

Development Status of Grain Drying Mechanization Technology

Abstract: This paper mainly introduces the mechanization technology and research status of grain drying, such as hot air drying, low temperature vacuum drying, warehouse drying, infrared radiation drying, [microwave drying equipment](#), solar energy drying and combined drying, in order to provide a reference for the healthy and rapid development of grain drying mechanization technology and equipment.

Key words: [grain microwave drying](#); hot air drying; combined drying; mechanized technology



China is a big country in grain production, storage and consumption. Food security is a major strategic issue related to the national economy and people's livelihood. According to the announcement of the National Bureau of Statistics on the grain output in 2016, China's total grain output in 2016 was 61,623.9 million tons, of which 56,516.5 million tons were cereals. However, the degree of mechanized grain drying is relatively low in China. The level of mechanized grain drying is less than 10%, which is the "short board" of the whole mechanization of agriculture.

Grain drying is related to the safe storage of grain. The moisture content of grain just harvested is generally high, and high moisture content can easily lead to the heat and mildew of grain. It is necessary to reduce the moisture content of grain to below the safe moisture content through drying treatment before storage.

Using mechanized technology and equipment to dry grain can complete drying operation in a relatively short time, greatly improve production efficiency, save land and labor costs, and is more suitable for large-scale intensive operation, not affected by natural environment such as site, weather and so on, which is conducive to disaster reduction and grain preservation; it can also effectively avoid mixing with soil, sand, debris and vehicle tail gas and other secondary pollution. Drying can keep the quality of grain better.

With the vigorous promotion of land transfer, the rapid development of agricultural machinery such as seeders and harvesters, the effective promotion of the whole mechanization of agricultural production and the implementation of the national financial subsidy policy, the grain production will further develop towards intensive and large-scale, and the demand for the technical equipment of grain drying mechanization will become more and more urgent.

This paper mainly introduces the mechanization technology and research status of grain drying, such as hot air drying, low temperature vacuum drying, warehouse drying, infrared radiation drying, microwave drying, solar drying and combined drying, in order to provide a reference for the rapid and healthy development of grain drying mechanization technology and equipment.