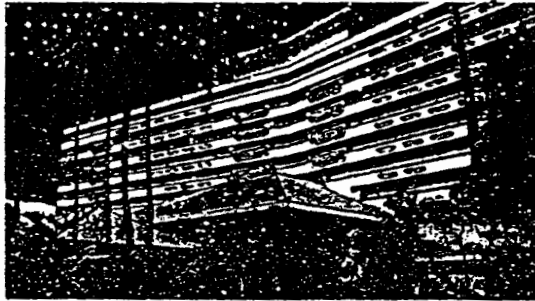


INTERNATIONAL CONFERENCE, EXHIBITION & SHORT COURSE ON

# NUTRACEUTICALS & FUNCTIONAL FOODS

Inna Grand Ball Beach  
Bali Indonesia  
October 11-15, 2010



SHORT COURSE:  
MON-TUE, OCTOBER 11th - 12th, 2010

CONFERENCE:  
TUE-FRI, 12th - 15th, 2010



Indonesian Agency for Agricultural Extension  
and Consultant Ministry of Agriculture



International Society for  
Nutraceutical and Functional Foods



International Society  
of Nutritional Food Effects

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**Budi Santoso**, The State Papua University (UNIPA) (Indonesia)



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P46. "KESEMEK JUNGGO" AS EXOTIC FRUIT FOR NUTRITION SOURCE

**Baswarsiati dan Yuniarti** – BALAI PENGKAJIAN TEKNOLOGI PERTANIAN  
JAWA TIMUR (Assessment Institute for Agricultural East Java), Jl. Raya Karangploso,  
Km-4, Malang

One of the exotic fruit from Batu, East Java is persimmon (*Diospyros kaki*, L.) or Persik fruit. Persimmon from this area is known as "Kesemek-Junggo". This fruit has better nutrition than watermelon and apple, especially on vitamin A and C content. Nutrition content of 100 gram of persimmon are 78 calorie, water 80 gram, protein 0.8 gram, fat 0.4 gram, carbohydrate 19.6 gram, calcium 6 mg, phosphor 26 mg, vitamin A 2710 IU, sugar 22.7 – 33.2%, acid 0.07-0.09%, vitamin C 10.31-11.86 mg and tannin 3.85 – 3.95 mg. Persimmon fruit is useful for health, this fruit can be used for controlling high pressure-blood. Because this fruit has high tannin content, there fore it has diuretic effect, which can take the toxin outside the body. Tannin also rolled as anti-bacteria and anti-virus. "Kesemek Junggo" has superior characters i.e. fruit skin appearance is attractive orange at the optimum maturity and red-orange while its' ripe with soft texture. Weight of fruit around 170 – 210 gram, taste of the flesh sweet and crispy, water content is sufficient and the storage life more than 14 days. This "Kesemek Junggo" has already been exported to overseas, such as to Singapore and Thailand. Unfortunately, so far its' big potency has not been known by the consumer yet, so that their market share in Indonesia still low and this fruit is defeated by the import fruit. The promotion of this fruit in order to disseminate their high nutrition content and the benefit for health is needed to be done. This fruit can be consumed as fresh or processed fruit, such as puree, ice cream, jam, jelly, dried fruit, etc. Research which were done on "Kesemek Junggo" from Batu and persimmon from Tirtoyudo, Malang showed, that "Kesemek Junggo" has higher nutrition content than those of persimmon from Tirtoyudo, Malang.

P47. THE DIURETIC ACTIVITY OF AVOCADO LEAVES ETHANOL EXTRACT (*PERSEA AMERICANA* MILL.) ON RATS

**Bayu Febram Prasetyo<sup>1</sup>, Ietje Wientarsih<sup>2</sup>, Rini Madyastuti<sup>2</sup>, Andi Citra A<sup>3</sup>** – Bogor  
Agricultural University, Indonesia

The aim of this research is to study the influence of avocado leaves ethanol extract on diuretic activity and the active substance of avocado leaves simplysia. The active substance of avocado leaves are flavonoide, tanine, and quinon. Twenty five Sprague dawley male rats were divided into five groups, each group was composed of aquadest as normal, furosemide as positive control, dose of avocado leaves ethanol extract 100 mg/kg bw, dose of avocado leaves ethanol extract 200 mg/kg bw, and dose of avocado leaves ethanol extract 300 mg/kg bw. Lipschitz method with was used in this research by orally administration (dose for each groups 1 ml/100g bw). The diuretic activity was monitored by excretion of urine total volume in 24 hours. Diuretic activity increase was observed on the giving of avocado leaves ethanol extract. The dose of avocado leaves ethanol extract 100 mg/kg bw was the most optimum diuretic activity. The increasing of dose of avocado leaves ethanol extract does not show a better result. Based on this result, it assumed that the avocado leaves ethanol extract could increases the diuretic activity.



