

Cutting-edge prawning

Local farming company Universal Aquaculture is taking the rearing of prawns to new heights. A six-tier system at its facility in Tuas can produce a tonne of vannamei prawns a week. **Audrey Tan** highlights how this farm is leveraging technology to produce more protein with less land.



WHAT IS BEING FARMED?

VANNAMEI PRAWNS
(*LITOPENAEUS VANNAMEI*)

Also known as:

Pacific white shrimp, white-legged shrimp, king prawn, or "bai xia" in Mandarin.



Where:

Found naturally in the eastern Pacific Ocean, off the coast of the Americas. But they are now farmed in many countries, especially in Asia, according to the Food and Agriculture Organisation (FAO) of the United Nations.



OUTPUT

For a start, the farm can produce about

150kg to 200kg
of prawns a day,
or up to 1 tonne
of prawns a week.

But as the system is modular and can be easily deployed at a larger industrial plot, the farmers say producing **up to 1 tonne**

of prawns a day will be feasible. Their next farm is projected to be launched in the third quarter next year.



HOW?

The modular aquaculture system allows the farmers to stage the grow-out of the prawns to meet demand.

This means instead of growing prawns from hatchlings to adults at the same rate, the farm is able to ensure prawns reach maturity at different stages.

This helps them tailor the amount of prawns they harvest on a given day to demand.

The controlled environment of the system also means no antibiotics need to be used on the prawns, which are not exposed to pollutants such as micro-plastics or mercury.

To reduce the energy requirements of a filtration system that relies on pumps to cleanse the water, Universal Aquaculture developed its own system that leverages the natural purifying abilities of beneficial bacteria and other aquatic plants, such as sea grapes, which can be sold.



WHERE?

At Universal Aquaculture's

1,300 sq m

warehouse in Tuas South Link.



There are **33 sets**
of its six-tier system in the facility.

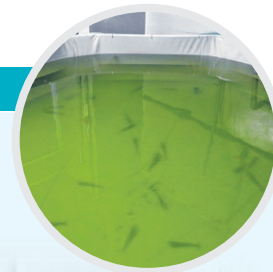
The first harvest is expected **in June**



STAGES OF GROWTH

1 Mating

- Wild-caught prawns are sourced from the wild for the brood stock.
- They are left in a mating pool in the facility until the females become gravid, or pregnant.



2 Birthing

- Pregnant females are moved to another tank to spawn.
- The controlled environment allows farmers to tailor parameters such as water temperature that can determine how fast the eggs hatch.

3



Nursery

- The prawns are moved to the nursery when they reach a post-larvae stage, which means they already start to resemble adult prawns.
- They usually stay at this stage for about two to three weeks, depending on temperature.

4 Grow-out

- Once at the grow-out stage, they are moved from tank to tank depending on their size.
- Juvenile prawns are located at the top-most tier, while mature prawns ready for sale are located at the lowest tier.
- Prawns usually spend three months at the grow-out stage before being sold.

