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93 Effect of replacing part of concentrates with pelleted alfalfa on squamous gastric ulcers in exercised trotters.

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Horses at heavy work have a high prevalence of Equine Squamous Gastric Disease (ESGD). Exposure of the squamous mucosa to HCl causes damages, which can be more severe with acids produced by bacterial fermentation of starch and soluble sugars at pH $\leq$ 4. Among low-starch feedstuffs commonly fed to horses, alfalfa (*Medicago sativa*) has the strongest buffering capacity, and promising data on its healing impact have been observed in preliminary trials. In this field study, the effect of alfalfa was investigated on ESGD prevention and healing in trained horses. In 4 training centers, 80 exercised trotters ("very heavy work" based on NRC 2007) and housed in individual boxes were followed for 42 d. Gastroscopies were performed on D0, D21, D42 by an equine practitioner in a blind assessment. ESGD severity was scored using the EGUS Council 0–4 scoring system. On D0, horses were divided into 2 homogeneous groups on each center based on ESGD initial score, age and sex. Horses in control group (CON; n = 40) kept their previous ration (hay *ad lib* and 6.6 ± 1.8kg pellets; 4.5 ± 1.5g starch/kg BW/d). In the alfalfa group (ALF; n = 40), 50% (vol/vol) of pelleted concentrates were replaced by pelleted dehydrated alfalfa (hay *ad lib* and 6.3 ± 1.6kg pellets; 2.3 ± 0.7g starch/kg BW/d). Rations were almost isoenergy and isoprotein per center. Training continued without difference between groups. Horses were categorized in "no or mild ulcerations" (NMU – grades 0, 1, 2) and "severe ulcerations" (SU – grades 3, 4). Among the NMU horses at D0 (n = 49), preventive effect of the diet was determined by comparing number of NMU and SU horses at D21 and D42 using a Chi-2 test. Curative effect was evaluated by comparing number of NMU and SU horses at D21 and D42 among the SU horses at D0 (n = 31). No significant effect of the diet was measured on ESGD prevention or healing. In our study, ALF rations remained higher in starch compared with previous studies. In addition, in the 2 trials that showed a beneficial effect of alfalfa, horses were not intensively trained and alfalfa was fed as fodder. Feeding alfalfa pellets may have limited the preventive effect associated with saliva and formation of a protective layer on top of the gastric chyme.

Keywords: Alfalfa Pellets, ESGD, Training

Table 1
Effect of diet on ESGD in exercised horses

	Preventive effect (ESGD grades 0-2 on D0)		Curative effect (ESGD grades 3-4 on D0)	
	ESGD grades on D21			
	ESGD 0-2	ESGD 3-4	ESGD 0-2	ESGD 3-4
Control diet*	N=19	N=5	N=5	N=9
Alfalfa diet	N=20	N=4	N=8	N=8
Chi-2 test (*P*-value)	*P*=0.71		*P*=0.68	
	ESGD grades on D42			
	ESGD 0-2	ESGD 3-4	ESGD 0-2	ESGD 3-4
Control diet	N=16	N=9	N=5	N=10
Alfalfa diet	N=18	N=6	N=8	N=8
Chi-2 test (*P*-value)	*P*=0.40		*P*=0.35	

* 2 horses not observed at D21.