

Two experiments were conducted to investigate aspects of fiber composition and digestibility in 12 feed ingredients commonly fed to pigs. The 12 ingredients included 3 grains (corn, sorghum, and wheat), 3 co-products from the dry grind industry [corn distillers dried grains with solubles (DDGS) and 2 sources of sorghum DDGS], 4 co-products from the wet milling industry (corn gluten meal, corn gluten feed, corn germ meal, and corn bran), and 2 co-products from the flour milling industry (wheat middlings and wheat bran). In Exp. 1, the carbohydrate composition of the 12 ingredients was determined. Grains contained approximately 64.3% starch and 8.1% non-starch polysaccharides (NSP), whereas grain co-products contained approximately 12.6% starch and 28.1% NSP. The concentration of soluble NSP was minimal in all ingredients and ranged from 0.4% in sorghum to 6.6% in corn germ meal. Non-starch polysaccharides from corn and corn co-products contained approximately 27% glucose, 22% arabinose, and 27% xylose, whereas NSP from sorghum and sorghum DDGS contained approximately 38% glucose, 26% arabinose, and 20% xylose, and NSP from wheat and wheat co-products contained approximately 25% glucose, 25% arabinose, and 40% xylose. Experiment 2 was conducted to determine in vitro ileal and total tract digestibility of DM and NSP in the 12 ingredients. In vitro ileal digestibility of NSP was close to zero in all feed ingredients, indicating that pepsin and pancreas enzymes have no effect on in vitro degradation of NSP. A strong correlation ($R^2 = 0.97$) between in vitro ileal digestibility of DM and NSP concentration in feed ingredients was observed. In vitro total tract digestibility of NSP ranged from 6.5% in corn bran to 57.3% in corn gluten meal, which indicates that the extent of fermentation of NSP in a feed ingredient depends on the amount and type of NSP in the ingredient. In conclusion, NSP composition of grains and grain co-products plays an important role in determining the extent of fermentation of NSP; therefore, NSP composition of each ingredient influences the energy value of grains and grain co-products.

Key Words: co-products, in vitro digestibility, non-starch polysaccharides

NONRUMINANT NUTRITION: CO-PRODUCTS FEEDSTUFFS

O072 **Carbohydrate composition and in vitro digestibility of dry matter and non-starch polysaccharides in grains and grain co-products.** N. W. Jaworski^{1,*}, H. N. Lærke², K. E. Bach Knudsen², H. H. Stein¹, ¹*Animal Science, University of Illinois, Urbana*, ²*Animal Science, Aarhus University, Tjele, Denmark*.