

Finding Value in Food Waste

Almond (nut) hulls – Almond hulls are a good source of digestible fibers and sugars and have a moderate amount of energy. They are digestible for cattle and an affordable feed source. Since almost all almonds produced in the United States are grown in California, almond hulls are also found mostly in California.

Apple peels and cores – Apple peels and cores from the production of apple juice, applesauce, apple pies, and other apple products can be used for a livestock feed called apple pomace. Apple pomace contains high levels of sugars (fructose and glucose), which provide a quick form of energy. Since fresh apple products spoil quickly, the feed is most useful to farms and ranches local to the apple orchard. Apple pomace is sold to feedlots in the state of California, Michigan, New York, North Carolina, Virginia, Washington (Washington Apples), West Virginia, and the New England states where apples are grown.

Bakery waste – Many bakeries across the United States have bread products, candies, and cookies that cannot be sold for various reasons such as being broken, misshapen, or past its shelf life. However, this bakery waste can be sold to feedlots for cattle. Most bakery products can be rich in fat and carbohydrates. *Palmer Candy Company* in Sioux City, Iowa, sells discarded candy to local farmers. As another example, there are 63 *Wonder Bread & Hostess* factories in the United States that are mostly located in the Midwest, in states like Illinois, Indiana, Iowa, Kansas, and Missouri as well as California, Florida, and Ohio. These factories may sell their waste to local farmers and ranchers.

Cull Onions – Onions are low in fiber and high in sugars. They are a digestible source of nutrients and energy when used in animal feeds. Onions also contain calcium and phosphorus.

Brewers Grains – Also called *distiller's grain*, is rich in protein. It can be used as a protein supplement for ruminant animals such as cattle. It is a palatable (good tasting) feed, but must be fed fresh or dried since its susceptible to bacterial or fungal contamination.

Orange peels and pulp – Citrus peels and pulp provide roughage and vitamins to an animal's diet. There are also oils in the peel and pulp that are natural microbial. Researchers are finding ways these oils help to kill pathogenic bacteria. Oranges are grown and processed in warm, southern areas of the United States. Arizona, California, Florida and Georgia are large orange producing states.

Tomatoes – Tomato peels, pulp, and seed leftover from processing tomato products have nutritive value. The mixture of these leftovers is called tomato pomace. The seeds contribute the most protein and fat to the pomace. The skins provide fiber.

Rice – Products from rice, such as rice hulls, rice bran, rice polishings, and broken rice can be added to feed for cattle. They provide energy and minerals to a ruminant animal as well as a roughage to add bulk to feed. Rice producing states include Texas, Louisiana, Arkansas, Missouri, Mississippi, and California.