

Effect of particle size of feed processing line on quality of growing pigs



Effect of particle size of [feed processing line](#) on quality of growing pigs *The processing quality of pellet feed and the utilization efficiency of animal feed, but the energy consumption of grinding increases significantly with the decrease of particle size. Proper grinding size can not only improve the processing quality and feed utilization rate of pellet feed, but also avoid excessive grinding and reduce energy consumption. [Microwave drying machinery and equipment](#) can improve production efficiency .

At present, there are many studies on the particle size of * * weaning piglets at home and abroad. There is little research on the grain size of the growing pigs (30 * 70kg). This experiment studied the effect of particle size on the processing quality and growth performance of the growing pig pellets, and explored the suitable crushing granularity of the pellet feed for growing pigs. * to provide data support for the selection of grain size for growing pigs.

Sampling of feed samples

Each group was sampled three times at the outlet of crusher, granulator and cooler, each sampling interval was 5 minutes and each sampling interval was not less than 2 kg. Among them, no less than 5 kg was sampled after cooler, and 1 kg was retained by quartering method, stored in self-sealed bags, in refrigerator at 4 C and in crusher. Samples were obtained to determine the geometric average particle size. Starch gelatinization, particle hardness and crude protein digestibility in vitro were measured at the granulator and cooler.

Testing indexes and methods Each group was sampled three times at each sampling point. The logarithmic geometric mean particle size of the samples was measured by the fourteen-layer screening method in the National Standard 1986 "Feed Mill Test Method".

Starch gelatinization degree

Each group was sampled three times at each sampling point. The gelatinization degree of the samples was determined by a simple enzymatic method commonly used by the American feed industry to determine the gelatinization degree of starch.

Particle hardness

Each group was sampled three times at each sampling point, and the particle hardness of the sample was determined by referring to the "Method for Determining the Hardness of Pellet Feed in Feed Inspectors".

Protein digestibility in vitro

Determination of crude protein content by Kjeldahl method

The digestibility of crude protein in vitro was determined by Wang Weiguo et al

mm group and 3.0 mm group ($P < 0.05$). Particle hardness decreases with the increase of sieve aperture of grinder. Particle hardness of 1.5mm group is significantly higher than that of other groups (P