



Qponics Limited,
ABN 84 149 001 678,
3 Clunies Ross Court,
Brisbane Technology Park,
Eight Mile Plains,
QLD 4113, AUSTRALIA
Tel: +61 (0)7 3188 9086
PO Box 4526, Eight Mile Plains, QLD 4113, Australia

Qponics Update – 16 December 2019

New Qponics Logo

Qponics directors have approved a new logo for the Company as you can see in the letterhead. This was overdue and the fish and the green leaf, which represented the origins of Qponics as it evolved from an aquaponics company to a fish and microalgae company before becoming solely focused on microalgae, have been jettisoned. The new logo retains the Qponics corporate colours of blue, green and amber and shows the progression of microalgae shaped drops emerging as blue, transforming into green, back to blue and finally as amber, to represent the creation of health and wealth from marine microalgae.

Independent Testing of Algae Products

The upgraded pilot algae farm commenced operation of the new 65m x 12m pond in November this year to cultivate *Nannochloropsis* and harvest the new pond using the Liqoflux ultrafiltration system and the Evodos 25 centrifuge. There was a noticeable increase in productivity of algae (measured as grams of algae per square metre per day) in the new pond compared to that experienced using the original smaller ponds at the site. This, together with the improved harvesting process, led Qponics to commission independent analysis of the oil extracted from the dried paste and its protein-rich by-product.

The notable analysis results are as follows:

Algal oil:	33% EPA omega-3 fatty acid 20% palmitoleic omega-7 fatty acid 0.51% palmitic acid
By-product:	72.5% protein <0.05% fatty acids

EPA omega-3 in the extracted oil was 33%, which is an excellent result, surpassing expectations based on previous in-house testing of up to 25% when using the smaller ponds. The leading competing product, Qualitas Health's iWi branded EPA omega-3 oil extracted from *Nannochloropsis oculata*, is 25% EPA. Therefore, the EPA concentration in Qponics oil is expected to be competitive.

It was previously known that palmitoleic omega-7 fatty acid was present in Qponics' oil and was measured at 20% in the independent analysis. Thus 53% of the oil is EPA omega-3 plus palmitoleic omega-7 fatty acids.

Palmitoleic acid omega-7 fatty acid (chemical name 9-hexadecenoic acid) is increasingly recognised for its beneficial health effects, including increasing levels of HDL cholesterol (the good one) and lowering LDL cholesterol (the bad one). This fatty acid can also be sourced from macadamia nuts and sea buckthorn fruit pulp and seeds, but these also have undesirable high levels of palmitic acid. Dairy products can be a rich source of omega-7 but are heavily dependent on the cow's diet, and modern dairy farming practice has reduced its presence in milk. Omega-7 is absent in most fish oils, because it is removed during the refining process, which may be one of the reasons that some studies conclude that consuming fresh fish is better than eating fish oil supplements.

A diet rich in omega-7 fatty acids may decrease glucose-sensitive destruction of beta cells in the pancreas, a condition associated with diabetes, if the palmitic acid intake is limited, by maintaining healthy blood sugar metabolism as well as healthy triglyceride levels, and healthy C-reactive protein levels. The pioneers of [Omega-7 research at the Cleveland Clinic](#) feel so strongly against palmitic acid that they insist that all Omega-7 products should have less than 5% Palmitic Acid. Note that the Qponics oil has only 0.51% palmitic acid. The [World Health Organization issued a notice in 2003](#) that said there is 'convincing evidence' that palmitic acid is harmful for cardiovascular health, grouping it along with risk factor like alcohol, trans fats, obesity and high sodium intake.

The by-product after oil extraction includes 72.5% protein with no detectable fatty acids. This is an excellent result! To put this into perspective, on the future commercial Qponics microalgae farm, protein productivity is projected to be up to 32,000 kg per hectare of algae ponds per year. In contrast, optimal protein yields of soybean and chickpea per hectare per year is about 1,200 kg and 1,000 kg, respectively. Used as an alternative protein food ingredient this product can be competitively priced against all other sources of food protein with minimal effect on the bottom line, because it is a by-product of high-value algal oil production.

Dr Graeme Barnett, Chief Executive Officer and Managing Director