

**MULTI-PURPOSE PORTABLE SMOKE BIN FOR SMOKING
AND DRYING FISH AND OTHER PRODUCTS
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Introduction

Fishing is a major source of income in Ilocos Norte next to farming. During peak seasons, fish catch is bountiful that marketing becomes a problem. Price also goes down, which consequently reduces the proceeds of fisherfolks.

Drying or smoking offers opportunity for the fisherfolks to fully benefit from their fishing activity. However, the market potential and quality of smoked/dried fish is in general, not satisfactory. The traditional way of smoking and drying is still very crude and unsanitary, oftentimes prone to dirt and contamination.

It was on the above premise that a smoke bin was developed. The device does not only improve the drying/smoking process but also ensures the consumers the desired product quality. The developed smoke bin is portable, easy and economical to operate and could also be used in roasting other products like meat, rice cakes and others.

Characteristics

The smoke bin is constructed using locally available stainless galvanized iron and round bars. It has an overall height of 1.83 m and a circumference of 2.44 m. It generates heat of about 148.8°C using a 5-kg mixture (3:2) of charcoal and sawdust/rice hull. It has three main parts: head, body and combustion chamber.

Head

The head is an inverted cone type. It creates a vacuum force in order that the heat and smoke generated in the combustion chamber is focused/concentrated in the body of the machine. It has a throttle valve which is mechanically manipulated to control the temperature inside the machine. The temperature is monitored by a temperature gauge in the head flask.

Body

The body, 0.74 m tall, has a built-in rack for holding the trays. Maximum capacity is 7 trays and can hold 25 kg of fish. The trays are removable type for ease of loading/unloading of the goods for smoking/drying. A filter is mounted at the bottom of the rack as cleaning device for the smoke coming from the combustion chamber before it reaches the trays.

Combustion chamber

The combustion chamber is where the mixture of charcoal and sawdust, which serves as fuel, is loaded. The maximum capacity is 5 kg. The manifold is removable for ease of loading and cleaning. A blower fan is attached at the side of the chamber to serve as blower for the charcoal thereby facilitating ignition.

Benefits

The device is adopted from the principle of Giant Smoke Houses, which can dry and smoke fishes (2 in 1). One of the advantages is its portability and simple and economical operation. Even those small time fishermen can own the device.

The device is safe in operation and can be energized with either wood or charcoal; fuels for its smoking operation could be rice hull or sawdust, which can be obtained free from the neighborhood. It is multipurpose. More importantly, the drying/smoking process is enclosed which ensures cleanliness of the processed products.