



# ANTIOXIDANT ACTIVITY OF TAMARIND PULP (*Tamarindus indica* L.) EXTRACT IN METHANOL COMPARED TO EXTRACT IN WATER USING DPPH (1,1-Diphenyl-2-Picryl Hydrazyl)

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## ABSTRACT

Now a day, there is a strong demand in public to replace syntetic antioxidant by natural ones. Usually, Tamarind pulp (*Tamarindus indica* L.) is added as a flavor in culinary, fresh drink and snack, also available from traditional to modern market. In order to find a natural antioxidant, a simple methode using DPPH (1,1-Diphenyl-2-Picryl Hydrazyl) was carried out qualitatively and quantitatively on testing antioxidant activity of Tamarind pulp extract in methanol compare to extract in water. The violet colour of DPPH (1,1-Diphenyl-2-Picryl Hydrazyl) fades after the addition of extract indicated the antioxidant activity. Quantitative analysis was done by visible spectrophotometry at maximum wavelength 516 nm. The result showed antioxidant activity of Tamarind pulp extract in methanol by  $EC_{50} = 5650,31$  ppm and extract in water by  $EC_{50} = 15043,22$  ppm

**Keywords :** antioxidant activity, extract in methanol, extract in water, tamarind pulp (*Tamarindus indica* L.), DPPH

## INTRODUCTION

Consuming antioxidant is the simple way to prevent body cells from damages caused by free radicals. Vitamin E, C,  $\beta$  Carotene are potential antioxidant. Synthetic antioxidant which are used in many food and drink industry are *butylatedhydroxytoluene* (BHT) and *butylatedhydroxyanisole* (BHA). Some research proved these substances are carcinogenic agent. Recently, there is a strong tendency in searching a natural antioxidant because of their safety. According to a research of one cosmetic industry in Swiss, Unitamuron H-22 which contains tamarind seed's extract with polysaccharide inside, showed immunostimulant potency (Hernani dan Mono Rahardjo, 2005; Gormley & Lieberman, 2005). Strickland et al showed galactoxiloglican from tamarind seed is a molcul with a signal function to avoid cell damages from environment influences like UV radiation or other destroyer factors. A natural antioxidant was isolated and identified has a similar function with  $\alpha$ -tocopherol (Induchem, 2007). In line with this report, research on antioxidant activity of tamarind pulp (*Tamarindus indica* L.) extract which is usually added as a flavor in culinary, fresh drink, and snacks will be done by using DPPH (1,1-Diphenyl-2-Picryl Hydrazyl).

## MATERIAL AND METHODS

Before extracting with methanol or water by kinetic maseration, tamarind pulp (*Tamarindus indica* L.) from Desa Tulungagung Kecamatan Baureno, Bojonegoro, Jawa Timur, was preliminary dried.

The next step is preparing a methanol solution of extract to detect antioxidant activity by adding DPPH solution. The violet colour of DPPH (1,1-Diphenyl-2-Picryl Hydrazyl) fades after the addition of extract indicated the antioxidant activity. Quantitative analysis