

Sustainability Points to Plant Proteins

Global agriculture faces the prospect of a changing climate and the challenge of feeding the world's population that is growing annually at about 1.3%. By 2063, the population is expected to double from about 6.5 billion today to 13 billion. Ensuring enough protein is available to feed our world's population is crucial as protein is one of only three macronutrients in our diet: protein, carbohydrate, and fat.

The different amino acids that make up proteins are important for growth and tissue repair and replacement. Almost

Nations Food and Agriculture Organization, the global livestock sector generates more greenhouse gas emissions, as measured in CO₂ equivalent (18%), than transportation. It is also a major source of land and water degradation. Rearing livestock creates significantly more greenhouse gas emissions than driving cars.

Plant protein production, on the other hand, offers a lower environmental impact and a sustainable solution by reducing energy consumption, emissions, land usage, and water consumption. Producers must feed

of plant-based proteins are clear. Plant-based proteins can lower our risk for heart disease. Adding soy protein to your diet may also help in the fight against heart disease. Soy protein can be beneficial in lowering blood cholesterol. By lowering LDL or "bad" cholesterol, the risk of coronary heart disease is reduced. Research studies have demonstrated the cholesterol-lowering properties of soy protein. With this evidence, 11 countries have approved health claims for soy protein's potential to lower blood cholesterol and lower the

4.5% to 2014, with plant proteins expected to grow at an even higher rate. The global protein ingredient market is assumed to be multiples of the U.S. market.

Several trends are fueling the growth of the plant protein ingredients market. Food manufacturers are responding to the demand from health-conscious Baby Boomers and growing numbers of consumers who prefer meat-free, high-protein foods. High and volatile animal protein prices have put cost pressures on global food manufacturers who are finding innovative ways

Plant protein production ... offers a lower environmental impact and a sustainable solution

by reducing energy consumption, emissions, land usage, and water consumption.

every part of the body—and especially bones and muscles—requires amino acids to stay healthy. As crucial as protein is, maintaining our world's current protein production levels will further deplete our land, water, and fossil fuel resources. We clearly need to invest in research and infrastructure solutions that will provide protein to regions vulnerable to food deficits.

As we struggle to feed our growing global population, will plant proteins trump meat proteins? Meat protein production demands significant amounts of our global supply of energy and natural resources. According to a report published by the United

plant protein to animals to produce animal proteins, and animals are not efficient converters, pound for pound, of the proteins they consume. The average conversion ratio of vegetable to animal protein is 10 to 1, which means that it takes about 10 lbs of feed protein to produce 1 lb of animal protein.

Our growing global population needs affordable protein. We'll be serving protein to about 9 billion people by 2050, according to global population forecasts. Access to inexpensive plant proteins is crucial in serving this rising global population without adding undue stress to our environment.

The physical health benefits

risk of coronary heart disease.

Plant-based diets are typically high in fiber and lower in fat. In numerous studies, high-fiber, low-fat diets have been shown to lower the rates of certain cancers such as those of the colon, breast, and prostate. In addition, this type of diet is believed to reduce the risk of diabetes.

The market demand for plant proteins is growing rapidly. According to market researcher Frost & Sullivan, the U.S. protein-ingredients market alone was forecast to generate nearly U.S. \$4.5 billion in revenues in 2008 (43.3% plant proteins and 56.7% animal proteins) and is projected to grow at a compounded annual growth rate of

to utilize inexpensive plant proteins as replacements or partial-replacement for expensive animal proteins. Lastly is the trend towards sustainability in sourcing of foods.

Production of animal proteins is viewed as less "environmentally economic" when compared to the production of plant proteins. The growing awareness of the large amount of greenhouse gases generated globally through livestock production is recognized by both consumers and food manufacturers alike. **FT**

Johann F. Tergesen is President and Chief Operating Officer of Burcon NutraScience Corp., Vancouver, Canada (jtergesen@burcon.ca).