significant differences in the performance of 3- and 4-year-old horses. It also seems that longer conditioning does not bring expected effects in performance tests, as horses older than 5 years do not achieve better results.

Introduction

The discussion about the appropriate age to start working with horses has a long tradition and a universal solution has not been found. Although the International Equestrian Federation allows 4-year-old horses to start their competition life under its authority, there are a lot of people who would not allow their horses to compete at that age. Some countries prefer early conditioning, which is a normal Thoroughbred yearling practice. Warmblood horses are conditioned in free movement not only on pasture but also in specially prepared corridors to allow horses to mature in the field until the age of 4. The best age for testing and starting a career is still not clear, and there are many pros and cons to conditioning and training young horses. The adaptation of bones to training has been investigated in detail. Adaptation to training can occur even after 8 weeks, although this process was specifically dependent on various factors such as individual characteristics and a regular and gradual workload (Firth, 2006, Firth and Rogers, 2005, Verheyen et al., 2006). The evidence of broken limbs is closely related to breaks in work (Carrier et al., 1998). The process of adaptation to training is of special importance as it is not a permanent state (Firth et al., 1999). Also, procedures for overall skeleton adaptation are not exactly the same and differ for bone structure and cartilage tendon. The specific timing, type, and amount of natural and imposed exercise are significant (Firth, 2006).

According to Ricard and Fournet-Hanocq (1997) 83% of Warmblood horses start their competition life at the age of 4-6 years. Four-year-old horses make up 40%, whereas 5-year-olds make up 28% and 6-year olds only 15%. The right start is crucial for the quality, but also the length of a horse's life, especially if the mean life-span of horses is as high as reported by Keaveney (2008). The survey group was comprised of people who kept horses aged from 5- to 30-years-old, 30% kept horses less than 10 years, 40% between 10 and 15 years, and 30% above 15 years. According to the research "life with horses", in the group of people whose relationship with horses persists between 1-20 years, 30% consist of people with a 2-5 year relationship, 25% of people with a relationship of 6-9 years, and 25% of people with relationships lasting over 10 years. The same high numbers regarding the use of older horses was noted by McKeever (2003) and underlines the fact that finding the right age to start performance to ensure a longer life is highly significant for today's horse keepers. When we take this fact into account, it seems especially interesting that the French research found that horses which started earlier had a higher probability of staying in

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Table 1
Definitions of the traits evaluated during performance tests

Trait	Definition of the trait according to the official performance test program
Trainer[a]	
Character	A group of the psychological traits that characterized the horse functioning in relation to human and other animals.
Temperament	A group of traits that characterized the reactivity of the horse (speed, intensity, and time) in relation to the outside conditions.
Trainability	A group of traits that evaluate the ability of cooperation with the rider, willingness to respond to the riders aims, and ability to be trained in dressage and jumping.
Trainer[a] and judges[b]	
Jumping under rider	A group of traits: willingness to jump, easiness to jump, and the use of the body during the jump. Stallions are evaluated in the line of obstacles standing in the middle of the riding hall (2 small verticals up to 0.6 m with the highest doublebarre obstacle with the height 0.7-1.1 m). This trait is judged only in the performance tests of stallions.
Free jumping	A group of traits: willingness to jump, easiness to jump, and the use of the body during the jump. Mares are evaluated in the jumping line standing by the wall of the riding hall (2 small verticals up to 0.6 m with the highest doublebarre obstacle with the height 0.7-1.3 m). For mares performance this trait is judged only by judges.
Walk	Horses are judged in groups, after evaluation of trot and gallop. Extended walk is presented around the riding hall and free walk during the direction change on the diagonal of the riding hall. The energy, length of the step, and regularity are judged. Additionally, loosing of the body is judged by the stallions tests. For mares performance this trait is judged only by judges.
Trot	Horses are judged in groups, this gait is the first judged one. Working trot is presented around the riding hall and lengthening of steps during the direction change on the diagonal of the riding hall. The energy, length of the step, and regularity are judged. Additionally, loosing of the body is judged by the stallions tests. For mares performance this trait is judged only by judges.
Gallop	Horses are judged in groups, this gait is the second judged one. Working gallop is presented around the riding hall. The energy, length of the step and regularity are judged. Additionally, loosing of the body is judged by the stallions tests. For mares performance this trait is judged only by judges.
Rider[c]	
Rideability	The overall ability to be ridden, willingness to cooperate with the rider, willingness to respond to the riders aims, softness of gaits, and comfort of the rider.
Dressage ability	The dressage ability to be ridden, willingness to cooperate with the rider, willingness to respond to the riders aims, softness of gaits, and comfort of the rider in dressage exercises. This trait is judged only in stallions.
Jumping ability	The jumping ability to be ridden, willingness to cooperate with the rider, willingness to respond to the riders aims, softness of gaits, and comfort of the rider in jumping exercises. This trait is judged only in stallions.

