

Studying the Effects of the SUCCEED[®] Digestive Conditioning Program[®] on the Development of Horses at Weaning

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Overview: The equine supplement product called SUCCEED[®] contains ingredients believed to support good digestive function, digestive tract health, and optimal immunity in horses. A time of major digestive stress on the horse is the weaning period. During the weaning period, the foal is separated from its mother, is co-mingled with other foals, and is forced to adapt to an entirely new diet. Any of these stresses could result in increased disease challenges, a loss of appetite and feeding, and ultimately a foal that does not grow to its potential. As a result, nutritionally supporting optimal digestive function, health and immunity in the face of these stresses would be a benefit for the developing foal.

The purpose of this experiment was to measure the effect of regular use of SUCCEED Digestive Conditioning Program on the growth and health of foals from weaning through to 80 days after weaning. Individual body weights and blood chemistry were monitored on a monthly basis to determine growth rates and immunity and stress parameters.

Methods: 187 standardbred foals on 1 breeding farm were separated into 8 equal groups of approximately 20 foals in accordance with standard weaning protocols for this farm. Each group was assigned to a paddock where foals had free access to pasture, and were fed and watered together. The paddocks were then randomly assigned to treatment groups with 4 groups receiving the SUCCEED treatment and 4 groups receiving the Control treatment. SUCCEED was administered to individual foals directly as an oral paste for 10 days prior to weaning, and through the feed at a rate of 1 ounce/head/day subsequent to weaning. The control treatment foals did not receive SUCCEED either prior to weaning or through the feed. At day -10, day 0, day 20, day 50 and day 80 individual body weights and blood samples were taken from each horse in the study. Body weights were obtained using a digital walk-over type scale and recorded by unique identification numbers for each horse. Blood samples were obtained by a

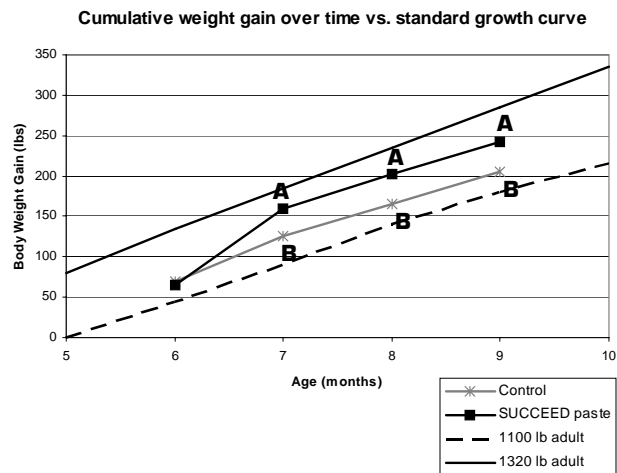


Figure 1. Comparison of cumulative growth rates during experimental time period. At onset of trial, both treatment groups had similar body weights. At days 30, 60, and 90 the weight gains of the SUCCEED treatments were significantly larger than those of the control group ($p < 0.05$). (Different subscripts [A, B] indicate statistically significant differences at $p < 0.05$.)

licensed veterinarian on site and sent to Antech Diagnostics for complete CBC, chemistry, and cortisol analysis. All data were analyzed using a One-way unstacked ANOVA procedure (Minitab) and treatment means were considered significantly different at the $p = 0.05$ level.

Results: Foals receiving SUCCEED paste for 90 days, from 10 days prior to weaning through 80 days after weaning, had significantly greater gains in body weight at days 30, 60, and 90 of the experimental period, when compared to the control animals (fig. 1). For comparison, growth rates for horses with adult body weights of 1100 lbs and 1320 lbs are also given. It was observed that in the first 30 days 10% of all animals in the control group actually lost weight, while 0% in the SUCCEED group lost weight.

