

# Packaged Breakfast Cereals

Excerpt from  
Dirty Secrets of the Food Processing Industry  
by Sally Fallon

Dry breakfast cereals are produced by a process called *extrusion*. Cereal makers first create a slurry of the grains and then put them in a machine called an *extruder*. The grains are forced out of a little hole at high temperature and pressure. Depending on the shape of the hole, the grains are made into little o's, flakes, animal shapes, or shreds (as in Shredded Wheat or Triscuits), or they are puffed (as in puffed rice). A blade slices off each little flake or shape, which is then carried past a nozzle and sprayed with a coating of oil and sugar to seal off the cereal from the ravages of milk and to give it crunch.

In his book *Fighting the Food Giants*, Paul Stitt tells us that the extrusion process used for these cereals destroys most of the nutrients in the grains. It destroys the fatty acids; it even destroys the chemical vitamins that are added at the end. The amino acids are rendered very toxic by this process. The amino acid lysine, a crucial nutrient, is especially denatured by extrusion. This is how all the boxed cereals are made, even the ones sold in the health food stores. They are all made in the same way and mostly in the same factories. All dry cereals that come in boxes are extruded cereals.

The only advances made in the extrusion process are those that will cut cost regardless of how these will alter the nutrient content of the product. Cereals are a multi-billion dollar business, one that has created huge fortunes.

With so many people eating breakfast cereals, you might expect to find some studies on the effect of extruded cereals on animals or humans. Yet, there are no published studies at all in the scientific literature.

Let me tell you about two studies which were not published. The first was described by Paul Stitt who wrote about an experiment conducted by a cereal company in which four sets of rats were given special diets. One group received plain whole wheat, water and synthetic vitamins and minerals. A second group received puffed wheat (an extruded cereal), water and the same nutrient solution. A third set was given only water. A fourth set was given nothing but water and chemical nutrients. The rats that received the whole wheat lived over a year on this diet. The rats that got nothing but water and vitamins lived about two months. The animals on water alone lived about a month. But the company's own laboratory study showed that the rats given the vitamins, water and all the puffed wheat they wanted died within two weeks---they died before the rats that got no food at all. It wasn't a matter of the rats dying of malnutrition. Autopsy revealed dysfunction of the pancreas, liver and kidneys and degeneration of the nerves of the spine, all signs of insulin shock.

Results like these suggested that there was something actually very toxic in the puffed wheat itself! Proteins are very similar to certain toxins in molecular structure, and the pressure of the puffing process may produce chemical changes, which turn a nutritious grain into a poisonous substance.

Another unpublished experiment was carried out in the 1960s. Researchers at Ann Arbor University were given 18 laboratory rats. They were divided into three groups: one group received corn flakes and water; a second group was given the cardboard box that the corn flakes came in and water; the control group received rat chow and water. The rats in the control group remained in good health throughout the experiment. The rats eating the box became lethargic and eventually died of malnutrition. But the rats receiving the corn flakes and water died before the rats that were eating the box! (The last corn flake rat died the day the first box rat died.) But before death, the corn flake rats developed schizophrenic behavior, threw fits, bit each other and

finally went into convulsions. The startling conclusion of this study is that there was more nourishment in the box than there was in the corn flakes.

This experiment was actually designed as a joke, but the results were far from funny. The results were never published and similar studies have not been conducted.

Most of America eats this kind of cereal. In fact, the USDA is gloating over the fact that children today get the vast majority of their important nutrients from the nutrients added to these boxed cereals.

Cereals sold in the health food stores are made by the same method. It may come as a shock to you, but these whole grain extruded cereals are probably more dangerous than those sold in the supermarket, because they are higher in protein and it is the proteins in these cereals that are so denatured by this type of processing.

There are no published studies on the effects of these extruded grains on animals or humans, but I did find one study in a literature search that described the microscopic effects of extrusion on the proteins. "Zeins," which comprise the majority of proteins in corn, are located in spherical organelles called protein bodies. During extrusion, these protein bodies are completely disrupted and deformed. The extrusion process breaks down the organelles, disperses the proteins and the proteins become toxic. When they are disrupted in this way, you have absolute chaos in your food, and it can result in a disruption of the nervous system.