Why Is Corn Puffed?

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Animal feed: suckling pig feed. The suckling pig feed contains 60% or more corn ingredients. It is ideal to expand all corn ingredients. But it will lead to a sharp increase in production costs. The conventional method is to medium-expand half of the corn ingredients. Then it is granulated with other ingredients (soybean meal should also be puffed). The gelatinization degree of starch in the formula is generally 60-80%. Of course, all corn ingredients can be expanded at a low degree to achieve the same effect, and the efficiency of the expanded production process will be higher.

The raw corn is crushed, mixed with a certain proportion of water, and then subjected to a puffing process to obtain a feed source material with a higher utilization rate.

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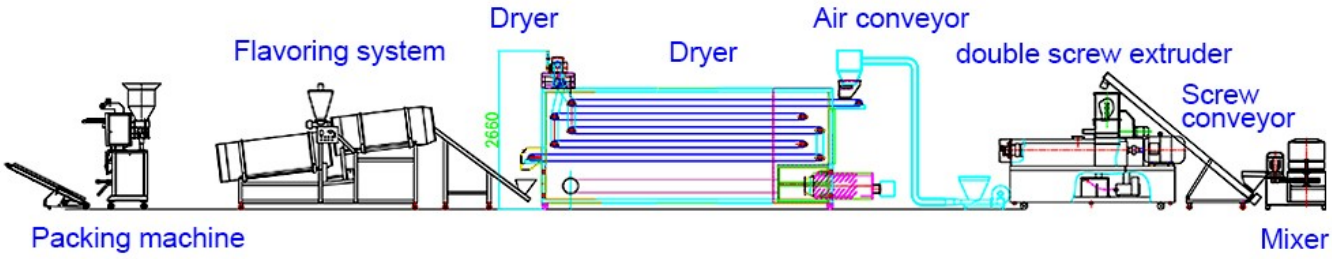
The digestive tract of young animals has not yet matured, and the digestive enzyme activity is

very low, and the growth of digestive enzyme activity is reversed due to weaning stress. Diarrhea is often caused by poor starch digestion, which affects production performance.



After the corn is expanded, the starch gelatinizes, so that a considerable proportion of the acid-resistant and enzyme-resistant crystal structure in the starch grains is irreversibly destroyed. It quickly absorbs water and swells in the small intestine of animals, greatly increasing the area of action and penetrating ability of amylase. Both the hydrolysis speed and digestibility of starch are improved.

In addition, the power level of the expansion R&D production process will be higher. In order to ensure the digestion and absorption rate of starch, the traditional method of feeding special animals is steaming. With low power, there is no way to achieve large-scale breeding. When using expanded corn, only soak for 30 minutes before feeding. It saves a lot of manpower and material resources and improves the power. In addition, the gelatinization degree of puffed corn is required to be above 90%, and the product requires fine powder, which is slightly higher than that of puffed corn for suckling pigs. Corn flour can be used as a carrier for compound phospholipid powder after being highly puffed (our company has a dedicated article), or corn is peeled, degerminated and then highly puffed to develop ?-starch with different degrees.

Generally, the degree of puffing is characterized by the bulk density of the material. Therefore, puffed corn has two requirements: maturity and puffing degree, which are measured by starch gelatinization degree and material bulk density, respectively. The starch glucosidase method is used to determine the gelatinization degree of starch, and the bulk density of the material is determined with a bulk density meter. Maturity and puffiness are interrelated. A high degree of maturation does not necessarily lead to a high degree of expansion, but a high degree of expansion leads to a high degree of maturation. Compared with most feed companies, there is no condition for measuring the gelatinization degree, but the bulk density is easy to measure, and the mature degree reflected by the bulk density is more accurate. Therefore, the suckling pig feed contains a large proportion or more of corn ingredients. It is ideal to expand all the corn ingredients, but this will lead to a rapid and general increase in production costs. The conventional method is to moderately puff three-fifths of the corn component, and then pellet it with other components (the soybean meal is also not puffed). The gelatinization degree of starch in the formula is generally 60-80%.

Significantly improve the growth performance of weaned piglets. The addition of expanded corn can increase the daily gain and daily feed intake of the first weaned piglets by 8% and 6.93%, but the effect is not obvious after 40 days of age. Compared with the normal corn control group, the average daily weight gain of each group from 0 to 14 days was significantly increased (0%, 40%, and more than half). The average daily weight gain of a large part of the extruded corn group was higher between 0-14 days and 0-28 days; compared with the control group, the feed-to-weight ratio of each extruded corn group decreased significantly from 0~0-14 days, but not the same The difference between the addition amount is not significant. All in all, when the added amount of expanded corn is a large part, the growth performance of piglets is good. The high temperature, high pressure and high shear force of the puffed product make the starch granules swell and gelatinize, the starch molecular chain is opened, the surface area of the chylo granules is increased, and the digestibility is greatly improved. At the same time, the peptide chains of the protein split into peptides and amino acids, and the absorption rate of the protein is greatly improved. Corn also has a special flavor.