The Effect of Diets Varying in Curcuma (*Curcuma xanthorrhiza* Roxb) on Blood Plasma LDL-peroxidation in Rabbits

Ietje Wientarsih[a] and Udo ter Meulen[b]
[a]Faculty of Veterinary Medicine, Department of Physiology and Pharmacology, IPB, Bogor, Indonesia
[b]Institute of Animal Physiology and Nutrition, Georg-August University, 37077 Goettingen, Germany,

INTRODUCTION

Fat in food has attracted much attention, due to the concern of the people diet towards their health. Fat is believed to the cause of atherosclerosis and cardiovascular diseases (Carpenter, 1995).

In developed countries, the cardiovascular disease is the first cause of death among middle aged people (Stein, 1994). The death rate due to this disease is also increasing in developing countries, probably related to changes in lifestyle and food eaten. These ranges from traditional foods with contain carbohydrates, vegetables and fibers, to foods which are high in protein, fat, sugar and salt but lack fiber. High lipid food sources are eggs, nuts, avocado, seeds, fresh meat and fish (Food and Drug Administration, 1985).

The death rate due to this disease is also increasing in developing countries. In 1972, cardiovascular disease was the eleventh cause of death in Indonesia but then rose to a third in 1986 and became the first in 1992, causing 16 per cent of the total deaths. In 1995, this had increased to 24 (Sumantri 1995).

Hypercholesteromia has received attention as a risk factor for the development of coronary heart disease (Connor and Connor 1994). It is important to decrease excess levels of cholesterol to amounts consistent with the maintenance of normal body functions in order to reduce the risk of atherosclerosis development.

The concentration of plasma cholesterol can be regulated via manipulation of lipid metabolism, the absorption of dietary cholesterol and the excretion of lipid through faeces. Researchers have developed effective plasma cholesterol-lowering agents with some of the drugs commonly used being lovastatin, pravastatin and simvastatin (Lee *et al* 1999).

Pharmaceutical drugs are seen increasingly as being over-prescribed, expensive and even dangerous (Snider 1991). Herbal remedies are less expensive and less toxic and many people especially those with chronic illnesses such as high cholesterol, atherosclerosis, rheumatism, tumors and hepatitis are turning to herbs as adjuncts to other treatments.

In Indonesia, women have long used curcuma to guard against becoming fat. It is believed that curcuma has properties that are antilipid deposition (Subba *et al* 1972). However, this is based on empirical evidence and there is a dearth of information on how it works. Curcuma is used more as a spice than a drug, but some people use this mixture of herbs as medicine. Curcuma has been found to have anti-inflammatory, anti-infectious and anti-tumor properties (Allen *et al* 1998).

This study was set up to evaluate the effect of inclusion of curcuma in rabbit diets on lipid metabolism as well as LDL-peroxidation. Rabbits were chosen as a model monogastric animal.

ISBN No. 978-979-25-1207-6