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**LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH**

Judul Artikel Ilmiah : **Effect of Vit A, Zinc and Vit E Supplementation on Immune Response Seropositive Leprosy Subject**
 Nama semua penulis : M Zen Rahfiludin, Adriyan Pramono, (koresponding), Onny Setiani
 Status Pengusul (coret yg tidak perlu) : ~~Penulis Utama/ Penulis Utama & Korespondensi/ Penulis Korespondensi/ Penulis Anggota~~

Status Jurnal:

- Nama Jurnal : **Pakistan Journal of Nutrition**
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- Terindex di : Scopus Q4 SJR 2019 : 0,172

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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-rata /Nilai Akhir yang diperoleh
	Reviewer I	Reviewer II	
a. Kelengkapan unsur isi jurnal (10%)	3	3	3
b. Ruang lingkup dan kedalaman pembahasan (30%)	9	9	9
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9	9	9
d. Kelengkapan unsur dan kualitas penerbit (30%)	8,75	9	8,875
Total = (100%)	29,75	30	29,875
Nilai pengusul = 40% x = 29,875 = 11,95			

Reviewer 1



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Reviewer 2



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a	Kelengkapan unsur isi artikel (10 %)	3	3
b	Ruang lingkup & kedalaman pembahasan (30 %)	9	9
c	Kecukupan dan kemutahiran data/informasi dan metodologi (30 %)	9	9
d	Kelengkapan unsur dan kualitas jurnal (30%)	9	8,75
	Nilai Total	30	29,75
	Nilai yang didapat pengusul: $29,75 \times 0,4 = 11,9$		

Catatan Penilaian artikel oleh Reviewer

a	Kelengkapan unsur isi artikel	Unsur artikel lengkap, telah memenuhi kaidah penulisan artikel dalam jurnal ilmiah dan telah memenuhi gaya selingkung jurnal
b	Ruang lingkup & kedalaman pembahasan	Artikel membahas efek suplementasi 3 macam micronutrient (Vit A, Zn dan Vit E) terhadap respon imun pada penderita kusta. Pembahasan mendalam dengan indicator biokimia yang representative dan ditunjang referensi yang memadai
c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data mutakhir dihasilkan dari penelitian dengan design experimental (randomized trial). Kelemahan penelitian ini tidak dilakukan blinding intervensi dengan human subject tidak disertai riqiester trial sesuai consurt
d	Kelengkapan unsur dan kualitas jurnal	Diterbitkan pada jurnal Pakistan Journal of Nutrition. Similarity index 16%

Surabaya, 5 Maret 2020

Reviewer 1



Prof. Dr. Sri Sumarmi, S.KM., M.Si

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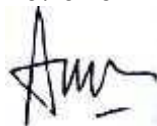
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b	Ruang lingkup & kedalaman pembahasan (30 %)	9	9
c	Kecukupan dan kemutahiran data/informasi dan metodologi (30 %)	9	9
d	Kelengkapan unsur dan kualitas jurnal (30%)	9	9
	Nilai Total	30	30
	Nilai yang didapat pengusul: 30 x 0,4 = 12		

Catatan Penilaian artikel oleh Reviewer

a	Kelengkapan unsur isi artikel	Telah sesuai dengan “Guide for Author” substansi artikel telah sesuai dengan bidang ilmu pengusul yaitu “Ilmu Gizi Kesehatan Masyarakat”. Telah ada benang merah pada struktur penulisan pengusul.
b	Ruang lingkup & kedalaman pembahasan	Substansi artikel telah sesuai dengan ruang lingkup “Pakistan Journal of Nutrition”. Kedalaman pembahasan telah melibatkan semua rujukan (18 jurnal) dalam melakukan analisis yang tertuang dalam pembahasannya.
c	Kecukupan dan kemutahiran data/informasi dan metodologi	Data hasil penelitian menunjukkan data kebaruan informasi sehingga dapat ditarik Kesimpulan yang dapat dipertanggung jawabkan.
d	Kelengkapan unsur dan kualitas jurnal	Pakistan Journal of Nutrition adalah jurnal internasional diterbitkan oleh Asian Network for Scientific Information

Surabaya 6 Maret 2020

Reviewer 2



Prof. Dr. Merryana Adriani, S.KM., M.KesNIP

195905171994032001

Unit kerja : Fakultas Kesehatan Masyarakat Universitas Airlangga



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[Pakistan Journal of Nutrition](#)
Volume 15, Issue 1, 2016, Pages 40-44

Effect of vitamin A, zinc and vitamin E supplementation on immune response in seropositive leprosy subjects (Article) [\(Open Access\)](#)

