Fiber is one of the four macronutrients that yield dietary energy for pigs (others are starch, fat, and protein). To yield energy, fiber must be fermented (primarily in the hindgut) by microbes producing volatile fatty acids (VFA). Price increases for traditional feedstuffs such as cereal grains and protein meals have stimulated the pork industry to consider dietary inclusion of fibrous co-products that are produced when grain is processed into human food, fuel, and bio-industrial products. High fiber co-products include distillers dried grains with solubles (DDGS), oilseed meal, expeller, and cake, and co-products from flour milling. As omnivores, pigs are ideally suited to convert these non-human edible co-products into high quality food animal protein. Thereby, co-products can partially offset increases in feed cost provided their price is competitive per unit of net energy or digestible lysine, but also present risks and feeding challenges. Effects of feeding high fiber co-product may depend on diets being balanced for energy value or not. In weaned pigs, high fiber diets were thought to reduce feed intake, and thereby hinder energy intake during the energy-dependent phase of growth. However, such a relation is not solid across the spectrum of dietary fiber. Fiber characteristics play a role in gut health and early development. High fiber diets have lower energy digestibility and concurrent lower feed efficiency, but increased feed intake may maintain growth. In growing-finishing pigs, high fiber diets increase viscera mass, and thereby reduce dressing percentage. In restricted-few sows, fiber and produced VFA play a role in reaching satiety responses. In conclusion, depending on the price of high fiber co-products, high fiber diets may be part of a range of solutions to reduce the feed cost, and may thereby support economically-sustainable pork production.

Keywords: co-product, fiber, pig