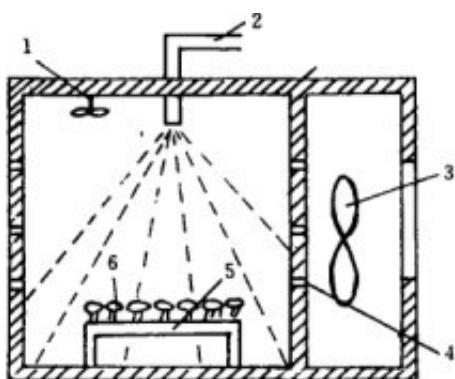


# Effect of drying method on total organic acid content of hawthorn flavonoids

ABSTRACT: The effects of four drying methods on total flavonoids, total organic acids, vitamin C and color of Hawthorn were studied, and the suitable drying methods of Hawthorn were investigated.



The content of total flavonoids in hawthorn powder dried by four drying methods was determined by colorimetry with Hyperoside as standard material; the content of total organic acids in hawthorn powder dried by four drying methods was determined by acid-base titration with phenolphthalein as indicator; the content of vitamin C in hawthorn powder dried by four drying methods was determined by 2,6-dichloroindophenol titration; and the color data of hawthorn powder dried by four drying methods were determined by color difference meter. This is the case.

The results showed that the contents of total organic acids, total flavonoids and vitamin C in Hawthorn of four [microwave drying equipments](#) were significantly different. The contents of total organic acid and vitamin C in freeze-dried samples were the highest, 133.25 mg/g and 0.3224 mg/g respectively, while those in natural drying samples were the lowest, 94.55 mg/g and 0.1631 mg/g respectively.

The content of total flavones in microwave-dried samples was the highest, while that in natural-dried samples was the lowest, 42.26 mg/g and 32.25 mg/g, respectively. In terms of color, vacuum freeze-drying Hawthorn has the best color. Vacuum freeze-drying can reduce the loss of total flavonoids to a certain extent and show the best color on the basis of retaining vitamin C to the greatest extent.

Key words: [Hawthorn microwave drying](#); drying method; total flavonoids; total organic acids; vitamin C; color



Hawthorn is the dried ripe fruit of the Rosaceae plant Shanlihong or Hawthorn. It has the functions of digestion, stomach-strengthening, qi-dispersing and stasis-removing, turbidity and lipid-lowering. It can be used to treat carnivorous stagnation syndrome, diarrhea abdominal pain, hernia pain, stasis abdominal pain, chest pain, lochia, dysmenorrhea, hematemesis and hematochezia. Studies have shown that Hawthorn mainly contains flavonoids, oligosaccharides, organic acids, triterpenoids, steroids and organic amines, and its organic acids and flavonoids are composed of flavonoids. It has strong pharmacological effects in promoting digestion and protecting myocardial ischemia.

Origin processing is an important link in the production and quality formation of medicinal materials, and drying is one of the key links in origin processing. Appropriate drying methods can effectively promote the maximum retention of functional substances and nutrients, and the separation of medicinal and non-medicinal parts, and can realize the mutual transformation of various chemical components, and ultimately produce high-quality medicinal materials with effectiveness and safety.

At present, the research on hawthorn mainly focuses on chemical composition, pharmacological action and extraction technology, while the research on drying method has not been reported. In this experiment, Hawthorn samples were treated by natural drying, oven drying, vacuum freeze drying and microwave drying. The total flavonoids, total organic acids, vitamin C and color index were studied, and the effects of drying methods on hawthorn quality were discussed. In order to provide data support for hawthorn drying method research.