

# Purple sweet corn – naturally nutritious!

**L**ED by the University of Queensland in collaboration with Department Agriculture and Fisheries (DAF) Queensland, a five-year cross-industry project is providing research into innovative and appealing products that are highly nutritious, can be differentiated in the marketplace, and are visually attractive and flavoursome.

Vegetables Australia spoke to Project Lead Dr Tim O'Hare about the project, which among other things, includes purple sweet corn, strawberries and macadamias.

The Health, Nutrition and Food Safety Fund is one of seven funds developed by Hort Innovation to facilitate collaborative cross-industry research to secure the future of the horticulture industry. A project under this fund is Naturally Nutritious (HN15001), which is researching the development of innovative food products and varieties that are nutritious, delicious and visually appealing.

One of the products being developed through the Naturally Nutritious project is purple sweet corn, with high levels of specific phytonutrients for human health.

Fruit, vegetables and nuts play an important role in human health, and Tim, Senior Research Fellow at the Centre for Nutrition and Food Sciences, Queensland Alliance for Agriculture and Food Innovation (QAAFI), said while most Australians are aware of the 'Go For 2 & 5' program and how many fruits and vegetables they should eat, most are not actually doing it.

## A bigger nutrition bang for your buck

"A major thrust of the Naturally Nutritious project was to investigate if we could increase the nutrient content of a range of products, so that you could get more bang for your buck, or 'more nutrition per serve'," Tim said.

One of the considerations was the 'look' of the product that was being developed. As Tim explained, humans are visual beings, so it is important for the product to look attractive and visually differentiated from a 'standard' product of the same type.

"For example, purple sweet corn, developed from Peruvian purple maize, clearly looks different to yellow sweet corn. Of course, the product has to taste as good – if not better – than



**Dr Tim O'Hare with purple corn that is under investigation during the Naturally Nutritious project**

the standard product, because after all, this is food and it should taste great. If it doesn't taste great, then the likelihood of you buying it a second time drops dramatically," he said.

In some products, the pigment is actually the active nutrient, in which case Tim said that can make it easy to look attractive to consumers.

"For example, the orange colour in orange capsicum is zeaxanthin, which is important for slowing the progress of age-related macular degeneration. Purple and red anthocyanin pigments have been linked to improving cardio-vascular health. So, increasing purple colour also increases the health value of vegetables."

## Purple power

Tim began creating purple sweet corn a couple of years before Naturally Nutritious was established, but he believes the project can make the development of a supermarket product move forward faster. Though, as he explained, it is not that simple.

"The difficulty is that the natural mutation that makes sweet corn 'supersweet' is positioned extremely close to the mutation that 'blocks' purple pigment production. The challenge was to break this tight genetic linkage, so that the supersweet mutation



**Possible purple corn variations.**