### ABSTRACT

The aim of this research is to study the influence of avocado leaves ethanol extract on diuretic activity and the active substance of avocado leaves simplysia. The active substance of avocado leaves are flavonoids, tannin, and saponin. Fifty five Sprague dawley male rats were divided into five groups, each group was composed of aquades as normal, furosemide as positive control, avocado leaves ethanol extract 100 mg/kg bw, dose of avocado leaves ethanol extract 200 mg/kg bw, and dose of avocado leaves ethanol extract 300 mg/kg bw. Lipschitz method with was used in this research by orally administration (dose for each groups 1 ml/100g bw). The diuretic activity was monitored by excretion of urine total volume in 24 hours. Diuretic activity increases was observed on the giving of avocado leaves ethanol extract. The dose of avocado leaves ethanol extract 100 mg/kg bw was the most optimum diuretic activity. The increasing of dose of avocado leaves ethanol extract does not give a better result. Based on this result, it assumed that the avocado leaves ethanol extract could increases the diuretic activity.

### INTRODUCTION

Medicinal plants can be important sources of unknown chemical substances with potential therapeutic effects. Besides, the World Health Organization has estimated that over 75% of the world's population still relies on plant-derived medicines, usually obtained from traditional healers, for basic health-care needs. *Persea americana* Mill., family of Lauraceae. The plant is known to possess varied medicinal properties. The seeds are analgesic and antihyperlipemia; the leaves are antihypertension, antiviral and antidiuretic. According to previous ethnopharmacological survey carried out, leaves of *Persea americana* Mill. were largely used for the treatment of hypertension but no previous pharmacological or clinical study was carried out to test the diuretic activity of this plant. Since the diuretic effect of *Persea americana* Mill. has never been experimentally confirmed, the main aim of the present investigation was to evaluate the diuretic activity in rats.

### MATERIAL AND METHODS

#### Preparation of ethanol extract Avocado Leaves:

The leaves of *Persea americana* Mill. were collected from the BALITRO-BOGOR. The fresh leaves were washed in a running water and divided leaves into 6 parts at least. The leaves were dried in a hot air oven at 20 hours. After that, the leaves were ground into powder and stored in airtight container for 24 hours.

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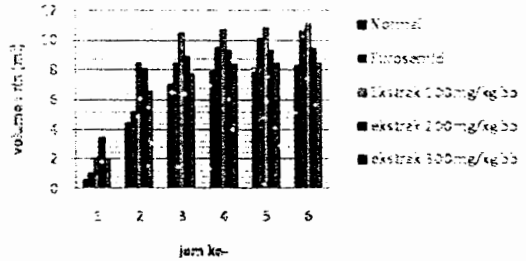
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### RESULTS AND DISCUSSION



Present study shows that Percentage of leaved volume of urine for 24 hours against the loading dose is given, respectively by 105.4% to P2, P3 amounted to 111.0%, amounting to 82.9% P4, P5 at 79.8%, while the P1 as a negative control by 82.8%. From these results showed that P3 has a percentage of the total volume of urine is released for 24 hours was higher than other treatments. The dose can produce urine volume greater than a given number of loading dose and was higher than furosemide as diureticum.

### CONCLUSION

Based on the total volume of urine is released in 24 hours, we suggest that ethanol extract of Avocado leaves dose 100 mg/kgbw has benefit in promote urine output.

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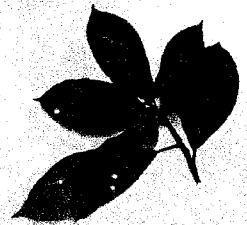
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BALI, INDONESIA 11 - 15 October 2010

The Diuretic Activity of Avocado Leaves Ethanol Extract (*Persea americana* Mill.) on Rats  
 Bayu Febram Prasetyo<sup>(1)</sup>, Ietje Wientarsh<sup>(2)</sup>, Rini Madyastuti<sup>(2)</sup>