[Rahfiludin, M.Z.^a](#), [Pramono, A.^b](#), [Setiani, O.^a](#)

[Save all to author list](#)

^aDiponegoro University, Indonesia

^bDepartment of Nutrition, Center of Nutrition Research (CENURE), Diponegoro University, Indonesia

Abstract

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The immune response plays an important role in leprosy prevention. Here we analyzed the effect of vitamin A, zinc and vitamin E supplementation on the immune response in seropositive leprosy patients by measuring serum levels of retinol, zinc, α -tocopherol, interferon gamma (IFN- γ) and interleukin-2 (IL-2). Subjects were randomly divided into either the treatment or control group. The treatment group received high dose vitamin A once and a daily dose of Zn and vitamin E supplementation for 45 days, while the control group received pills that were identical in appearance but lacked supplements. Supplement consumption compliance was recorded weekly. After 45 days of supplementation, IFN- γ and IL-2 levels were measured again. Upon study initiation both groups had normal retinol, zinc and α -tocopherol serum levels. After 45 days, serum levels of retinol and α -tocopherol increased only in the supplementation group ($p = 0.046$ and $p = 0.033$, respectively), while zinc serum levels decreased in both the supplementation ($p = 0.001$) and placebo ($p = 0.000$) groups. IFN- γ levels decreased slightly in the supplementation group, although the change was not significant ($p = 0.098$). Meanwhile, IFN- γ levels in the control group decreased significantly ($p = 0.022$). IL-2 levels decreased slightly in both the supplementation and placebo groups, but the changes were not significant ($p = 0.421$ and $p = 0.556$, respectively). Together our results indicate that supplementation with zinc and vitamins A and E could be a useful alternative therapy for maintaining immune response of seropositive leprosy patients. © Asian Network for Scientific Information, 2016.

SciVal Topic Prominence ⓘ

Topic: Leprosy | Mycobacterium Leprae | Malondialdehyde

Prominence percentile: 7.376 ⓘ

Author keywords

[IL-2](#) [Interferon- \$\gamma\$](#) [Leprosy seropositive](#) [Vitamin A](#) [Vitamin E](#) [Zinc](#)

Indexed keywords

EMTREE drug terms: [alpha tocopherol](#) [gamma interferon](#) [interleukin 2](#) [placebo](#) [retinol](#) [zinc](#)

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Correlation of zinc plasma and IgM anti-PGL-1 levels among close contact of leprosy

Rahfiludin, M.Z. , Ginandjar, P. , Pangestuti, D.R. (2012) *Medical Journal of Indonesia*

Saliva as a diagnostic tool for measurement of total antioxidant capacity in children with leprosy and born to leprosy parent

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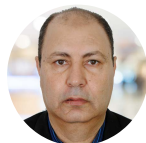
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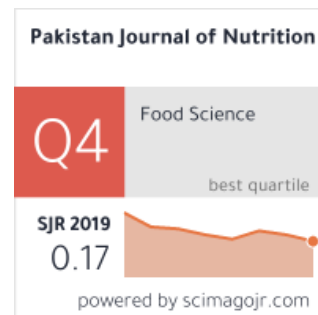
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Effects of Green Tea and Curcumin on Non-Enzymatic Antioxidants in Normal Mice

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Pakistan Journal of Nutrition Volume 15, Number 1, 1-8, 2016

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Feeding Value of Raw or Enzyme Treated Dandelion Leaves and Fenugreek Seeds Alone or in Combination in Meat Type Chicken

Saim Qureshi, M.T. Banday, Irfan Shakeel and S. Adil

Pakistan Journal of Nutrition Volume 15, Number 1, 9-14, 2016

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Alterations in Serum Biochemical Parameters in Response to Gasoline Inhalation and the Protective Effects of Green Tea and Curcumin

Ata Sedik Ibrahim Elsayed

Pakistan Journal of Nutrition Volume 15, Number 1, 15-22, 2016

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Physicochemical Properties and Mineral Compositions of Pawpaw and Watermelon Seed Oils

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Characteristics of Ettawa Crossbred Dairy Goat Rumen Fluid and Digestibility of Palm Oil Industry By-Products

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Nutrient Contents of the Fresh Pulps and Dried Pulp Cakes of *Vitellaria paradoxa* of Gulu District, Uganda

Christine Oryema, Hannington Oryem-Origa and Nanna Roos

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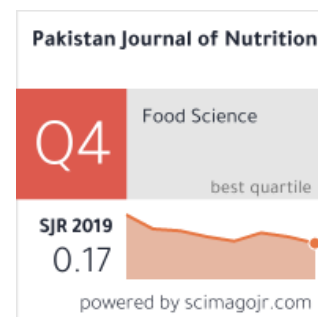
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Use of Lignin Formacell of Empty Bunch Palm Fiber as Feed Supplement and Prebiotics Candidate in Ruminant

