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Changes in body condition and serum metabolites in endurance horses fed stabilized rice bran.

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INTRODUCTION

New sources of fat supply in the diet of endurance horse represent a great challenge for the future. Among others, stabilized rice bran can be effective in increasing the energy content of the diet and lowering some fat-related metabolic parameters, preserving at the same time the animal from excessive oxidative status, due to its high content of vitamin E.

OBJECTIVE

The objective of the trial was to study the effects of dietary stabilized rice bran on body condition and serum lipid and carbohydrates metabolites in endurance horses.

MATERIALS & METHODS

- Four subjects (419±5.98 kg) in training
- 500g/d of stabilized rice bran (Risospint®, Riso Scotti Ingredients, Italy)
- 85F:15C diet, fed at 2.5% body weight (23 Mcal/d DE and 760g/d crude protein).
- Seven months of dietary treatment.
- Monthly blood samples for Alanine aminotrasferase / ALT), Aspartate aminotrasferase (AST), glucose, cholesterol and triglycerides serum content plus one sample after one month of dietary treatment.
- Monthly body condition score, heart rate, capillary refill, and mucous membrane colour were evaluated monthly, at rest.
- Data were analysed by MIXED procedure of SAS considering the effect of time response to the dietary treatment.

RESULTS

- No effects on feed intake, body weight, body condition score heart rate, capillary refill, and mucous membrane colour.
- Significantly reduced ALT, cholesterol and triglycerides serum content mainly at the end of the trial.
- Glucose serum content showed more variable trends in the first four months of the trial, with significant increased levels at 30 days of treatment

CONCLUSIONS

The inclusion of stabilized rice bran in the diet of endurance horses in training exerted lowering effects on ALT, cholesterol and triglycerides basal serum content with a long-time administration effect.

Table 1. Chemical composition of stabilized rice bran (Risospint®, Riso Scotti Ingredients, Italy)

| | Content, as fed |
|-----------------------|-----------------|
| Energy content (kcal) | 400.00 |
| Ether Extract (%) | 18.00 |
| Crude Protein (%) | 14.00 |
| Starch (% , as fed) | 13.50 |
| Crude Fibre (%) | 9.00 |
| Ca (%) | 2.25 |
| P (%) | 1.65 |
| Vit. E (mg) | 60.00 |
| Gamma-Oryzanol (mg) | 450.00 |

Table 2. Experimental diet chemical composition

| | g/head/d |
|-------------------|----------|
| Crude Protein | 765.1 |
| Ether Extracts | 275.3 |
| Crude Fibre | 3116.1 |
| Ash | 860.7 |
| Digestible Energy | 23.3 |

Pictures 1to 7. Effect of stabilized rice bran (500g/head/d) dietary administration on Body Weight (1), Body Condition Score (2), Aspartate aminotrasferase (AST, 3), Alanine aminotrasferase (ALT, 4), Cholesterol (5), Triglycerides (6) and Glucose (7) serum content in endurance horses. ^{a,b} P<0.05; ^{A,B} P<0.01; ^(b) 0.1<P<0.5; [§] # time points differ each other for P<0.05.

