

*Director's
Digest*



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Fat in Horse Feeds Goes Commercial

Studies with animal fat in the feeds of endurance horses, conducted at the Cornell University School of Veterinary Medicine with grant support from the Fats and Proteins Research Foundation, have led to the marketing of new fat supplemented horse feeds by several manufacturers.

Until recently, fat was not ordinarily added to horse feeds. Because the gall bladder, the storage reservoir of the bile that is an essential factor in fat digestion, is absent in the horse, it was believed that the horse's digestive system was unable to handle substantial amounts of dietary fat. Bile, however, is secreted continuously in the horse and Cornell's Professor Harold Hintz and his associates postulated that horses should be able to digest rations supplemented with fat. As other investigators had shown, dietary fat improves the performance of pigeons

flying long distances, of swimming rats and of racing sled dogs. Thus, it was of interest to determine if fat would also elicit an improvement in the performance of competition horses and others subjected to strenuous exercise.

An experimental group of horses received a pelleted diet of 40% alfalfa meal, 52% corn and 8% feed grade animal fat. The control group was fed pellets of 40% alfalfa meal and 60% corn. Each horse also received 6 lb. of hay daily and trace mineral salt was available ad lib. Daily intake of the pelleted feed was regulated to maintain body weight during a pre-exercise conditioning period.

Performance was monitored by comprehensive blood analyses, vital signs, muscle glycogen and sweat production after each group was ridden up to 50 miles daily. Few differences were seen but the results of two replicated trials conducted in succeeding years indicated an effective utilization of the dietary fat. The most significant difference was the higher blood glucose level of the fat-supplemented group. Free fatty acid levels were not changed significantly and the consequent higher free fatty acid:glucose ratio observed in the control animals is suggestive of a greater degree of fatigue. Feed consumption was lower in the fat-

supplemented horses and no palatability problems arose.

A new fat-supplemented horse feed now being marketed in the United States is based upon milk proteins and contains 10% tallow and grease. It is intended for all ages, from the youngest foals as well as for grown horses. Appropriately named "Start to Finish", the new pelleted feed which is manufactured by Milk Specialties Company also contains 28% digestible protein, a very low level of fiber plus vitamins and minerals. An Australian manufacturer is producing a similar fat-supplemented horse feed. According to Dr. Herbert Polzin, research director at Milk Specialties, a high protein-high energy diet is essential for young foals to assure good, uninterrupted growth during the critical first year of life. Because both protein and fat content of the mare's milk fall off drastically during the course of the nursing period, supplementation of the foal's diet is justified as early as possible. Dr. Polzin also points out that height and size of a working horse are, among other criteria, important determinants of its selling price and of its performance in competition.