

Non-traditional feed ingredients in diets for pigs*H. Stein**University of Illinois, Department of Animal Sciences, 1207 West Gregory Dr. Urbana, IL 61801, USA; hstein@illinois.edu*

Non-traditional feed ingredients that may be used in diets for pigs include, but are not limited to, bakery meal, rice bran, field peas, and yeast products. Bakery meal consist of dried former foods and is produced after collection of non-saleable bread, pastries, cookies, and confectionary products. Generally, companies that produce bakery meal are able to supply meals that are consistent in chemical composition, whereas the variability in digestibility of amino acids and for metabolizable energy is considerable among sources. Bakery meal has low digestibility of lysine, but excellent digestibility of phosphorus, and bakery meal may be included in diets for weanling pigs by up to 25%. Rice bran is the co-product produced when bran is removed from de-hulled paddy rice and the product usually contains 20 to 30% starch, 12 to 15% crude protein, and 20 to 25% total dietary fibre. Rice bran contains 15 to 20% acid hydrolysed ether extract, but the product may be defatted, in which case the fat content is around 2%. The metabolizable energy in defatted rice bran is less than in maize, but full fat rice bran contains more energy than maize. Rice bran may be included in diets for weanling or growing-finishing pigs at up to 30% without negative impacts on growth performance. Field peas contain around 40% starch and 20% crude protein. The protein is high in lysine, but low in sulphur-containing amino acids. However, amino acids and phosphorus in field peas have excellent digestibility and the metabolizable energy is close to that in maize. Field peas may be included in diets for weanling pigs by up to 36% and in diets for growing and finishing pigs, field peas may replace all soybean meal. Yeast is a single cell protein that may be produced on different substrates and there is, therefore, some variability in the nutritional value among sources of yeast. Protein concentration is between 40 and 50%, but digestibility of amino acids vary considerably among sources. High quality sources of yeast may be included in diets for weanling pigs by up to 14%. In conclusion, there are many non-traditional feed ingredients available to the swine feed industry, but it is critical that each ingredient is assessed in terms of nutritional composition, energy and nutrient digestibility and impact on growth performance of pigs.