

Application of microwave heating in tea processing

[Microwave heating equipment](#) is suitable for green tea processing. A [microwave drying equipment](#) for green tea processing is developed. The microwave output power of the equipment is 6kw, the conveying bandwidth is 42mm, and the speed is continuously variable. In the processing of [green tea drying equipment](#), the time of microwave sterilization is about 2 minutes, the time of microwave sectional drying is about 5 minutes. The sensory quality of green tea by microwave sterilization and microwave drying is better than that by conventional methods, and the content of amino acid, caffeine and water extract is also higher than that of conventional tea.

Since the discovery of microwave thermal effect in 1945, the application of microwave heating has been increasingly widespread. Since 70s, people have been trying to microwave heating for tea processing. Because of the high moisture content in the tea, the water molecules are polarized in the microwave electric field, and the polar orientation is changed with the frequency of the electromagnetic field, so that the molecules vibrate at high speed and produce friction heat, so that the whole tea is heated in the microwave. With the characteristics of high heating speed and uniform heating by microwave, the temperature of processed tea can be raised rapidly to the critical point temperature of inactivating enzyme. At low moisture content, it accelerates the transfer of structural water in tea. Therefore, microwave heating technology is suitable for green tea blanching process and tea late drying operation. In foreign countries such as Japan and South Korea, microwave is used for steaming heat, and the content of amino acid and vitamin R in green tea is increased. After microwave drying, the drying time of tea leaves is short, the temperature is low, and the quality of tea is improved. The author's experiment in PQQE year also proves that microwave as green tea takes a short time to kill green tea and eliminates the phenomenon of red stem and red leaf, and it can improve the storage tolerance of black tea when used in the later treatment of black tea. In order to further explore the application of microwave heating technology in tea processing, the project "Research on Microwave Tea Processing Equipment" is applied to try to apply microwave heating technology in famous tea processing. In recent years, China's famous tea has developed rapidly. The output of famous tea accounts for about 10% of the total output of tea, and the output value accounts for 20% of the total output value of tea. The production efficiency of famous and excellent tea is higher, and the electric heating method is used in the famous and excellent tea processing machinery with about 10%. This paper mainly discusses the research results of microwave heating used in tea processing.

The high-grade fresh leaf materials in spring and autumn were collected from Longguan Tea Garden of Tea Research Institute of Chinese Academy of Agricultural Sciences. The varieties were Longjing population.

Mao Feng tea processing technology: fresh leaves, green, killing, spreading cold, rolling, Mao Huo, spreading, sufficient fire.

Flat tea processing technology: fresh leaves, green, green, cold, green pot, spread, Hui pan.

