

# Mung Bean Vermicelli Production Line (4~5 Tons/10hr)

## 1. Product output

1) Product: Bean vermicelli, the diameter is  $\varnothing 0.7-0.8$ , and the size of the vermicelli bundle is: 200×160×50mm or following customer's specification.

This production line can use 100% mung bean starch, or about 60% mung bean starch and 40% corn starch, adjustable according to customer's requirement.

2) Yield: 4~5 tons per shift (10 hours)

## 2. Production process

Raw Material → Screw Conveying → Horizontal Double Screw Feeder → Horizontal Double Screw Vacuum Feeder → Vermicelli Forming via Vibrating Colandering → Continuous Vermicelli Cooking Pot → Primary Cooling Conveyor → Secondary Cooling Conveyor → Fixed Length Cutting Machine → Horizontal Conveyor → Rotary Separation Machine → Longitudinal Conveyor → Rod Placement → Placement Of Vermicelli In Trays → Cold Dolly → Freezer → Defrost → Vertical Elevator → Pneumatic Vermicelli Washing Machine → Water Filter Conveyor → Turnover Dolly → Measuring Platform → Dryer → Automatic Detachment Of Vermicelli From Trays → Accumulative Product Conveyor → Reweighing And Packaging → Warehouse

## 3. Equipment Inventory List

### Equipment List

1. Screw Conveyor, 1 set
2. Horizontal Double Screw Feeder, 1 set
3. Horizontal Double Screw Vacuum Feeder, 1 set
4. Vermicelli Forming via Vibrating Funnel, 2 set
5. Continuous Vermicelli Cooking Pot, 2 set
6. Primary Cooling Conveyor, 1 set
7. Secondary Cooling Conveyor, 1 set
8. Fixed Length Cutting Machine, 1 set
9. Horizontal Conveying Machine, 1 set
10. Rotary Detachment Machine, 1 set

11. Vertical Conveyor, 1 set
12. Freezer Storage (User-Built: 2 freezers, each 50 square meters, wet vermicelli needs to be frozen for 12 hours, and the freezing temperature is about -18 °C)
13. Vertical Elevator, 1 set
14. Pneumatic Vermicelli Washing Machine, 1 set
15. Water Filter Conveyor, 1 set
16. Platform For Vermicelli Measuring And Placement in Trays , 1 set
17. Dryer, 1 set
18. Device for Automatic Detachment Of Vermicelli From Trays, 1 set
19. Cumulative product conveyor, 1 set
20. Electrical control cabinet for vermicelli washing system, 1 set
21. Main Electrical control
  - One set of main electrical cabinet
  - Nine sets of auxiliary electrical cabinets
  - Electrical Wires and Cables
  - All use BVR national standard products.

## **Specification and Accessory**

1. Lifting dolly 1 set  
Made of all stainless steel.
2. One vertical hoist  
Made of all stainless steel. The supporting power is 1.5kw.
3. One vermicelli washing machine  
Made of stainless steel, eddy current stirring, automatic forward and reverse rotation in 90 seconds, made of 304 stainless steel, supporting power N=7.5kw.
4. Vermicelli water filter 1 set  
All stainless steel material, supporting power 0.75kw.
5. Vermicelli Rod System, 1 set
6. Vermicelli Tray system, 1 set
7. Three turnover trolleys
8. Measurement work platform  
Made of all 304 stainless steel, the dimensions of the measuring platform are: 1200×800×120×900 mm, and the depth of the measuring plate is 120 mm.

## 9. Vermicelli dryer

Two-stage drying temperature zone, 6-layer reciprocating hanging box dryer, two-layer hot ventilating, the total length is 44.5 meters, the total installation width is about  $3.54+1\times 2=5.54$  meters, and the equipment height is about  $3.25+0.7=3.95$  meters. The ceiling height of the workshop is greater than 4~4.2 meters.

9-1) The hot air fan adopts a special axial flow fan with large air volume and is equipped with a special motor, which is resistant to high temperature and high humidity, and can operate normally under high temperature and humidity of 120 °C.

9-2) The drying heat source adopts steam heat exchanger and aluminum fin-shaped heat sink.

9-3) Temperature control: using 4 groups of linkage automatic control, the temperature value is digitally displayed, set according to the drying process requirements, and it is convenient to adjust the temperature parameters set in the dryer.

9-4) The dryer system adopts the lower moisture removal method and has a symmetrical layout. The dehumidification pipes are all made of 201 stainless steel materials and connected to the outdoors.

9-5) The vermicelli box is made of 304 stainless steel, the thickness of the square tray material is 0.8mm, the thickness of the frame material is 1mm, the material of the lifting lug is 3mm, and the bottom of the vermicelli bowl is equipped with a  $\varnothing 0.3$ mm dense 304 stainless steel wire mesh. Vermicelli bowl size: 6-200×160×50mm

9-6) The door material is stainless steel 201 stainless steel, double-layer insulation, filled with silicate cotton board in the middle, and the door is sealed with  $\Omega$ -shaped hollow silica gel.

9-7) The drying frame, front and rear and middle transmission frame materials are: square tube 60×40×2.3mm -201 stainless steel.

The front vermicelli racks are all used: square tube 60×40×2.3mm -201 stainless steel, with side sealing doors made of 201 stainless steel material on both sides.

The material of the vermicelli rack is: square tube 60×40×2.3mm -201 stainless steel, and the vermicelli rack is designed with a pneumatic automatic knocking and ejecting mechanism.

9-8) The chain is a 1-inch manganese steel chain.

9-9) The shaft and sprocket are all made of 45#.

9-10) The bearing seat bearing adopts Harbin bearing.

9-11) The bottom plate and top plate of the inner wall of the dryer are made of 201 stainless steel material, and the material of the top panel of the dryer is made of 201 stainless steel.

9-12) The transmission system adopts variable frequency stepless speed regulation transmission.

9-13) The dryer chain adopts self-lubricating type, and the track and the frame are supported separately.

The foreign body collection tank is specially designed to prevent and reduce the foreign body (falling off vermicelli) in the drying process.

9-14) Energy consumption of dryer

Steam consumption: 850kg/h.

Total supporting power:  $N=71.2\text{kw}$