Potency of Pegagan (*Centella asiatica*) as Braintonic to Improve Intelligence of Young Generations in Indonesia

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Abstract

Pegagan (*Centella asiatica*) is a small herbaceous plant belongs to the family *Mackinlayaceae* or the subfamily *Mackinlayoideae* of family *Apiaceae*. It is one of the indigenous crops from Indonesia. However, Indonesian people rarely use pegagan in their daily consumption. Only local community in West Java and Mataram consume pegagan as fresh vegetables or extract powder. It is believed that pegagan can modulate dendritic branching pattern, increase endogenous antioxidant enzymes, and increases the number of possible synaptic connections with the neurons. Those benefits had been observed by the improvement of learning and memory on the treated mice with pegagan. Pegagan acts as a powerful "brain food" and is known for its ability to enhance mental ability. Pegagan fits to be applied in Indonesia to solve human resources problem to develop school-age children and bring forward this nation. Previous studies show that daily consumption with pegagan brain tonic, also known as jamu, can improve memory ability on 50 years old adults with ratio 70% to 30%. Treatment during developmental stage of brain with pegagan extract can influence the neuronal morphology and promote the higher brain function of juvenile and young adult mice.

The stimulation of neurosecretory activity of the cholinergic neurons appears to be involved, but the exact mechanism of this nootropic effect still not understood. Because of the great potential to grow in Indonesia and as brain tonic, pegagan can be applied to improve intelligence of Indonesian community especially young generations through school-age children.

Introduction

Human resources development play important role in long term national development. If it is compared to other developing countries, Indonesia's human resources are still low and need to be improved to compete