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**ABSTRACT**

The aim of this research is to study the influence of avocado leaves ethanol extract on diuretic activity and the active substance of avocado leaves simplisia. The active substance of avocado leaves are flavonoids, tannins, and saponins. Fifty five Sprague dawley male rats were divided into five groups, each group was composed of aquades as normal, furosemide as positive control, and avocado leaves ethanol extract 100 mg/kg bw, dose of avocado leaves ethanol extract 200 mg/kg bw, and dose of avocado leaves ethanol extract 300 mg/kg bw. Lipschitz method with was used in this research by orally administration (dose for each groups 1 ml/100g bw). The diuretic activity was monitored by excretion of urine total volume in 24 hours. Diuretic activity increases was observed on the giving of avocado leaves ethanol extract. The dose of avocado leaves ethanol extract 100 mg/kg bw was the most optimum diuretic activity. The increasing of dose of avocado leaves ethanol extract does not give a better result. Based on this result, it assumed that the avocado leaves ethanol extract could increases the diuretic activity.

**INTRODUCTION**

Medicinal plants can be important sources of unknown chemical substances with potential therapeutic effects. Besides, the World Health Organization has estimated that over 75% of the world's population still relies on plant-derived medicines, usually obtained from traditional healers, for basic health-care needs<sup>1</sup>. *Persea americana* Mill., family of Lauraceae. The plant is known to possess varied medicinal properties. The seeds are analgesic and antihyperglycemic; the leaves are antihypertension, antiviral and antidiuretic. According to previous ethnopharmacological survey carried out, leaves of *Persea americana* Mill. were largely used for the treatment of hypertension but no previous pharmacological or clinical study was carried out to test the diuretic activity of this plant. Since the diuretic effect of *Persea americana* Mill. has never been experimentally confirmed, the main aim of the present investigation was to evaluate the diuretic activity in rats.

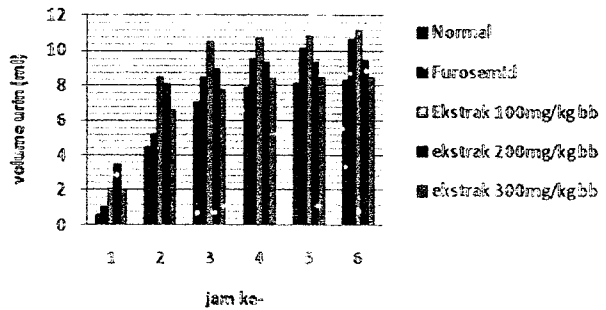
**MATERIAL AND METHODE METHODS**

**Preparation of ethanol extract Avocado Leaves:**

The leaves of *Persea americana* Mill. were collected from the BALITRO-BCCOR. The fresh leaves were washed in a running water and divided into five equal parts to form five groups. Each group was dried in a hot air oven at 40°C for 24 hours. After drying, the leaves were crushed into a fine powder and passed through a 40 mesh sieve. The powder was then extracted with 70% ethanol for 24 hours. The extract was then filtered and concentrated under reduced pressure to a volume of 200 ml. The extract was then divided into 5 groups.

Group 1 (P1) was given aquades as normal. Group 2 (P2) was given furosemide as control treated with furosemide 10 mg/kg bw. Group 3 (P3) was given avocado leaves ethanol extract 100 mg/kg bw. Group 4 (P4) was given avocado leaves ethanol extract 200 mg/kg bw. Group 5 (P5) was given avocado leaves ethanol extract 300 mg/kg bw. Before treatment, the rats were fasted for 12 hours. The diuretic activity was measured by Lipschitz method. The rats were placed in a metabolic cage and given 50 ml of warm distilled water. The rats were then given the treatment with a dose of 1 ml/100g bw. Observations were done on urine volume released in 24 hours and the pH of urine was also measured. The rats were then placed in a metabolic cage and the urine collected in a glass jar for 24 hours.

**RESULTS AND DISCUSSION**



Present study shows that Percentages of issued volume of urine for 24 hours against the loading dose is given, respectively by 105.4% to P2, P3 amounted to 111.0%, amounting to 92.9% P4, P5 at 79.6%, while the P1 as a negative control by 82.6%. From these results showed that P3 has a percentage of the total volume of urine is released for 24 hours was higher than other treatments. The dose can produce urine volume greater than a given number of loading dose and was higher than furosemide as diureticum.

**CONCLUSION**

Based on the total volume of urine is released in 24 hours, we suggest that ethanol extract of Avocado leaves dose 100 mg/kgbb has benefit in promote urine output.

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