

Fruit and Vegetable Microwave Drying Machine



Microwave drying is an emerging drying technology. When the [microwave drying equipment](#) is drying, the microwave energy directly acts on the medium molecules to convert into heat energy, and the microwave itself has strong penetrability. The dried object can be dried both inside and outside, so when using microwave drying, there is no external ripening. In the case of raw, heat conduction is not required, so the heating rate is very fast, and regardless of the shape of the object to be dried, the microwave is highly transparent, and the temperature inside and outside of the object to be dried is almost uniform, and the drying is uniform, which greatly improves. Dry quality and dewatering effect.

First, the working principle of [fruit and vegetable microwave drying machine](#):



The microwave itself is not hot, and the electromagnetic energy absorbed by the object is converted into heat energy, so that the dry matter itself becomes a heating element. Heat conduction, convection heat transfer, and infrared radiation drying are three conventional drying methods. Conduction is the most used in our daily life. We often use heat conduction in our daily life. The heat is used to contact the surface of the dry object with a heat-absorbing metal as a medium to form heat conduction. Convection is the conduction between fluids. In the life, boiling water with a kettle is the realization of convection. When the water is opened, the convection of hot water and cold water can be seen. Radiation and heat radiation are also a way of heat transfer. Thermal radiation must have a higher temperature heat source to transmit heat between the object and the object. For example, when we stand beside the heater, we can feel the heat. Microwave drying is to make the dried object self-heating by electromagnetic, so that compared with the traditional drying method, not only the drying time is short, but also the external factors are not needed to dry the object, while the microwave drying does not need to be preheated, and the microwave drying speed itself Quickly, this aspect is directly omitted in the preheating process, which not only ensures the taste of the food, but also reduces the loss of nutrients in the food itself, which is more suitable for the processing of some high temperature resistant foods.

Second, the application of microwave drying technology

1. Application of microwave drying in fruits and vegetables



Due to the short harvesting period and the difficulty in preserving the litchi, the requirements for the sale of litchi are also high and need to be dried. Moreover, the treatment of litchi has more requirements in various aspects. Microwave drying can meet the needs of various aspects to a greater extent. Microwave drying can achieve the evaporation of litchi water, which is more rapid, efficient and more flexible in temperature control. The sales demand of litchi ensures that the moisture of litchi will not be excessively lost, and the situation of litchi splitting is greatly reduced. It also ensures the original color and flavor of the litchi and the nutrients. Similar fruits include apples, mangoes, bananas, etc. in the microwave. The evaporation temperature of the material in the vacuum equipment is greatly reduced, and the physical properties of the material are well preserved at low temperatures, thereby maintaining a good sensory quality. At the same time, low-temperature drying reduces the nutrient loss of fruit and vegetable chips and improves the puffing rate of fruit and vegetable chips.



For lychee and longan, the fruit that is difficult to preserve has mastered the specific drying method. Because microwave can effectively control water molecules, and the epidermis is not damaged, it will not cause excessive expansion or contraction of fruits and vegetables, so microwave drying will hardly occur. It has an impact on the shape of fruits and vegetables. Therefore, microwave drying has great advantages in preservation of fruits and vegetables. Microwave drying technology in the field of fruit and vegetable drying has been widely used.

2. Application of microwave drying in fruit

The traditional method of drying the fruit can be used for a long period of time, and the microwave drying technology can solve the characteristic of drying the fruit, speeding up the drying time of the fruit, and the taste of the fruit after the microwave treatment is also greatly improved. The main purpose of drying the preserved fruit is to extend its shelf life. After drying, the skin of the preserved fruit is tightly structured and does not cause loss of nutrients. The traditional drying method leads to the skin of the preserved fruit being too hard, affecting the taste of people, and the traditional drying method. The fruit is heated unevenly during the drying process, and the surface layer is heated first, so that when the final drying is completed, the water content inside and outside the fruit is not uniform, and the microwave drying technology causes the inside and outside of the fruit to be heated at the same time, and the internal material of the fruit material is more water, forming water vapor. Diffusion from the inside to the outside, acting on the surface of the raw material of the fruit, promoting the cooling of the surface layer of the fruit material, so there is no such problem that the skin is too hard, and the overall taste of the fruit can not be affected, and the fruit can be dried at a constant temperature. Moreover, the microwave drying technology is more flexible for temperature control and is more conducive to the drying of the fruit. At the same time, while the microwave is dry on the fruit, it also has the effect of sterilization, which can ensure the quality of the fruit to the greatest extent.