

IDENTIFICATION OF EQUINE ESTABLISHMENTS WITH DIFFERENT PERFORMANCE STATUS OF ENDURANCE HORSES

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Abstract

A population survey was conducted on seven equine establishments in Peninsular Malaysia, which actively involved in equine endurance sports. This study presents data obtained through questionnaires and interviews of horse personnel. Total number of horses involved in the study was 115 endurance horses of different breed, gender, age and performance level from various equine establishments. Data collected were analyzed using SPSS version 19 (Kruskal Wallis). More than 50 % of horse population from the equine establishments involved was represented by pure Arabians. The pure Arabians were also observed in all performance categories – 40, 80, 120 and 160 km of racing distances. Majority of the endurance horses were geldings and females with the total of 51 % and 36 % respectively. About half of the population was between the age of 6 to 8 years and most of them were found in all performance categories. There were significant relations between breed, gender, age and establishments based on the performance categories in this study. Majority of the equine establishments were involved in the 40 and 80 km racing categories, both representing approximately 30 % of the total population, followed by the 80 km. Both 120 and 160 km racing categories were represented equally by 18 % of the total endurance horse population surveyed.

Keywords: endurance horse, racing categories, breed, age, gender

INTRODUCTION

Endurance race is an equestrian sport based on controlled long-distance races. Since 1950's, endurance race has been a competitive sport and it has been approved as one of the international competition recognized by FEI (Fédération Équestre Internationale) discipline since 1982. Most breed have been tested and used for endurance races. The most competitive are Arabian or Arabian-Crosses (Anglo-Arabian) due to their muscle fibre composition. Other breeds including Thoroughbreds, Criollos, Ponies, and Appaloosas also have been used successfully for endurance races. Arabian horses are better adapted to endurance race to work for longer distance because of their superior oxidative capacity compared to Thoroughbreds. Arabian has the highest composition of Type I muscle fibers and derived their energy by oxidative phosphorylation via electron transport system, allowing them to go for a longer distance as compared Thoroughbred

which only has Type II muscle fibers that derived their energy by anaerobic glycolysis, thus allowing to go for racing in a short period of time (Rivero *et al.*, 1989).

There are quite numbers of equine establishments with various purposes of horse registered with the National Federation (NF) – the Equestrian Association of Malaysia (EAM). The endurance horse's populations were selected from the individual owners, private clubs as well as government horse establishments. There were seven equine establishments, which were actively involved in endurance races were used in this study. Performance status of endurance horses can be classified into 4 categories based on various distances – 40 km (amateur), 80 km (intermediate), 120 km (advanced), and 160 km (professionals).

The objectives of this study were to determine the relationships between breed, gender, age and equine establishments based on performance categories of endurance horses; and to determine the performance categories among local equine establishments in Peninsular Malaysia.

MATERIALS AND METHODS

A population survey was conducted on 7 different equine establishments within Peninsular Malaysia. Only endurance horses that are actively involved with endurance races registered under the EAM, the country's NF were chosen for this study. All the data were collected using questionnaires and interviews of horse personnel (stable manager, horse owners and riders) to obtain information on the total population of endurance horses according to their breed, gender, age, establishments and performance categories. The performance categories of endurance horses can be classified into different levels, which were the amateurs (40 km), the intermediate group (>40 km to 80 km), the advanced group (>80 to 120 km) and the professional group (>120 to 160 km). Data obtained were recorded in Excel 2007 and were statistically analyzed using SPSS 19. The total population of local endurance horses in Peninsular Malaysia was compared based on various variables (breed, gender, age, and establishment) in relation to the performance categories using a non-parametric ANOVA (Kruskal Wallis). Significance was set at $p < 0.05$ for all comparisons.

RESULTS AND DISCUSSION

The most common breed that present in almost all equine establishments in Peninsular Malaysia was pure Arabian. This breed is the most successful breed used as equine endurance athlete and better suited for racing a longer distance (Nielsen *et al.*, 2006). Majority of the endurance horses were geldings followed by mares and the least was stallions. Stallions often have unpredictable temperament in the presence of mares resulting eliminations. Fully matured horses for endurance is at the ages of 6 to 10 years and the peak performance of endurance horses is at the age of 9 to 11 years. Some of the establishments may not have the knowledge in planning to have horses for variety of categories. Professional establishment may have horses for each of the categories for

long term planning. More than 50 % of endurance horses were from Australia and these proved that the equine establishments have the knowledge in endurance horses.

CONCLUSION

It was concluded that there were significant relationships between breed, gender, age and establishments with performance categories of endurance horses.

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