School of Veterinary Medicine

Effects of Daily Oral Administration of Siberian Ginseng on Health and Behavior in Horses

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Fig. 1: Experimental design of the 28-day feeding of a supplement containing Siberian Ginseng (SBG). D=day, WT=body weight, BP=blood pressure, NOT=novel object test, PE=physical exam, HR=heart rate, PD=pedometer.

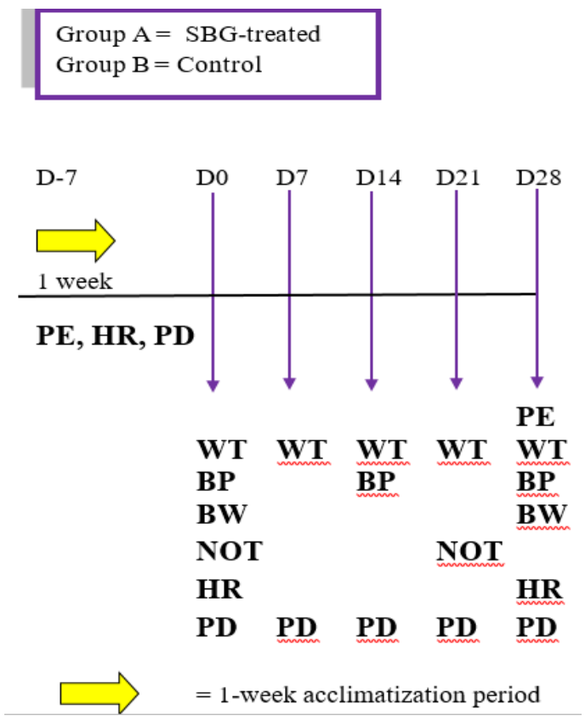


Table 1. Anxiety Grading Scale to Novel Object test (NOT).

Anxiety Score to evaluate reactivity during the NOT	
Score	**Description**
1	Horse shows no reaction or interest in the stimulus.
2	Horse looks in the direction of the stimulus but has no other reaction.
3	Horse jumps when stimulus is applied but does not try to run away.
4	Horse jumps away from the stimulus and tries to leave.
5	Horse completely loses control and tries to flee or refuses to move from the spot.

Fig 2. Mean difference in anxiety scores between the novel objective tests on Day 0, before administration of Siberian ginseng, and after 28 days of supplement administration in treated and control groups. No significant difference was seen between treatment (A) and controls (B).

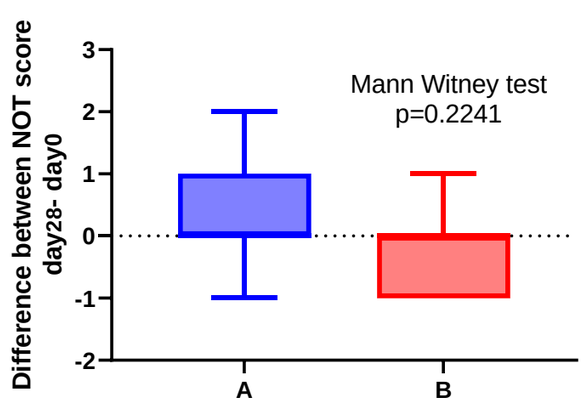
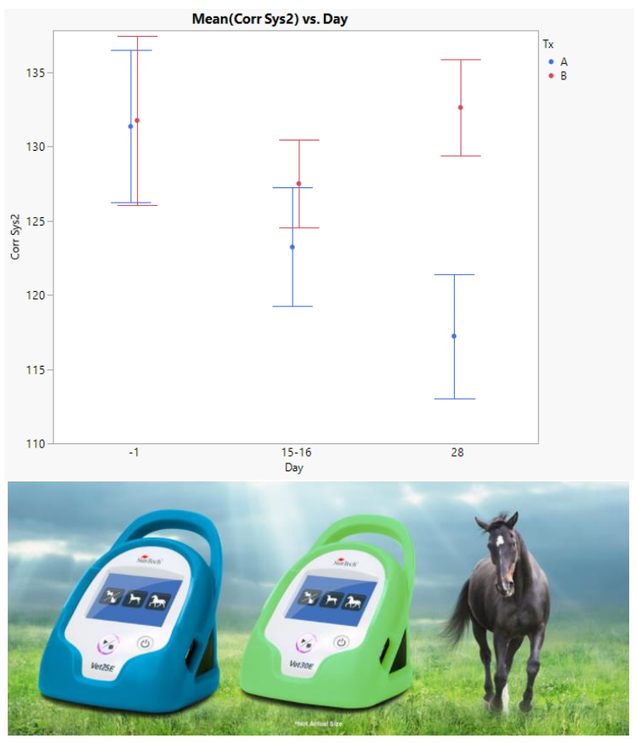


Fig 3. Mean difference in blood pressure in Siberian ginseng-treated (A) and control (B) horses on days 0, 15 and 28 of administration. Systolic blood pressure significantly (P<0.05) decreased by Day 28 in the treated group.



Introduction

Herbal supplements, “green medicines”, are more commonly being administered to horses to maintain health and wellbeing. Several commercial supplements containing Siberian ginseng (SBG; *Eleutherococcus senticosus*) have been shown to support proper metabolism and a healthy immune system, as well as fight fatigue and ameliorate oxidative stress in horses. Although the labels of these products are required to carry cautions, such as “this botanical may be contraindicated in subjects with hypertension and anxiety, and it may lead to hypoglycemia,” there is a lack of published evidence demonstrating these effects. The purpose of this study is to determine if the administration of a supplement containing Siberian ginseng results in hypertension, anxiety, or hypoglycemia in horses.

Materials and Methods

Sixteen clinically healthy adult Thoroughbred horses were housed in stalls for 35 days – 7 days acclimation plus 28 days study. Before treatment was initiated, blood work (CBC and biochemical panel) was evaluated and horses underwent a physical examination to ensure all subjects were healthy. The horses were randomly assigned to treated (N=8; supplement pellets containing SBG, 1,000 mg) or control (N=8; supplement pellets without SBG) groups (Fig 1). Horses were supplemented daily and subjected to a novel object test (NOT) on days 0 and 28. Blood pressure was measured on days 0, 15 and 28 (Fig 1). Anxiety scores were assigned by a masked observer based on the reaction to the NOT test (Table 1). Plasma ACTH was measured before and after the NOT. Horses were monitored daily for clinical signs or adverse events. Blood work was also evaluated on days 28, two hours after administration of the supplement.

Results

The supplement was readily consumed by the horses and no adverse effects were seen over the treatment period. Anxiety scores were not significantly different between treatment groups (Fig 2). Mean systolic blood pressure significantly (P<0.05) decreased in the SBG-treated group by day 28 when compared to Day 0 (Fig 3). Siberian ginseng treatment did not have an effect on heart rate or blood values--including glucose, indicators of anemia, blood proteins, liver enzymes, kidney values, electrolytes, calcium or ACTH. Body weight did not change in either treatment group throughout the study.

Conclusion

- The SBG supplement (1,000 mg) was readily consumed and safe.
- A Siberian ginseng supplement administration for 28 days did not cause health issues, or result in hypertension, hyperglycemia, or increase anxiety or stress to a novel object test.