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Lupin in pod

Australian sweet lupin – the natural way to meet the needs of the health-conscious consumer

Move over quinoa and chia, the new superfood on the block is an ancient pulse called Australian sweet lupin. Perfectly placed to meet a number of growing consumer trends, Australian sweet lupin is set to take centre stage for people interested in optimising their health and wellness. The diversity of functionality of this pulse also allows it to be used in a variety of food formats, making it a must-have ingredient for product developers.

Health is not a niche anymore. Health is becoming an expectation. This is

reflected in the key consumer food trends of 2017, many of which focus on an increased awareness of the important role of foods in improving health and wellbeing and reducing risk of chronic conditions such as obesity and diabetes. Purchasing decisions are increasingly driven by these holistic wellness benefits. Therefore, the companies that continue to envision this growing trend and act upon evolving consumer demands are set for success.

Obesity and diabetes are significant health issues driving consumer food choices across the globe. This is equally true in the Middle East

where more than one out of every three people is obese, rising to almost every second person in some Gulf countries (Sultan A.L. Nohair, Obesity in Gulf Countries, International Journal of Health Sciences, Jan. 2014). In addition, almost 33 million people across the Middle East are living with diabetes (WHO Global Report on Diabetes 2016).

Health-conscious consumers are looking for foods that can help them manage or prevent these chronic conditions and optimise their wellbeing. At the same time, they want safe, natural foods that are good for the planet as well as their health. This is

driving the top consumer trends including increased interest in naturally functional foods, plant protein and digestive wellbeing. Australian sweet lupin (ASL) is well placed to meet these trends.

A wealth of health benefits

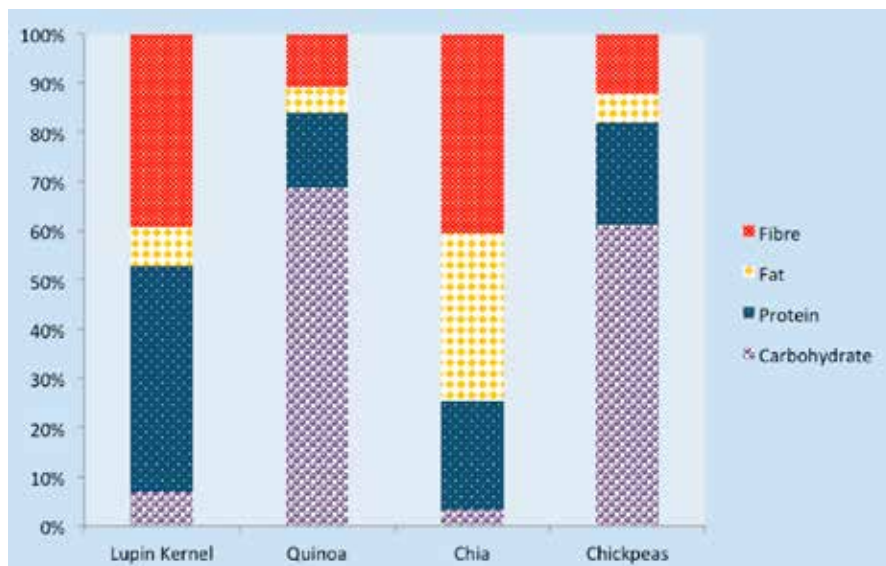
While people may be familiar with the European white lupin, which has been used as an ingredient for many years, they may not know its cousin: the Australian sweet lupin, or narrow leaf lupin. Just like chia or quinoa, ASL fits the bill of a naturally functional food. Its unique profile of macronutrients and phytonutrients are thought to be the reason behind its health benefits in cholesterol and blood glucose management.

The low carbohydrate and high fibre content of ASL makes it an excellent choice for people managing diabetes. Lupins, including ASL, have been shown to have both short-term and long-term benefits on insulin and glucose levels. Studies indicate they can help maintain a healthy blood glucose level after a meal. In addition, a diet high in lupin flour was shown to significantly improve long-term insulin resistance, helping people with diabetes live longer without complications.

ASL's low GI coupled with the satiating effect of its high protein and fibre content is thought to explain the benefits seen in helping to manage appetite and reducing overeating. A study in which participants ate bread made with 40% lupin flour demonstrated that people felt fuller for longer and ate less at the next meal than those people who ate regular refined wheat bread. This suggests eating lupin-enriched bread may lead to reduced food intake and weight loss over the long term (Lee et al, 2006, Lupin-enriched bread increases satiety and reduces energy intake acutely, Original Research Communication, American Journal of Clinical Nutrition).

