

What Is The Maximum Amount Of Fresh Meat That Can Be Added To Pet Food?

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1. Market status

In the modern pet food market where consumers are increasingly demanding the quality and diversification of pet food, Fresh meat slurry added The production of puffed pet staple food has gradually been hailed by the market. But for many producers, the addition of fresh meat pulp will bring many uncontrollable factors to the pellets of the extruded product. For example, the addition of meat slurry leads to problems such as non-forming, agglomeration, and drying of the puffed product particles. And such problems usually directly restrict the smooth progress of production.



2. Analysis of the restrictive factors of adding fresh meat pulp

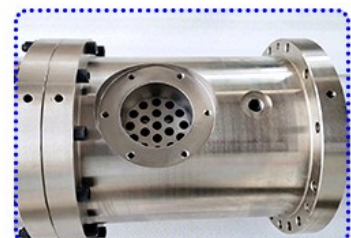
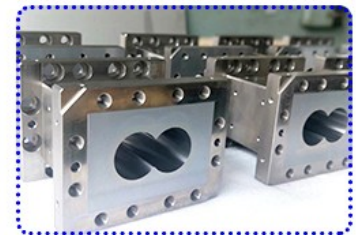
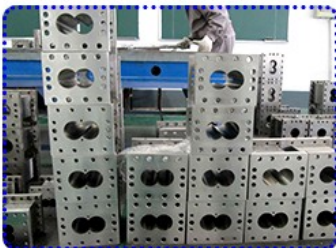
(1) Excessive water content in the meat slurry leads to agglomeration and deformation of the

material.

As we all know, there is nearly 75% water content in meat. When using extruder to process materials, There are restrictive requirements for moisture content , If the moisture content exceeds a certain value, the material will not form and agglomerate. Through previous experimental experience, the general single-screw extruder can process materials with the maximum added water content of 16.7%, and the twin-screw extruder is 20%. The three-screw extruder can allow higher water addition.

For example: a puffing equipment with a dry material feed rate of 1000kg/h, the ratio of adding water to steam is 8%, the adding ratio of meat slurry is 20% (to the amount of dry material), and the water content in the meat is 75%. It is concluded that the added water content in the expansion process at this time is: $20\% \times 75\% + 8\% = 23\%$.

If a twin-screw extruder is used for production, the amount of added water at this time has exceeded the maximum amount of added water that the equipment itself can withstand, which will inevitably lead to a large amount of agglomeration and deformation of the material, which restricts the production. Therefore, the amount of fresh meat paste cannot exceed 20% when using a twin-screw extruder. but The three-screw extruder can allow a higher amount of fresh meat.



(2) The energy configuration of the input expansion system needs to be changed.

In the production of ordinary pet food, the tempering temperature must reach at least 95° before it can enter the extruder for processing, so as to ensure that the input of the material in the conditioner through STE (special heat input from the conditioner to the material) is sufficient Tempered.

However, when adding fresh meat slurry, if a large amount of steam is added to the conditioner, it means that a large amount of water is added, which causes deformation and agglomeration of the material. Faced with this problem, it is necessary to change the energy input distribution of the expansion equipment.

The water and steam in the conditioner should be added as little as possible to reduce the input of STE. Instead, adjust the screw of the extruder to a configuration with stronger shearing force to increase the input of SME (special mechanical energy generated by the shear of the extruder screw) . In this way, the deficiency of STE is compensated by the increase of SME, and SME enhancement Because it is Through mechanical screw adjustment, it does not add any water to the production process, and ultimately can ensure the successful production of materials. The three-screw extruder has two more meshing areas than the double-screw, and the internal heat is large, which can provide more SME input.



(3) Processing of fresh meat

The handling of raw materials is equally important. Some manufacturers usually purchase frozen meat for processing, and then add it to the puffing equipment. In this process, a large

amount of water is often added to the meat to ensure that the meat has better fluidity. As discussed above, adding a large amount of water to the meat will undoubtedly increase the amount of added water in the puffing system again, which has a negative effect on the puffing production. and so, During the process from frozen meat processing to meat puree, no water is allowed to be added, and the meat source is processed completely through the process of mechanical shearing . This is to ensure that the puffing production can withstand a high proportion of meat additions as much as possible.