

## Corn Puff Extruder Microwave Dryer Machine



Corn extrusion is a process of starch gelatinization under the combined effects of moisture, heat, mechanical shearing, friction, kneading and pressure difference. When corn meal is mixed with steam and water, starch granules begin to absorb water and expand. When the expansion chamber is used, the rapidly rising temperature and the rubbing of spiral blades accelerate the absorption of water, the crystal structure begins to disintegrate, the hydrogen bond breaks, the expanded starch granules begin to crack, and become a viscous melt. Because of the sudden drop of pressure at the outlet of the expander, the steam (water) begins to disintegrate. The instantaneous loss causes a large number of expanded starch granules to disintegrate and starch gelatinization. High temperature, high pressure and mechanical shearing make starch gelatinized more thoroughly than other processing methods. Generally, the gelatinization degree can reach 80%-100%. Compared with conventional cooking process, it can break plant cell wall, shorten starch chains and improve digestibility more effectively. There are many factors affecting maize extrusion, such as moisture, temperature, pressure difference and mechanical shear force in the cavity. These are also several factors that can be controlled in the current extrusion production.



At present, corn extrusion can be divided into dry and wet methods. Many users think that adding water is wet method, not adding water is dry method, and others think that adding steam or water into the extrusion chamber is wet extrusion. In fact, this is a misunderstanding. The so-called wet method refers to the steam pre-conditioning before expansion; dry method is no steam pre-conditioning, direct expansion, even water, is also dry method. Generally, wet production is more efficient than dry production, but steam boilers are needed and investment is larger than dry production. Whether the extruded corn is produced by dry or wet method depends on the specific conditions of users and product requirements.

The effect of [corn puff extruder microwave dryer machine](#):



The digestive organs of young animals, especially early weaned piglets, have not yet matured and the activity of digestive enzymes is very low. Studies have shown that there is insufficient secretion of amylase in piglets within 42 days after birth, and the growth of digestive enzymes is reversed due to weaning stress. Diarrhea is often caused by starch indigestion, which affects production performance. When corn is expanded, starch gelatinization can irreversibly destroy the crystal structure of starch, rapidly absorb water and expand in the small intestine of animals, which greatly increases the area and penetration capacity of amylase, enhances the hydrolysis speed and digestion degree of starch, and at the same time, the sensitivity of gelatinized starch to  $\alpha$ -amylase is greatly increased, which makes its role more rapid. In addition, gelatinized starch can also stimulate the production of lactic acid in the stomach of young animals, prevent the production of pathogenic microorganisms, thereby alleviating and eliminating diarrhea in piglets.

Application of corn puff extruder [microwave dryer machine](#) in Whole-fat Soybean Extrusion

Soybean is rich in nutrients, but because raw soybean contains many anti-nutrient factors, such as trypsin inhibitor, urea acid, hemagglutinin, which are not conducive to animal digestion and absorption, it can not be directly used to feed animals. The so-called extruded full-fat soybean is a product obtained by extruding soybean.