

Development of Quick-ripening Mung Bean by Microwave Drying Technology

Abstract: To determine the processing technology and parameters of quick-ripening mung bean by [microwave drying equipment](#). By studying the conditions of soaking, steaming and drying of mung beans, the optimum technological parameters of ripening and drying of quick-ripening mung beans were determined.

The optimum technological parameters of quick-ripening mung bean are as follows: soaking temperature 50 C, soaking time 3 h, steaming time 20 min, microwave drying power P50 W, microwave drying time 13 min. The quick-ripening mung bean processed under this process has good rehydration and sensory state.

Key words: quick ripening; [mung bean microwave drying](#); rehydration



Mung beans are the main cultivated beans of Asiatic cowpea subgenus. China has a long history of cultivation as a country of origin. Mung bean is rich in protein, carbohydrate, calcium, phosphorus, iron, thiamine, riboflavin, carotene and other nutrients.

Medical research shows that mung bean can dispel heat and thirst, help excrete toxins and promote normal metabolism of the body. However, due to its high hardness, thick seed coat and easy regeneration of mung bean starch, it is inconvenient for people to eat.

It has been proved that starch gelatinization occurs when heated, which is a process of swelling and hydration of starch granules in water at an appropriate temperature. The essence is that the water molecules enter into the microcrystalline bundles of starch granules and break up the association of starch molecules with each other.

Alpha starch must be dried quickly in order to prevent beta starch from becoming beta starch, remove moisture from alpha starch and prevent starch from regeneration. In this study, mung bean was used as raw material to immobilize alpha by ripening and microwave drying technology to achieve quick ripening.

In the process of instant ripening mungbean processing, the quality and rehydration of the product are mainly affected by the soaking, steaming and drying process of mungbean. During the soaking process, when the soaking temperature was 50 C and the soaking time was 3 h,

the swelling rate and rehydration ratio of mung bean were the best.

In the process of steaming, the best maturity is 20 minutes steaming with sufficient hot steam, the skin of steamed mung bean cracks slightly, the color changes little, and the beans are more complete. In the drying process, the advanced microwave drying technology is used to study the microwave drying power and drying time, and the moisture content of the final product obtained after microwave power P50 W is 13 minutes. Low, short drying time, good rehydration, good sensory indicators.