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Study of Sensory Characteristics and Nutrient Content of Catfish and Tempeh-Based Drumstick as an Alternative Food for Children with Autism

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Correlation Between Matrix Metalloproteinase 8 in Gingival Crevicular Fluid and Zinc Consumption

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Sri Rahayu, Mohamad Yamin, Cece Sumantri and Dewi Apri Astuti

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Concentrations of Fluoride in Drinking Water and Tea Samples and Associations with Dental Fluorosis

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Effects of Green Tea and Curcumin on Non-Enzymatic Antioxidants in Normal Mice

Ata Sedik Ibrahim Elsayed

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Abstract: Flavonoids have been found to play important roles in the non-enzymatic protection against oxidative stress, especially in case of cancer. Flavonoids are group of polyphenolic compounds that occur widely in fruit, vegetables, tea, cocoas and red wine. Flavonoids, including flavones, flavanone, flavonols, flavanols and isoflavones, are polyphenolic compounds which are widespread in foods and beverages and possess a wide range of biological activities, of which antioxidation has been extensively explored. This study aimed to investigate the protective and the ameliorative role of some natural products on non-enzymatic antioxidants. Green tea extract and powdered curcumin were chosen as antioxidant natural products. CD1 mice were taken as experimental model. Green tea extract was provided to mice as their sole source of drinking water and powdered curcumin was added to the diet, these were taken for four weeks. Total thiol, protein-bound thiol and nonprotein-bound thiol, were measured in brain tissue homogenate as non-enzymatic antioxidant. The results of the study concluded that, green tea extract and curcumin addition to diet ameliorate and increase the concentration of non-enzymatic antioxidants, specially protein-bound thiol.

Key words: Green tea, curcumin, non-enzymatic antioxidant

INTRODUCTION

Herbal medicines derived from plant extracts are being increasingly utilized to treat a wide variety of clinical disease (Gupta *et al.*, 2004). More attention has been paid to the protective effects of natural antioxidants against drug-induced toxicities especially whenever free radical generation is involved (Frei and Higdon, 2003). Flavonoids have been found to play important roles in the non-enzymatic protection against oxidative stress (Okada *et al.*, 2001; Babich *et al.*, 2005), especially in case of cancer. Flavonoids are group of polyphenolic compounds that occur widely in fruit, vegetables, tea, cocoas and red wine (Arts *et al.*, 1999; Bearden *et al.*, 2000; Matito *et al.*, 2003). Flavonoids, including flavones, flavanone, flavonols, flavanols and isoflavones, are polyphenolic compounds which are widespread in foods and beverages and possess a wide range of biological activities (Harborne and Williams, 2000), of which antioxidation has been extensively explored (Bors *et al.*, 1994; Terao *et al.*, 1994; Ioku *et al.*, 1995; Croft, 1998; Pietta, 2000; McPhail *et al.*, 2003; Goupy *et al.*, 2003; Vaya *et al.*, 2003).

The addition of green tea catechins to plasma (Lotito and Fraga, 2000) or LDL (Zhu *et al.*, 1999) resulted in sparing of endogenous α -tocopherol during *in vitro* oxidation. In hypercholesterolemic rabbits, green and black tea administration increased plasma α -tocopherol concentrations after 8 and 17 weeks of tea administration but not after 21 weeks (Tijburg *et al.*, 1997). The total plasma antioxidant capacity was not affected by green or black tea administration over the

21-weeks study period. In rats, administration of green tea catechins prevented decreases in plasma and erythrocyte α -tocopherol concentrations resulting from a diet high in polyunsaturated fatty acids (Nanjo *et al.*, 1993), but green tea flavonoid administration to marginally vitamin C-deficient Osteogenic Disorder Shionogi (ODS) rats did not increase plasma α -tocopherol concentrations (Kasaoka *et al.*, 2002). Intake of green tea catechins for 4 weeks found to elevate vitamin E level in the mucosa of the rat large intestine (Yamamoto *et al.*, 2006).

Tea administration prevented decreases in tissue glutathione (GSH) concentrations in many animal studies. Consumption of black tea leaves prevented carbon tetrachloride-induced liver depletion of GSH in male rats, but not in female (Sur-Altiner and Yenice, 2000). Similarly, providing green tea extract in the drinking water of male rats prevented decreases in liver GSH concentrations induced by ethanol administration (Skrzydewska *et al.*, 2002b). In mice infected with *Mycobacterium tuberculosis*, oral administration of green tea extract attenuated decreases in erythrocyte GSH concentrations caused by the infection (Guleria *et al.*, 2002).

