



## Introduction

Fiber is a polysaccharide, along with other organic compounds and lignin. The type of bonds between sugar units is what makes plant fibre differ from starch. While this difference makes fiber indigestible by dogs and cats and less useful as an energy source, it still provides other benefits that are essential to your pet's health and dietary well-being such as helping digestion and regularity. Fiber is important to the diet of every species, however, anatomical differences demand specific and appropriate use.



In general, any and all fruit & vegetable pulps are an excellent source of fiber.

Fibre is most often categorized as soluble or insoluble. However, plant pulps provide both types of fiber and can be thought of as partially soluble.

Soluble fiber (pectin, gums, mucilage) has great water holding capacity and are almost completely digested by intestinal bacteria.

Insoluble fiber (cellulose, lignin most of the hemicelluloses, bran) holds less water and is less digestible by intestinal bacteria. This fiber type is also responsible for increasing the speed of passage of materials through the intestinal tract, a phenomenon known as 'decreasing intestinal transit time'. This same phenomenon increases fecal weight, water volume, frequency of defecation and gas production.

For anyone who has experienced constipation, the reality of the benefits of optimal and appropriate fiber types and amounts becomes much easier to accept.

Fiber has the single most important influence on your pet's intestinal health and performance.

In general, any and all vegetable pulps are excellent. Too much of either form of fiber is inadvisable and vegetable pulps provide an ideal compromise, providing the beneficial intestinal regulation of a low amount of insoluble fibre and the fermentability that provides the required short chain fatty acids utilised by intestinal cells.

## Intake of Fiber

The exact type of pulp employed generally involves availability. Consequently, the most common sources for dry foods are beet pulp, rice bran and soy hulls. (A common misconception in the marketplace has beet pulp causing red coats. This is not the case and, in fact, beet pulp is grey in colour when used in pet foods). The bran's of various grains are also an excellent choice as a fiber source. Rice, oat and perhaps wheat bran are most commonly seen. The required levels of fiber will, of course, vary with age and specific bowel characteristics.

Dietary intake levels in the 3-4% range are ideal for younger animals, while slightly higher levels are appropriate for sedentary and senior individuals. Even higher levels are occasionally employed for diabetic animal diets, but this is a topic for individual veterinary application and as yet not fully researched

The use of very high levels of fiber for long periods of time are, under normal circumstances, to be discouraged. Large amounts of dietary fiber can interfere with the absorption of other nutrients, specifically lipids, zinc, calcium and iron.

Similarly, insoluble fiber types that might present a source of direct irritation, such as husk type fiber or peanut shell fiber should be used on limited occasions. These fiber types may be helpful in alleviating constipation or moving hairballs through the intestinal tract, but their tendency to initiate mucous production over the longer term also interferes with proper nutrient uptake. The irritation will also increase stool urgency.

## Fiber Sources

### Dried beet pulp

Dried residue from sugar beets, which has been cleaned and freed from crowns, leaves and sand, of which, have been extracted in the process of manufacturing sugar.

### Rice bran

The pericarp or bran layer and germ of rice.

### Wheat shorts/middling:

Consists of fine particles of wheat bran, wheat germ, wheat flour and some screenings from flour milling.

### Cellulose

Purified, mechanically disintegrated cellulose, prepared by processing alpha cellulose, obtained as a pulp from fibrous plant materials.

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