Can Citrus Residue Be Used for Animal Feed?

Someone in our network asked us this question. The following is abstracted from a University of Florida bulletin "Citrus Feeds for Beef Cattle." Although the bulletin is directed toward cattle, similar results would probably be found with other ruminants. To the best of my knowledge the residues are not fed to monogastric animals such as pigs or chickens, because much of the material would be indigestible.

Dried citrus pulp is high in calcium and digestible energy, but low in digestible protein and phosphorus. (What is the difference between, for example, "digestible" energy and just plain energy? Just because something is present in a food does not mean an animal's digestive system can make use of it. Only the digestible protein is available to an animal; the rest is excreted in the manure.)

When good quality citrus pulp makes up no more than 40% of the ration, and is properly supplemented with protein and phosphorus, it has a feeding value 8590% of shelled corn. It is highly palatable, i. e. is readily eaten. (We have purchased beef feed containing citrus residue. The smell was wonderful). Citrus pulp is classified as a "bulky concentrate feed" because it is a bulky material that is also relatively high in digestible energy. Because it is relatively low in protein (approximately 6%) it is primarily an "energy feedstuff with roughage properties."

The bulkiness of citrus residue limits how far it can be transported economically. The volume can be greatly reduced by pelletizing. Its density can be increased from 13 pounds per cubic foot to 42. The reduced volume not only makes transportation less expensive, but also cattle can hold more and might gain a bit faster.

Dried citrus meal (the material that passes through sieves while dried citrus pulp is being made) can be used as a substitute for cottonseed or soybean meal.

The more relevant question for most of our readers, who will not have the facilities to process citrus waste, is the feeding value of fresh wet pulp. It is not widely used today in the States because of the expense of transporting and handling a material containing 7085% water. Fresh grapefruit was fed routinely by Florida farmers before the dried product became available. Fresh grapefruit is more palatable than orange pulp.

The greater the water content of the pulp the lower the nutritional value. It is basically a carbohydrate (energy) feed, so supplements are necessary. If fed in a feedlot, supplements must include protein, a dry carbohydrate material, a source of roughage, vitamin A and minerals. If fed as a supplement to pasture, it is important to also feed protein and minerals.

During the 1940's several experiments were done on making silage from citrus waste. Including some hay or sugarcane improved the quality and palatability.

 http://edn.link/rthax9