On the other hand, green tea does not only exert its antioxidant properties by polyphenols, L-theanine is the primary amino acid in green tea and represents 1-2% of the leaf dry weight, it is synthesized in the roots of green tea and is concentrated in the leaves. L-theanine chemical structure is similar to glutamic acid, the latest is a precursor of GSH. Studies have shown that

Physicochemical Properties and Mineral Compositions of Pawpaw and Watermelon Seed Oils

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Abstract: The physicochemical properties and mineral contents of ripe and unripe pawpaw and water melon seed oils were evaluated. The physicochemical evaluation showed that the oils have low saponification, low iodine, low peroxide and low acid values. These values indicated that the oils have good commercial values and uses apart from their nutritional values and can also be stored for a long period of time. The assay of mineral contents also showed that the oils contained useful macro and micro nutrients especially high amount of phosphorous which suggests that it can be used to treat hypophosphatemia. The ripe and unripe seed oils have almost the same physicochemical properties which suggest that the oil can be harvested when the pawpaw is ripe or otherwise. The three seed oils have more long chain saturated fatty acid (moderate saponification value) which makes them good oils for soap making. Also their calorific values are high enough to make them a good source of bio-fuels. The oils should be evaluated for toxicological effect before it is recommended for human consumption and its melting point and flash point also be evaluated to know its grade as a biofuel.

Key words: Watermelon seed, Pawpaw seed, seed oil, physicochemical, mineral composition, nutritional values

INTRODUCTION

Watermelon, *Citrullus lanatus* belonging to the family Cucurbitaceae is a vine-like flowering plant usually green with dark green stripes or yellow spots and a juicy, sweet interior flesh, usually deep red to pink, but sometimes orange, yellow, or white, with many seeds. The seeds have a nutty flavor and can be dried and roasted. The seeds also have a much higher food value than the flesh and have a significant amount of vitamin C; minerals, fat, starch and riboflavin. They can be dried, roasted and eaten as such or ground into flour to make bread. The seed contains a high percentage of oil which is similar to pumpkin seed oil and can be used in cooking (Moldenke and Moldenke, 1952). The increasing cost of fossil fuels coupled with the rising desire to cut down on the release of greenhouse gases into the atmosphere has resulted to the growth in the production of biodiesel which is principally fatty acid methyl esters (Hassan *et al.*, 2013). The seed oil of watermelon has an anthelmintic action which is better than that of pumpkin seed oil (Jackson, 1990). The seed oil consists of linoleic acid and unsaturated fatty acids. The predominant fatty acid in the oil was linoleic acid, oleic, palmitic and stearic acids, with Linolenic, palmitoleic and myristic acids as minor constituents (Hassan *et al.*, 2013). Other physicochemical properties of watermelon seed oil found in the literature are the refractive index, acid value, peroxide value, free fatty acids, saponification value and iodine value which were determined to be

1.4696 (25°C), 2.82 (mgKOH/g oil), 3.40 (mequiv oxygen/kg oil), 1.41 (% as oleic acid), 201 (mg KOH/g oil) and 115 (g iodine/100-g oil, respectively (Hassan *et al.*, 2013; El-Adawy and Taha, 2001 a, b).

Pawpaw, also known as *Carica papaya* is a perennial, fast-growing, semi-woody tropical herb. The seeds which represent a considerable amount of papaya fruit waste in processing units account for about 16% of the fresh fruit weight. Papaya seeds have the potential to produce 30 to 34% oil with nutritional and functional properties highly similar to olive oil. Besides, there is an excellent source of amino acid (about 24.91%), especially in the sarcotesta and fiber in the seeds (Saran *et al.*, 2013). However, the edibility of papaya seed oil has not been confirmed by previous studies. Papaya seed oil is a liquid with yellow color. It is suggested that the oil has potential for edibility and may possess some industrial uses as similar to the use of palmitic acid, oleic acid and linoleic acid. Moreover, papaya seed oil is steady against oxidation with vital antioxidant activity (Li *et al.*, 2015; Bouanga-Kalou *et al.*, 2011). Each seed is made up of sarcotesta and endosperm (Afolabi *et al.*, 2011; Puangsri *et al.*, 2005). The seeds are numerous, small, black, round and covered with gelatinous aril and have been confirmed in animals to have contraceptive, abortifacient capability, anthelmintic and anti-amoebic activities (Afolabi *et al.*, 2011; Okeniyi *et al.*, 2007; Oderinde *et al.*, 2002; Lohiya *et al.*, 2008). The seed has also been shown to be a



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