Application of microwave technology in traditional Chinese medicine (2)

Third, the application of microwave technology in the processing of traditional Chinese medicine

Like traditional Chinese medicine extraction, Chinese medicine processing is also an important part of the entire Chinese medicine pharmaceutical process, and in this ring, it is actually necessary to continue the results of the previous link.

The use of microwave drying machinery technology in the processing of traditional Chinese medicine not only reduces the processing time, but also reduces the pollution degree to the environment. It is also easy to control, and has the advantages of sterilization and cleaning and sanitation, so it is used in the processing of traditional Chinese medicine. The use of a microwave oven to process bitter almonds not only inactivates the bitter almond enzyme, but also does not lose amygdalin.

Related experiments have proved that microwave technology is used in the processing of bitter almonds, and the intensity of sterilization is obtained. The obtained bitter almonds are crisp and the amount of glycosides is the same as that of raw almonds, and has good glycosides. Using tantalum powder as an auxiliary material, the effect of using gelatin to make gelatin is also very good. Therefore, microwave technology provides a new method for Chinese herbal medicines, and its effective value is high, which is worthy of deep research and development.

The researchers tested the components of tannins and ether-soluble alkaloids in different betel nut crafts. It was found that any kind of processing technology would have a certain impact on the chemical composition of betel nut, and the microwave processing technology could effectively reduce the betel nut. The toxicity of the product, the test temperature is not high, the operation is simple and convenient, the loss of the medicinal material is small, in addition, it has the advantages of no pollution, high uniformity of the processing of the medicinal material, and complete sheet shape, so it

is considered to be the best method for processing betel nut crafts.

Fourth, the application of microwave dryer technology in drying and sterilization

Due to the high heat and high penetrability of microwaves, microwaves can effectively dry and sterilize, because in the case of traditional Chinese medicine, it actually has a lot of bacteria after some pharmaceutical processes. .

Microwave technology is becoming more and more mature, so it has also been effectively applied in the drying and sterilization of Chinese herbal medicines. The sterilization mechanism of microwave is: Due to the effect of the intensity microwave field, the bacteria and insects in the material will relax due to molecular polarization, and the absorption of microwave will make the temperature higher. After the properties of the protein change, its swelling, viscosity, solubility and stability will change significantly and lose its biological activity.

In addition, the non-thermal effects of microwaves also have a sterilizing effect that is not found in other conventional physical sterilization methods. Some experts conducted an experiment on oven drying and microwave drying of Liuwei Dihuang Pills. It was found that the microwave drying method significantly reduced the content of paeonol, while the sterilization effect was significantly improved.

Some people also applied the microwave drying and sterilization process in the production of pills. The five finished products of Shuimi Pills, Water Pellets and Concentrated Water Pills were respectively tested by microwave drying process. The results showed that the finished products were characterized by water, shape and dissolution time limit. All reached the relevant standards, and the bacterial rate was significantly reduced.

In addition, when drying ginseng, compared with microwave drying and hot air drying, the drying quality is significantly higher than that of hot air drying, and the total saponin content loss in the active ingredient is very small, and the drying time is much less than hot air drying. Microwave drying vacuum-frozen ginseng can evenly raise the temperature in the ginseng table, thus effectively eliminating the wrinkle atrophy caused by the conventional drying method.

Conclusion

After the above analysis and introduction, we have a certain understanding of the working principle of microwave technology, its practical application in the process of traditional Chinese medicine including Chinese medicine extraction, Chinese medicine processing and drying sterilization. We can deeply understand that microwave technology with multiple performance advantages is practical in the process of traditional Chinese medicine pharmaceuticals. Under such practical conditions, the specific amount of maintenance and implementation is actually very To a large extent

depends on the control of its entire application process, we should pay enough attention to this point.

Of course, in terms of microwave technology, it actually has certain limitations in the actual application of traditional Chinese medicine, but this limitation should not be an obstacle to its development.