**UNIVERSITI TEKNOLOGI MARA (UiTM)**

# NUTRITIONAL AND ANTIOXIDANT PROPERTIES OF GENUS CURCUMA *(CURCUMA CAESIA AND CURCUMA LONGA)*

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# CHAPTER 1 – INTRODUCTION

## 1.1 Research Background

In the landscape of Malaysia, a wide range of herbal medicinal plants has been cultivated and cherished for generations. These indigenous botanicals have played a crucial role in traditional medicine. They are in trend to captivate the attention of scientific and health researchers to explore their rich health benefits and nutritional content. Herbal plants are also part of a growing trend for traditional medicine and dietary enhancement, not only in Malaysia but also in global trends. Traditional medicine sales climbed from RM1 billion to RM4.5 billion annually between 2000 and 2005 (Aziz et al., 2009). One of the most cutting-edge nutraceuticals is Curcuma longa (turmeric), a member of the Zingiberaceae family. In India and other Asian nations, it is extensively cultivated and used as a preservative, flavoring, and coloring agent. Its many health benefits are its anti-glycemic, antioxidant, anti-inflammatory, anti-carcinogenic, and antiviral qualities. Curcuma longa has been considered safe to use as a spice and seasoning for millennia (Ugo et al., 2022).

Turmeric is a family of herbaceous plants that includes several species, including Curcuma longa and Curcuma caesia (Zingiberaceae). Well-known for its illustrious cultural past, culinary uses, and possible therapeutic benefits, various forms of turmeric provide distinct phytochemical compositions and a range of applications. Although Curcuma longa, which is represented by black and yellow turmeric, has been studied in great detail, Curcuma caesia is still a fascinating species that needs more research. Malaysia offers a perfect environment for the research and development of these turmeric variations due to its favorable tropical climate. In comparison, there is an abundance of information on the general properties of turmeric, but a comprehensive analysis of the specific attributes of yellow and black turmeric, along with Curcuma caesia, in the Malaysian context is lacking. Existing studies have primarily focused on the generic properties of Curcuma longa, necessitating a targeted investigation into the unique qualities of these variants.

Malaysia also faces various nutrition and health challenges, including diet-related chronic diseases and dietary imbalances. Discovering and understanding more about black turmeric's nutritional properties and potential benefits may offer innovative solutions to address these challenges and improve public outcomes. Black turmeric may

sound the same as yellow turmeric and is categorized in the same family genus. Despite black turmeric being from the same genus, its distinct nutrient profile and bioactive compounds may offer unique advantages in dietary form, presenting an avenue for innovative solutions to address Malaysia's health challenges and enhance public well-being.

Collaborations between traditional practitioners, researchers, and health authorities could pave the way for a more holistic integration of this valuable plant into dietary recommendations, offering a broader perspective on herbal plant usage for enhanced nutrition in daily or overall dietary intake. By performing a thorough analysis of Malaysian yellow and black turmeric, this study seeks to close the current gap. The investigation will examine these components' nutritional composition and antioxidant activity, offering insightful information to scholars, professionals, and other interested parties concerning the many facets of turmeric.