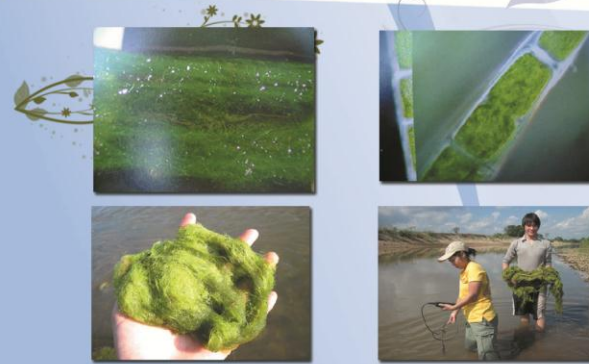


Antioxidant Efficacy of freshwater algal genus *Cladophora* spp., *Microspira* spp., and *Nostochopsis* spp. from Nan watershed, Nan Province. Samples were collected from 5 survey Pua and Tha Wang Pha district. For study and compare the antioxidant activity of extracts of the three species of freshwater algae with standard solution 3-ert-butyl-4-hydroxyanisole (BHA). Found that extracts of freshwater algae genus *Nostochopsis* spp. showed maximum DPPH antioxidant is between 32.1 to 87.5 and found the beta-carotene 4.71-7.09 mg/g. Found of phenols in extracts of fresh water algae genus *Microspira* spp. Maximum is between 9.37 -37.02 mg/g.

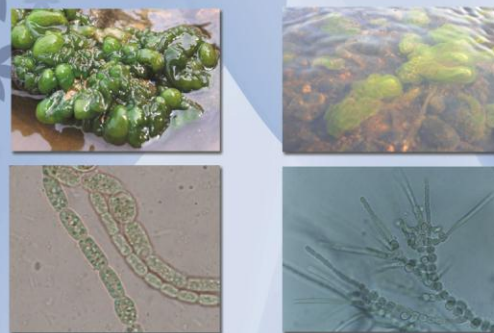
*Microspira* spp.



*Cladophora* spp.



*Nostochopsis* spp.



Wilailak Suanmali and Pakao Phoomyai

Author for correspondence; e-mail:

aewilailak\_s@hotmail.com

Tel. 0839528502



# Efficiency of Antioxidant Compounds from Fresh Edible algae



Algae are microscopic to macroscopic photosynthetic organisms. They have many forms including unicellular or multicellular cells in groups as colonies, filamentous with branching or unbranching, thallus with rhizoids, stems and leaves like higher plants. However, they have no vascular system, each cell is equally photosynthetic for its own living (Round, 1973). In algae and higher plants, carotenoids play multiple and essential roles in photosynthesis. (Campo et al., 2007).

**Keywords: Efficiency of Antioxidant, Fresh Edible algae**

In Thailand the edible freshwater algae (known locally as Kai) that consists of two genera *Cladophora* and *Microspora*. "Kai" is a local name of the edible filamentous green algae genus *Cladophora* and *Microspora*. It is abundant in the upper Nan watershed, especially in Nan and Yao rivers at Amphur Pua and Amphur Tha Wang Pha, Nan province and also in the Mekong river at Amphur Chiang Saen and Amphur Chiang Khong, Chiang Rai province. Kai is abundant during November to March when water is clear with medium flowing rate and optimum temperature. The local people collect Kai for family consumption and medicine. Because Kai contains high nutritional value, especially protein, fiber, carbohydrate, calcium, potassium and selenium. To date it is processed into various products, food and snacks, as community product e.g. Kai Yee, chili sauce Kai etc. that make career and money into the community as well. In addition, Kai contains many benefit pigments, especially carotenoids which are antioxidant (protect and prevents cancer), provitamin A and prevent the degeneration of eyes and bone in humans. Moreover, it can be used as supplement feed for the commercial animal such as fish and chicken for improving the meat nutritional values, increase immune, gives more fish appetizing color and increase egg yolks in chicken. Furthermore, carotenoids have immensely values in food, supplementary food and animal feed industrial.

*Nostochopsis* is a branching, filamentous blue green alga found in freshwater lotic ecosystems and in many different habitats. Its ecology varies significantly with habitats. *Nostochopsis* is an attached alga but may also form floating or loose mats on soft substrates (Sze, 1998; Wehr and Sheath, 2003; Smith, 1950). *Nostochopsis lobatus*, grows luxuriantly and attach to the rock surfaces in the form of mucilaginous balls in fresh water lakes and slow moving streams. The advantage of its natural growth in the form of mucilaginous balls of unialgal population is fully utilized by the local people as a dietary supplement. *Nostoc. lobatus* is a rich source of protein, carbohydrates and fatty acids (Pandey and Pandey, 2008). In the mountains of Peru, globular colonies of *Nostoc commune* (Nostocales) are collected in the highland lakes by the indigenous people, who call them Lullucha. They are consumed locally, traded for maize, or sold, eventually entering the folk markets of Cusco and other neighboring cities (Holly et al., 2008). In Thailand, *Nostochopsis* spp. (known locally as "Lon") is abundant in the Nan and Mae-Khong rivers of Northern Thailand. It grows in winter until mid summer, when the water is clear and attach to bed rocks or cobbles. In rainy season, heavy current of water and high turbidity effect this alga. The local people around these rivers consume it as both fresh and preserved food. *Nostochopsis* had high carotenoids and nutritional values for human health (Peerapompisal, 2008; Khuantrairong et al. 2009).