Posters

**Alpha-linolenic acid content in edible wild vegetables in Thailand**

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**Background** - There are substantial varieties of vegetables in Thailand. These are not just planted, they are also wild, and grow both in water or on land.

**Objective** - The aim of the present study was to investigate the alpha-linolenic acid (18:3n-3) content of the wild vegetables grown in Thailand.

**Design** - Fourteen wild vegetables: Koon (Colocasia giganta Hook. f.), Khayang (Limophila aromatica (Lak.) Merr.), Kratin (Leucaena leucocephala de Wit), Chi farang (Erynginum foetidum Linn), Kare (Sesbania grandiflora (L.) Pers), Kee-lek (Cassia siamea Lamk), Neamhuseu (Coleus amboinicus Lour), Krad (Spilanthes acmella Murr), Bon (Colocasia esculenta Sahott), Phai (Polygonum odoratum Lour), Wan (Melientha suavis picrre), Tew Khoaw (Cratoxylum Formosum Dyer), Chi nam (Oenanthe stolonifera) were collected from north-eastern Thailand. The lipids were extracted by chloroform-methanol (2:1, v/v). Total lipid content was measured gravimetrically, fatty acid composition was analysed by gas liquid chromatography.

**Outcomes** - Total lipid content of the analyzed vegetables ranged from 0.14 of Bon to 2.33% (g/100g) of Kwinin. The 18:3n-3 content ranged from 4.9% in Koon up to 47.8% (% total fatty acid) in Kare. The 18:2n-6 content ranged from 13% of Wan to 45% of Bon. Another main fatty acid was 16:0, which ranged from 15.4% of Chi farang to 37.2% of Neamhuseu.

**Conclusions** - The present results indicate that wild Thai vegetables are good sources for 18:3n-3, and that consumption of wild Thai vegetables could contribute to 18:3n-3 intake, especially in vegetarians.

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**Omega-3 PUFA status in type 2 diabetes mellitus patients, a case-control study**

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**Background** - Controlled clinical studies have shown that consumption of n-3 polyunsaturated fatty acids (PUFA) have protective effects on cardiovascular risk factors in patients with type 2 diabetes mellitus (T2DM) without adverse effects on insulin activity and glucose control.¹

**Objective** - To investigate the plasma phospholipid (PL) n-3 PUFA status in T2DM patients, and age and sex matched healthy controls.

**Design** - Seventy-four T2DM in-patients from 2nd Affiliated Hospital of Medical School, Zhejiang University, and 72 age and sex matched healthy controls from Hangzhou were participated the study. Plasma PL fatty acids were analyzed with capillary gas chromatography. Plasma lipids were measured by enzymatic assay. Homeostasis model assessment (HOMA-IR) was applied to assess the status of insulin resistance (IR).

**Outcomes** - Plasma PL n-3 PUFA in T2DM group (% of total fatty acid) were significantly lower than in healthy control group, however, monounsaturated fatty acid (MUFA) and n-6 PUFA were higher than those of normal control group (P <0.05). Bivariate correlate showed that fasting plasma glucose was negatively correlated with C20:2n-6 (P <0.05), HbA1c was negatively correlated with 20:2n-6 and 20:3n-6 (P <0.05). HOMA-IR was significantly positively correlated with C16:0, BMI, serum total cholesterol, triacylglycerol and LDL-cholesterol, and negatively correlated with HDL-C (P <0.05).

**Conclusions** - T2DM in-patients had a lower plasma PL n-3 PUFA levels compared with sex and age matched healthy control group.

**References**