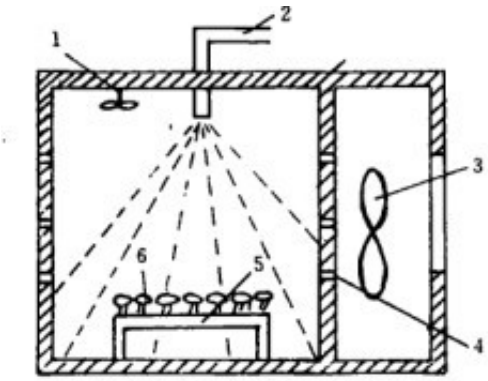
Drying Conditions of Cordyceps militaris and Their Effects on Active Components



ABSTRACT: The drying and microwave drying conditions of Cordyceps militaris and their effects on the main active ingredients were studied. The results showed that the drying rate increased with the increase of drying temperature, and there were significant differences at all test temperatures. More than 75% of the moisture was lost in the first two hours. With the increase of microwave drying power, the drying rate also increased, and reached a very significant difference under each test microwave drying power. More than 75% of the moisture was lost in the first two hours. Lost in the first 6 minutes.

For the content of active ingredients, 900W is the best in microwave drying equipment, which is significantly higher than other power. Cordycepin content is the highest at 60 C, while adenosine content is the highest at 70. In production, different drying conditions can be selected according to needs.

Key words: microwave drying of silkworm caterpillar fungus; drying; drying rate; active ingredients

Silkworm caterpillar fungus, which has similar active ingredients with Cordyceps sinensis, is a very valuable potential alternative to Cordyceps sinensis, and because of its ability to cultivate artificially, has formed a huge industry in China. The content of cordycepin and adenosine is an important index to evaluate the quality of Cordyceps militaris products. In addition, drying is an important link in the production of Cordyceps militaris, which directly affects the quality of products. It is of great significance to study the drying conditions of silkworm caterpillar fungus and their effects on the content of active ingredients for the further development of silkworm caterpillar fungus.

The drying conditions of Cordyceps militaris prepared by silkworm pupae and its effects on the content of active ingredients were studied, but no studies on the drying conditions of Cordyceps militaris prepared by silkworm larvae and the effects on the content of cordycepin and adenosine were reported. Therefore, microwave drying and drying were used to study the drying conditions of silkworm caterpillar fungus, and the effects of drying conditions on the content of cordycepin and adenosine in silkworm caterpillar fungus were determined by HPLC, in order to provide theoretical basis for the drying process of silkworm caterpillar fungus.

The content of cordycepin in the silkworm Cordyceps militaris was the highest at 60 C. The content of cordycepin decreased gradually with the increase of drying temperature, which was consistent with the change rule of cordycepin content in the silkworm chrysalis cultivated by He Lei at different drying temperatures. The content of cordycepin and adenosine in microwave drying is generally higher than that in drying, which may be disadvantageous to the preservation of cordycepin and adenosine.

Different drying methods and conditions have great influence on the active ingredients of Cordyceps sinensis. According to the results of this study, 900W microwave drying or 60-70 ~C drying should be adopted to obtain higher content of cordycepin. Different treatment methods should be selected for different purposes and the active ingredients needed should be retained to the maximum extent.