[a] One mark is given subjectively in the scale 0-10 when 0—very bad and 10—excellent.
[b] One mark is given subjectively as the mean of 3 judges marks in the scale 0-10 when 0—very bad and 10—excellent.
[c] One mark is given subjectively by 1 rider by mare performance evaluation for stallions 1 mark is given as the mean of 2 riders marks for jumping and dressage ability in the scale 0-10 when 0—very bad and 10—excellent.

competition longer, although the probability of an early start was lower (Ricard and Fournet-Hanocq, 1997). The connection between the age at the start of training and the hazard of starting in a racing trial was also the subject of the work of Bolwell et al. (2013). The need to investigate the effect of early exercise on performance and investigate programs for young horses was also underlined (Bolwell et al., 2012).

The aim of the study was to find the age when young Warmblood horses sent for official standardized performance tests in Poland would perform optimally. This expected age should be 4 years on the basis of Federation Equestrian International rules that allow young horses to start at the age at 4. The data used include performance test results of young stallions and mares that were collected in Poland for young breeding horses. The basic nature of these tests allowed the best age at which a horse is initiated in performance to be studied. The same kinds of tests are organized in Germany, the Netherlands, Russia, and Hungary, so the importance of this research is international.

Material and methods

Two groups of horses were analyzed in the study. The material for the first investigated group consisted of the results of 160 mares taking part in 60-day performance tests in Poland in 2007 in 3 training centers during the period from March to November. The horses were aged 3-7 years. The data on mares included an evaluation of the following traits: trainability, temperament, rideability, free jumping, walk, trot, and canter evaluated with a rider in the opinion of a trainer, judges, and an outside rider. The effect of the age of a horse was also evaluated based on the results of 329 stallions that took part in 100-day performance tests in 2004-2007 in Poland, in 2 out of the 3 training centers mentioned previously. Horses were 1324 days old with a standard deviation of 153 days. The data on stallions included an evaluation of the following traits: trainability, temperament, character, rideability, free jumping, jumping with a rider, walk, trot, and canter evaluated with a rider in the opinion of a trainer, judges, and outside riders.

The definitions of traits and requirements are presented in Table 1. All these traits were evaluated during the training and the final test. According to the rules of the stationary performance test for young horses, the first stage of training is devoted to the standardization of feeding, getting to know the horses, and standardization of the preparation of horses (mares should be able to move in the lunging circle in both directions, stallions have be familiar with a rider's weight). The second stage of training is organized as 6 days of work weekly. During 4 of these days, horses are trained in dressage work and during the remaining 2 days horses jump free. Additionally, in the longer stallion performance test, relaxed gaits and acceptance of all a rider's aids (including the bit) are required. Every day, work with stallions finishes with a walk in an open area. Two days of jumping with a rider and 1 day of stamina work in the field with small natural jumps are introduced in the last stage of training. The daily workload does not exceed 30-45 minutes. Basic work is preceded by lunging exercise. Horses learn obedience, calmness, concentration, balance, and rhythm as well as trust in humans. They work individually and in groups. The last 2 weeks are devoted to working with the public and in an official test atmosphere, and the movements required by the final test are improved.

An analysis of variance (general linear models (GLM) procedure of the statistical analysis software (SAS) program) was used to evaluate the effects of the age of horses expressed as a class effect for all horses and additionally for stallions in days. All traits evaluated in the training centers (Table 1) were analyzed separately. The variance analysis included the fixed effects of the age (as class and regression effect for stallions), year of estimation (for stallions),