

Food System Approach to Domestication of Fiddlehead Fern

Abbey L*

Department of Plant, Food, and Environmental Sciences, Dalhousie University, Canada

*Corresponding author: Lord Abbey, Department of Plant, Food, and Environmental Sciences, Dalhousie University, Faculty of Agriculture, Canada, E-mail: labbey@dal.ca

Editorial

Volume 1 Issue 3

Received Date: November 06, 2016

Published Date: November 10, 2016

Editorial

Public health concerns related to food and nutrition in vulnerable and remote communities are remarkably high in many places in the world. Agricultural activities in most of these locations may be limited by factors such as susceptibilities of plant genetic resources, extreme weather conditions, poor soil and water conditions and inadequate technological input. In Canada, food and nutrition related issues in First Nation reserves is said to be twice the national average, which was reported at 27% (Source: Council of Canadian Academics, 2014). These health-related issues can be linked to increasing cases of obesity, diabetes, cardiovascular diseases and cancer, amongst others. Although attempts are being made by governments and other agencies to build greenhouse facilities and community gardens to increase the availability of fresh food and extend the growing season, less attention is paid to native plants high in nutraceutical values. For instance, wild indigenous plants such as fern (plants belonging to Pteridophytes), Canada lily (*Lilium canadense*), cattail (*Typha spp*), hyssop (*Hyssopus officinalis*), Indian pipe or Ghost plant (*Monotropa uniflora*) and Yellow cress (*Rorippa palustris*) have remarkably high culinary, medicinal, agronomic, aesthetic and socio-cultural values. It is worth noting that if the current trend in global climate change continues, the genetic provenance of these functional wild plants risk becoming endangered or extinct. Therefore, there is an urgent need to investigate the domestication and possibly, the incorporation of some of these indigenous functional plants into main stream agri-food systems.

Typically, fiddlehead ferns (crozier forming ferns) are native plants and delicacy to many Canadian First Nation communities. It is predominantly harvested from the

wild. Most of the genera (ca. 300) and species (ca. 11,000) of wild ferns that are found worldwide are under-exploited. Many of these ferns may be found in various Canadian terrestrial ecological zones with potential for domestication in local and national agri-food systems. Amongst the various ecotypes of ferns, the most researched in North America is the wild Ostrich fern (*Matteuccia struthiopteris* L.) plants, which showed high fatty acid and antioxidant contents. However, most of the many species and varieties of fern plants have not been fully exploited and therefore, their complete phytochemistry profiles including anti-nutritional factors are not well understood. Adoption of a systematic approach to simultaneously help address the pressing public health issues through integration of science and traditional knowledge of food and medicine will be significant. This transdisciplinary approach will contribute to inclusion of fern plants and others in the mainstream agri-food system. Additionally, it will help promote anthropological connections that will link nature, tradition, health and food. This initiative will help promote edible fern production and use.

Currently, fresh fiddlehead greens are available only in spring in few places every year in Canada. Greenhouse production can extend production and supply of fiddlehead greens in the year. In addition, the ability to extract oil rich in omega-3 fatty acid will increase consumers' demand and generate new business enterprises in vulnerable and remote communities. It will also contribute to diversifying food choices and broadening the nutrition-base. In the long term, it will have positive health, socio-cultural, environment and economic benefits.