Packed with protein

ASL also fits the bill as a sustainable



A comparison of the nutrition profiles of lupin, quinoa, chia and chickpeas.

source of plant protein. A number of drivers are creating consumer interest in plant protein: the association of high-protein diets with weight loss, increasing evidence of the link between a diet high in plant protein and a longer life, as well as the sustainability credentials of a diet lower in meat. Cereals, pulses and nuts all offer plant protein, but ASL is particularly high in protein. At 40% protein, ASL kernel has three times the protein content of quinoa. It is particularly high in the amino acid arginine (3.6g / 100g) which is thought to partly explain why it has a positive effect on cholesterol levels.

ASL also answers the call for another top trend for the health-conscious consumer: digestive wellness. Consumers are beginning to understand the links between the food they eat, the effect on the bacteria in the gut and the myriad of health effects the bacterial population has on health. A healthy population of good bacteria in the gut has been linked to a range of health benefits, from maintaining a healthy weight to improved immunity and bone health as well as reduced risk of some cancers. One of the keys to promoting good bugs in the gut is prebiotic fibres which the bugs feed on to grow and flourish. ASL has twice the fibre content of other pulses. Most of the fibre in ASL

is pectin and oligosaccharides which are potent prebiotic fibres.

But ASL is more than just low GI, packed with prebiotic fibres, high in plant protein. While not high in fat, the fats in ASL are predominantly unsaturated fats, linked to improved health. It is also a source of essential nutrients including magnesium, iron and B vitamins, all of which are important for unlocking the energy in foods and fighting fatigue. ASL also contains phytochemicals including carotenoids which are good for eye health and gives lupin flour its distinctive yellow colour.

Great for use in many foods

ASL is a versatile ingredient that can be used in a range of food formats. The bean can be eaten whole, split, kibbled, flaked or milled to flour (kernel flour and wholemeal). Foods made with ASL range from flat breads to hummus-style dips.

Being naturally high in fibre and protein, the addition of ASL can assist in improving the nutritional profile of wheat-based baked goods. Inclusion of 10 to 15% lupin flour produces products with almost double the amino acid score while retaining similar functional properties. Protein and fibre fractions can also be isolated from the seed. Substitution for wheat flour also reduces the re-



Photo credit: GMAW/CNLC

Lupin being harvested.

fined, highly digestible carbohydrate content.

Being naturally high in fibre and protein, the addition of ASL can assist in retaining the clean label consumers are seeking, without the use of isolates.

ASL is also naturally gluten-free. Gluten-free foods are now showing up everywhere after being confined to health-food stores for years. Supermarket aisles are flooded with products proudly labelled 'gluten-free', and many restaurants now offer gluten-free options. One of the unhealthy aspects of this trend is that the gluten-free products are often made with refined grains, and are low in nutrients. ASL is a nutrient-dense option that can make gluten-free products healthier and is suitable for

people with gluten intolerance and coeliac disease.

Allergy/intolerance caution

The prevalence of lupin allergy is not well known but thought to be small. However, it is advisable that people with allergies, especially to peanuts and legumes, are tested for allergic reaction to lupin. Sweet lupin also contains prebiotic FODMAPs. These are beneficial for most people, helping to promote levels of good bacteria in the gut, but may cause problems for those suffering from irritable bowel syndrome. The sustainable and unique nutritional credentials of lupin as a food to the community as a whole, especially those at risk of chronic diseases, are vast. Coupled with its versatility as an ingredient

it is an obvious choice for inclusion in foods that are aimed at the health-conscious consumer. ASL is well placed to become the next superfood adding a new dimension to healthy eating. |

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Photo credit: GIWA

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Photo credit: GLNC

Key messages

1. Australian sweet lupin (ASL) is an ideal ingredient to meet a number of consumer trends on the rise across the globe.
40% protein | 34% fibre | negligible starch | low GI | gluten-free | not genetically modified | sustainably produced
2. ASL is the world's richest natural source of combined plant protein and fibre. (Belski R and Kouris Blazos A, 2016, Health Benefits of legumes and pulses with a focus on Australian Sweet Lupin, Asia Pacific Journal Clinical Nutrition)
3. Naturally high in fibre and protein, inclusion allows clean labelling that is so important to the health-conscious consumer, with huge potential in growing sectors: vegetarians, vegans and people with intolerance or allergy to gluten, soya, milk, or egg.
4. ASL has a range of health benefits in connection with diabetes and obesity.
5. ASL is a versatile ingredient that can be used in a range of food formats.

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