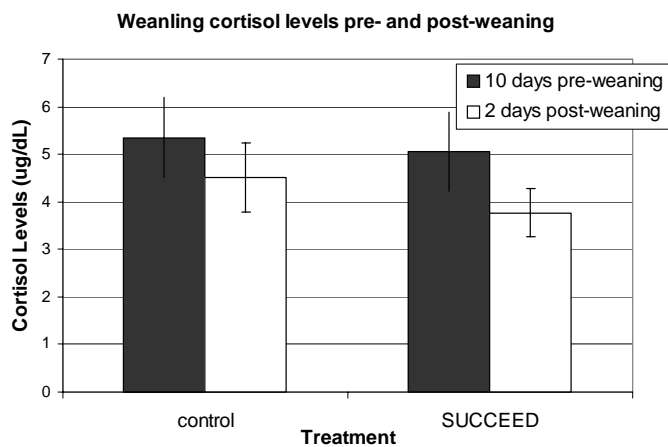


Figure 2. Blood cortisol levels. Blood cortisol levels were taken at 10 days prior to weaning and 2 days post-weaning. Cortisol levels in the SUCCEED group were found to be numerically lower than control, but not significantly so. Normal cortisol levels for horses of this age range from 2 to 6 ug/dL .

Foals receiving SUCCEED paste also had numerically lower cortisol levels than the control immediately following weaning, however, these results are not statistically significant. All other blood chemistry parameters for the study were within normal ranges for foals of this age and type, and no significant differences were detected.

Discussion: The weaning period for a foal is a stressful time, and the accumulation of stress on digestive health could impede growth, health, and performance of the foal during this period. Stresses include removing the foal from the mother, grouping foals into new paddocks, and changing their diet over to 100% grass and concentrate. Any of these accumulated stressors could result in a foal more likely to get sick or go off feed, thus reducing growth rate. The foals in this particular experiment will be sold into training as racehorses. It is therefore critical that they get off to the best start possible, with good growth rates and a minimum of disease challenges that would limit their potential value at sale, or their ultimate racing potential.

The quality of control group foals in this study were typical for this particular farm - growth rates were within normal limits and were generally considered good by the farm's own standards. Still, SUCCEED was found to statistically significantly improve the weight gain of horses when compared to

the control group. This improvement in weight gain was seen within the first 30 days, and the trend continued throughout the 90 day study. By the end of the study, the SUCCEED group gained approximately 50 more pounds per animal, on average, compared to the control group. These results were significant to the farm, as the improvements seen in the foals fed SUCCEED suggest that the quality of the farm's foal crop could still be improved.

It should be noted that increased weight gain can be a causative factor in the development of orthopedic diseases in foals. To evaluate whether growth rates in this study could be considered too high, weight gains were compared to standard growth curves for foals of an expected adult weight between 1100 lbs and 1320 lbs. As the results indicate, the higher growth rates for the SUCCEED group horses in this study were still within the range considered normal for an adult horse of this type, indicating that the improved growth rates would not lead to DOD lesions.

The SUCCEED Digestive Conditioning Program contains carefully chosen ingredients designed to support good digestive function and health while at the same time supporting optimal immunity. Previous experiments have shown SUCCEED's utility in supporting good immunity in mares, and in reducing gastric health issues in racehorses. The results in this study also indicate that SUCCEED can help to support good growth rates in weaned foals. The trend toward lower cortisol levels in the SUCCEED group, combined with the fact that no animals in the SUCCEED treatment lost weight, while a full 10% of the animals in the control group lost weight within the first 30 days, may be an indication that the use of SUCCEED helped reduce overall stress levels in these horses. Further, SUCCEED's utility in supporting more efficient utilization of feed and grass fed to the animals may have also contributed to the improved weight gain. In any event, the results of this study indicate that as a group, the SUCCEED treatment horses were overall healthier and more consistent in their progressive development, compared to the control group horses.

This study indicates that a SUCCEED Digestive Conditioning Program can be of benefit to any operation when used just prior to and for 3 months after weaning to support good growth rates and animal health during this very stressful time.