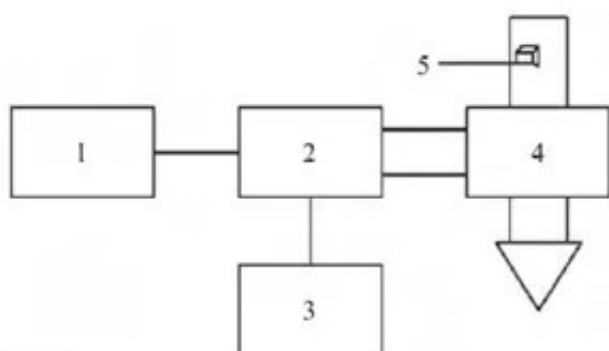


Research and Development Trend of Drying Equipment Technology for Chinese Medicinal Materials

Abstract: [microwave drying equipment](#), vacuum freeze drying technology, low temperature adsorption drying technology, heat pump drying technology and spray drying technology are introduced. The combined drying technology can realize the high efficiency and energy saving of the drying process of the medicinal materials, which is the trend of drying area.

Key words: drying equipment; [microwave drying of traditional Chinese medicine](#); vacuum drying



Drying is an indispensable link in the processing and production of Chinese medicinal materials. The drying process directly affects the quality of Chinese medicinal products. In the drying process, time and temperature are important parameters. The magnitude of their magnitude is closely related to the loss of effective components and the degree of inferiority. Therefore, the selection of drying equipment types and the setting of control conditions are particularly important for the production and processing of Chinese medicinal materials.

The drying process of Chinese medicinal materials can be divided into traditional drying method and modern drying method according to the development of technology. The traditional drying method can be divided into shade drying, sun drying and drying in drying room without special equipment. With the development of science and technology, the introduction of new technology into drying equipment not only accelerates the drying speed, but also maintains the medicinal properties of four flavors and five flavors required by traditional drying.

Drug drying must consider maintaining the original medicinal ingredients. In actual production, appropriate drying methods and equipment should be selected according to the nature of the medicinal materials. Whether the application of various drying technologies will affect the

chemical composition, pharmacological effect and clinical efficacy of traditional Chinese medicine remains to be further studied.

Combination drying is a trend in drying field to achieve high efficiency and energy saving in the drying process of medicinal materials. In production, the characteristics of drying products should be systematically analyzed, and the effects of temperature, humidity and pressure on the properties and characteristics of medicinal materials should be mastered. According to the drying dynamic characteristic curve of materials, the drying process should be improved at different drying stages. Hot air-microwave drying has the advantages of high drying speed, high efficiency, complementary advantages, low energy consumption and high product quality. Solar energy-hot air-vacuum drying can utilize natural energy sources, fast and hygienic.

Energy saving is one aspect of drying technology and equipment. We should attach importance to the study of basic drying theory, introduce scientific research achievements in other fields more quickly (such as heat pipe technology, supercritical fluid technology, heat pump technology, computer intelligence technology, pulse combustion technology), and accelerate the utilization of energy saving technology.

There are many kinds of Chinese medicinal herbs, including 11146 kinds of medicinal plants, 1581 kinds of medicinal animals and 80 kinds of medicinal minerals. In the control system, the parameters of medicinal herbs with different properties should be set to meet the drying needs of different kinds of medicinal herbs, to maximize the maintenance of effective ingredients, to realize the online display of parameters of Chinese medicinal herbs, and to analyze and control the data in real time. Superior intelligent control system, remote monitoring and other traditional Chinese medicine drying equipment are the future development direction.