

Quality Feed Grains – Research highlights and opportunities

John L Black

John L Black Consulting, Locked Bag 21, Warrimoo NSW 2774, Australia

Abstract

The available energy content of cereal grains varies widely both between animal species and between grain cultivars. The Premium Grains for Livestock Program was established to determine the causes of this variation and to identify methods for improving the value of grains for livestock. The digestible energy content of barley grain for sheep has been shown to range from 11.5 MJ/kg for a heavily frosted sample of Arapiles to 15.5 MJ/kg for a sample of the Merlin cultivar. The available energy content of a sorghum grain for cattle was measured at 9.7 MJ/kg compared with approximately 16 MJ/kg when fed to pigs or poultry. These differences in energy values between grains and livestock species can be explained by differences in the gross chemical composition of the grains, physical barriers of the endosperm protein matrix and cell walls limiting enzyme access, the amylose content of the starch and the nature of the animal proteolytic enzymes. There is considerable potential for improving the nutritional value of grains for livestock through plant breeding and processing techniques.

Full Text

<http://www.regional.org.au/au/abts/2001/m3/black.htm>