

Ligno gives new life to Tiger milk mushroom

Through its research and patent-pending technology, the company is cultivating the long forgotten herb that treats various ailments



by Behance Beh

THERE are many species of medicinal flora and fauna which remain to be discovered globally. For instance, researchers estimate there about 140,000 species of mushroom, but only 10% are known.

The tiger milk mushroom (TMM) or *lignosus rhinocerus* (see sidebar) is a forgotten medicinal mushroom species which fell out of favour owing to modernisation.

However, it is making a comeback through controlled cultivation by the likes of Ligno Biotech Sdn Bhd, which is behind the bulk of TMM's research.

Acclaimed for its medicinal properties to treat respiratory ailments, the mushroom has been transformed into a modern health supplement with the aid of technology.

Ligno Biotech CEO Ng Szu Ting, whose background is in molecular biology, never imagined commercialising her research on a large scale.

"We [Ng and Ligno's technical adviser Dr Tan Chon Seng] were inspired to conduct research into the properties of TMM in 2002," Ng tells *FocusM*.

Their motivation was spurred during former prime minister Tun Dr Mahathir Mohamad's speech at a biotechnology conference that year, when he spoke about using the mushroom to treat his persistent cough.

Tan, who is also a researcher with the Malaysia Agricultural Research and Development Institute, suggested to Ng who was working as his research assistant at the time, to study TMM's medicinal properties for his doctorate thesis.

However, the duo stumbled upon a major roadblock due to the scarcity of the mushroom which grows deep in the jungle along the Titiwangsa mountain range that forms the backbone of the Malay peninsula.

"We purchased our first sample along Lata Iskandar from the orang asli. Quantities were limited as the best quality ones grow underground," Ng recalls.

In the many years of her research, Ng says she has seen the mushroom growing wild in the jungle only once.

Research finally bore fruit in 2008 when they discovered a patent-pending method to cultivate TMM using modern technology.

The prized part of TMM is the *sclerotia*, which is the tuber-like root of the mushroom where its nutrients are stored.

Cultivation method

Ng says through controlled cultivation, the stem and cap are stopped from forming so that the nutrients are used up.

TMM is cultivated in Ligno's facility on a six-month basis, and grown in individual containers over a bed of rice and nutrient mixture.

In order to replicate its jungle climate, the mushroom is stored in a dark and temperature-controlled facility.

Upon its maturity, the mushroom is harvested and processed into powder. Sales are calculated based on each kg's average selling price of RM1,200.

"Each rack in our facility can stack up



Ng says China is the largest importer of Ligno products

to 1,000 cultivation boxes. We are able to produce about 500kg of raw material a month," she says.

Ligno's first attempt at commercialising its research was in 2012 when it partnered with direct selling company CNI Holdings Bhd. That experience taught the team how to do business.

"TMM is a new product in the market. It requires a lot of marketing and promotion. Not many companies were willing to promote a single mushroom species as they usually have a pre-existing range of herbs in market," Ng says.

Hence, owing to the slow pickup, Ligno introduced Tigerus, which is its brand of products in 2013. It is sold at selected Chinese medicinal halls, pharmacies and distribution points.

"We ventured into retail ourselves as we hoped to attract the

business-to-business customers and work with them on private labelling," she says.

The bulk of Ligno's business is selling raw materials such as powdered TMM. It also offers private labelling services from proof of concept to final manufacturing which is done with selected partnerships.

However, when domestic demand dwindled from last year owing to poor market sentiment, Ng believed the only way to sustain the business is to look abroad.

Her guess was correct and today, 90% of Ligno's business is for the export market, with China being one of its biggest customers.

"There are many gaps to fill in the export market. Regulations differ from one country to another.

"With TMM being a Malaysian herb, no records of the mushroom exists abroad so we have to put in extra effort to educate and provide the necessary documentation to support our claims," Ng says.

Additionally, many countries are keen to protect their natural resources and set very high requirements on the import of an unknown health supplement.

However, new developments are taking place in Ligno. The company is in the midst of formalising a deal with a UK-based partner in the animal feed industry.

Challenges

One of the biggest challenges Ng and Tan faced was not in the realm of scientific research, but making sense of business.

"We used scientific terms to describe our product and research, but soon realised we have to speak in layman's language for marketing purposes.

"Our initial plan was to leave the marketing efforts to a partner and focus on research and development. But we concluded it was best we market the product as we know it best," Ng says.

This meant attending countless marketing and business courses to grasp the language. Soon, providing product education and training to potential customers became a big part of Ng's duties as well.

She says the company is now in the midst of identifying a larger facility that can cope with growing demand.

The new facility will allow Ligno to cultivate more TMM and expand its research and development to other local medicinal mushrooms.

"Right now, we are looking at new methods to extract nutrients from TMM," she says. *FocusM*



Modern cultivation of the tiger milk mushroom's sclerotia is done in a temperature-controlled setting which mimics jungle conditions

The orang asli believe the tiger milk mushroom can treat respiratory ailments, allergies and even tumours



Sprung from tigresses' milk droppings

TIGER milk mushroom (TMM) is a tropical medicinal mushroom that grows wild in Southeast Asia's jungles.

It is commonly used by orang asli to treat respiratory ailments, allergies and even tumours. The *sclerotia*, which is its tuber-like root, is ground and mixed with water to create a health tonic which can be consumed orally or applied topically to heal skin ailments.

Folklore even has it that the mushroom's stem and cap be burnt and its ashes scattered in the forest to ward off lingering tigers.

Its name is derived from how tigresses feed their cubs by dropping milk onto the ground. It is believed the mushroom sprouted as the milk hit the soil.

Widely used by locals in the 1950s to 1960s the herb fell out of favour in the 1970s due to the influence of Western medicine.

The supply of TMM also dwindled during the period. This is said to be linked to the widespread use of herbicides and insecticides.