# The drying of Hermetia illucens

Hermetia illucens is a kind of saprophytic water fly insect that can feed on the excrement of livestock and domestic garbage and produce high-value animal protein feed. Due to its rapid reproduction, large biomass, extensive feeding habits, high absorption and conversion rate, easy management, low feeding costs, and excellent palatability of animals, it can be utilized as a resource. Its larva is called "phoenix insect," which has become a resource insect with the same name as a fly maggot, yellow mealworm, barley worm and so on, and has been promoted worldwide. Native to the Americas, it is now widely distributed throughout the world (between 40 degrees north and south latitude). It has been introduced into China in recent years and is now widely distributed in Guizhou, Guangxi, Guangdong, Shanghai, Yunnan, Taiwan, Hunan, Hubei, and other places. It is commonly used in the disposal of chicken manure, pig manure, and kitchen waste. Hermetia illucens not only deal with feces but also are good at breaking down harmful microorganisms.

Jiangsu Yike group is mainly engaged in chicken and duck breeding. To achieve ecological reproduction and ecological development, it introduced hermetia illucens breeding technology to treat animal excrement by innocuous treatment of poultry excrement.

10000 chickens produce one ton of feces every day, one million eggs are put in, and one million hermetia illucens eggs can consume one ton of wastes in a week or so to get about 100 kg of adult worms. Hermetia illucens must be processed before turning black. In general, three kilos of live insects produce one kilogram of dry insects, and the microwave drying efficiency is about 0.25 kilograms per kilowatt-hour, about 0.7 kilograms of live insects. In the experiment, 12 kilowatts of microwave produces two-kilogram per hour, about 7 kilograms of live insects.

The feeding end of the hermetia illucens microwave drying equipment needs to be equipped with PVC baffles to prevent leakage caused by live worm creep. The baffle must pass through the suppressor to the 1# box.

Feed end design?

At present, the hermetia illucens project is still in the experimental stage, with a maximum of 200 kg per day. The customer first customizes a 12 kW equipment, which is mainly limited by the immature breeding technology currently mastered by the customer. In the later stage, the output will be increased, and the high-power equipment will be customized to dry the hermetia illucens. It is expected that the daily production will reach 1 ton of dry insects, which can be used for chicken and duck feed and export.

Microwave can not only dry hermetia illucens but also kill bacteria. It is safe to be used as animal feed.

Microwave drying is also suitable for fly maggot, Tenebrio Molitor, and barley worm.