

# FOOD CHEMISTRY & NUTRITION

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### Bioprocessing pilot plant facilities

The Bioprocessing Pilot Plant (BPP) is a 279 m<sup>2</sup> (3000 ft<sup>2</sup>) facility, funded by the Saskatchewan Ministry of Agriculture. The facility houses new industrial-grade process development equipment designed for the isolation of valuable components from plant materials. The facility can be used for the extraction and purification of large amounts of natural materials. Depending on processing needs, extractions can be conducted in the presence of flammable solvents, strong acid, strong base, high temperature and high pressure, and extracts can be concentrated prior to further purification. The facility is designed to facilitate production research in the growing food and bioproducts sector. Users have developed new prototype products and improved more established products. This BPP is unique in western Canada in its ability to conduct natural product isolation and conduct scale up research under GMP protocols. Potentially useful applications of the facility include products for markets as diverse as foods, biofuels, new drugs, vaccines and nanomaterials. Teaching undergraduate and graduate students is a key activity in the plant. Also, co-operative research and development with industry partners is a mandate of the facility. Research conducted in the BPP can be taken directly to industry where it can be commercialized. With its 'industrial scale-up' tools, the BPP is the ideal facility from which many areas of crop utilization and pharmaceutical research can be supported.

### Biography

Shahram Emami has his experience in the fields of Food Science and Food Engineering with substantial background in starch separation from pulse and cereal grains, purification and isolation of natural products from various plant materials, protein and oil extraction from crops, grain quality and processing and also, value-added process engineering of biological materials. He obtained PhD in 2007 from the Department of Agricultural and Bioresource Engineering (now the Department of Chemical and Biological Engineering) at the University of Saskatchewan. His studies were on the separation of starch and protein from chickpea flour and also on the functionality of the isolated starch and protein. He obtained valuable experience as a Post-doctoral fellow for 3.5 years and since 2011 he has been working as manager of the BPP at the University of Saskatchewan.

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