# ABSTRACTS FOR POSTER PRESENTATION

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## Extraction Of *Zingiber Officinale* And *Zingiber Zerumbet* Essential Oil Using Turbo Extraction Distillation (Ted)

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**Abstract**

Ginger (*Zingiber officinale*) and *Zingiber zerumbet* are medicinal plants that come from *Zingiberaceae* family, which contain high quality of essential oil. Both of these plants are widely used traditionally as an ailment and loss of appetite. In recent research the phytochemical component in both plants has been found to possess many interesting pharmacological and physiological activities, such as anti-inflammatory, analgesic, and anti-obesity effects. In this study, the essential oil from the plants was extracted using Turbo Extractor Distillator (TED). TED is accelerated hydrodistillation that allows to increase the input quantity and reduce the distillation time. The result is a very fresh product which makes an ideal base for the production of natural extracts for use in flavours. The aim of this research is to use the *Zingiber officinale* and *Zingiber zerumbet* as raw material to produce highly active herbal extracts, which enhanced with active compounds in the larger scale processing platform. The extraction was done using different type of solvent that is 100% water and 30 % ethanol. The raw material to solvent ratio used is 1:5 and time is from 1 hour to 6 hours. For extraction using 100 % water, *Zingiber zerumbet* produce a high oil yield (0.3%-0.5%) than *Zingiber Offinale* (0.1%-0.3%). *Zingiber Offinale* produce high powder extract than *Zingiber zerumbet* for both types of solvent. From high performance liquid chromatography (HPLC) result, ginger powder extract from 100 % water show high 6-gingerol than oil or powder extract for 30% ethanol that is 24.8 µg/ml. For *Zingiber zerumbet*, the result shows that the essential oil contains more zerumbone than powder extract for both solvent. The production of herbal products in larger scale will ensure the supply chain in the increasing demand from herbal consumers. The huge demand is not only on a quantity basis, but also on herbal quality basis. The herbal quality is mainly focused on the content of bioactive marker besides nutritional composition.

**Keywords:** *Zingiber Officinale, Zingiber zerumbet*, 6-gingerol, zerumbone, Turbo Extractor Distillator (TED)