



Prof. Dr. Wickneswari Ratnam FASc,  
Managing Director, Nomatech Sdn Bhd

A leading expert in plant genetics and biotechnology for agricultural applications with a special focus on food security and sustainable ecosystems. One of her pioneering collaborative research works on rice genomics and breeding resulted in the development of advanced backcrosses between *Oryza Sativa* and *O. Rufipogon* tracked by molecular markers for the first time in Malaysia. An outstanding low glycaemic index rice rich in antioxidants and zinc produced from this crossbreeding program has been commercialized in 2017. Two high-yielding white rice varieties with good resistance to diseases and tolerance to submergence were approved for certified seed production for farmers in 2018.

## NOMATECH

### Translational Research in Plant Genetics and Breeding

Post-COVID-19, the focus on health has increased tremendously, and people are looking for better options in their diet management. There have been various attempts to improve crop yield. However, doing so in a manner that doesn't burden farmers is still a challenge. Take the example of rice. Rice farming is usually aligned with poverty, where farmers have marginal lands to cultivate rice. To empower rice farmers, companies need to develop varieties of rice that uplift the farmer's income and, at the same time, is accessible and affordable for the general population. Many agriculture-based companies are focused on innovation to get a higher yield of rice for these farmers, and Nomatech is one such company that has succeeded in making longer strides to commercialize crossbred, low GI red rice and white rice.

#### New Low GI Variety of Rice

Focused on agriculture R&D and innovation, Nomatech specializes in commercializing agricultural research and provides agricultural-based services. "We are the first Malaysian company to commercialize a crossbred red rice under the brand name Primera and make it available to the local market in Malaysia," says Prof. Dr. Wickneswari Ratnam, Managing Director, Nomatech Sdn Bhd. "Primera® Red Rice has the lowest glycaemic index (GI) for rice in the international GI ranking. It is expected to earn growing acceptance among Malaysia's increasingly health-conscious middle-class population and, in particular, will appeal to those who have diabetes." While making this high-quality red rice available in the market, Nomatech can also provide an appreciable income to the marginal farmers growing rice.

#### Academic Entrepreneur

The journey to offer a marketable variety of red rice started in 2001 when Dr. Wickneswari did her groundbreaking research on breaking the yield ceiling of rice. For over eight years, her research team, which involved local and international postgraduate students, was able to develop new rice varieties. They were able to file and secure IP for



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these varieties in 2014, and Dr. Wickneswari began her career as an academic entrepreneur.

In 2015, she established Nomatech as a shareholder and managing director. The next step was the pre-commercialization validation of various rice varieties, which involved many tests and regulatory approvals from the government before the rice varieties could be released for commercial cultivation. Being a member of the advisory committees set up by the government on rice, Dr. Wickneswari had many engagements and was able to communicate with regulatory authorities. Such networking helped her build a rapport and launch Primera Red Rice into the Malaysian consumer market in late 2017.

#### Agriculture-based Services

Apart from Primera, the company offers agriculture-based services. These services are developed based on the founders' experience in launching their variety of rice. They provide consultation on verification trials called Local Verification Trials (LVT) of new rice varieties and approval for certified seeds. The team at Nomatech

regularly engages with farmers and works closely with the stakeholders in the rice industry, like regulatory authorities.

In terms of laboratory services, the company provides Resistant Starch Analysis, where they leverage the university labs with long-standing MOUs. Nomatech helps determine resistant starch by using a commercial Resistant Starch Assay Kit from Megazyme. In addition, they can provide seed drying facilities to farmers who want to produce seeds by themselves on a smaller scale. The company has acquired a portable seed dryer that can dry up to 1.5 to 2 metric tonnes within two hours.

"We have acquired equipment from Optomachines, France that can analyze what's inside the paddy without removing the husk," says Dr. Wickneswari. "We can know the color of the pericarp, which is very important when we produce seeds for planting. We want it to be purebred and with less contamination." This helps producers to adhere to the guidelines to produce high-quality seeds. The company can authenticate commercial rice varieties using DNA markers.

With a vision to be the most advanced R&D company in agriculture, Nomatech has rightly placed itself in the market to offer agro entrepreneurs, elite and superior planting materials. Dr. Wickneswari emphasized the importance of passionately innovating and continuously carrying out R&D to produce marketable planting materials. Now that the company has been approved for scaling up Primera on a large scale, they are aiming for expansion. Currently, the focus is on fulfilling the local needs for healthy rice. Later, they aim to reach foreign markets, primarily in the Middle East, Japan, and possibly Europe. [ABo](#)

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