The Future of Andrographis Paniculata Product Development

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Abstract

This study presents conceptual herbal product development in traditional and complementary medicine. The concept product came from Andrographispaniculata as main ingredients from review articles on previous studies; especially beneficial effects on the mechanism of actions and clinical investigations approved by respective authorities. A future product will cater demands-supply in society and industries; and as alternative medicine preventing from diseases or infection. Product development mainly focuses on the best quality of sensory evaluation and shelf life study. Finding will add up new dimensions of knowledge area, instead of bioactive compounds and biochemistry reactions which are already known. The concept product will be health in tea and tablet based on consumer acceptability and preferences.

Keywords

Andrographis paniculata; Herbs; Traditional; Complementary; Medicine

Introduction

Herb is a plant that has a smell, flavor and health properties. Herbal medicine products are dietary supplements used for maintaining health, physical appearance, weight loss, or continuing care. Herbs have been used since ancient times for health purposes. Since the last century, traditional medicine has played a significant role in providing health care to humans. Traditional and complementary medicine has become increasingly popular among the people for the purpose of healing illness and health care. The Malaysian government makes serious to develop this area as the country is rich in natural resources to be developed into a health product. Traditional and complementary medicine can be an important component in the country's health care system so that it will improve the health and quality of life of Malaysians in line with modern medicine.

Andrographis paniculata is a plant used for centuries in traditional medicine in Asia. It is stated to cleanse the circulatory system in the body. In modern medicine, it contains chemical compounds such as lactones, diterpenoids, diterpene glycosides, flavonoids and flavonoid glycosides. Clinical studies report that it is safe and efficient in reducing the symptoms of respiratory disorders. All parts of the plant and the roots are boiled, made into powder, either in combination with other drugs or otherwise and be extracted.

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Andrographis paniculata scientific report stating that it has anti-bacterial [1]. Greek medical system interprets it as a laxative, anti-inflammatory, emollient, astringent, diuretic, gastric and liver tonic, carminative, anthelmintic and antipyretic [2]. A decoction of fresh leaves can be given to babies to relieve griping; bowel habits are irregular, and loss of appetite [3-5]. And the leaves and roots are also used in general weakness, during convalescence after fever, and the digestive system disorders [4-5].

The development of the product from Andrographis paniculata started from the idea of concept to an acceptance and can be marketable. The concept product will be tea and tablet to cater the traditional and complementary medicine segment, which is in high demands. Knowledge of the target group, which needs an understanding of the target group, the particular of health focus, sensory evaluation of product and its characteristic, would be delivered to targeted group of society [6].

Materials and Methods
Production and formulation of the tablets will be done in collaboration with the small and medium industries company. The product will be tested for sensory evaluation to ensure the best reception by potential users. Sensory evaluation will be conducted on 80 panels in Food Sensory Laboratory, Department of Nutrition and Dietetics, UiTM Selangor. The 9-point hedonic scale used in the assessment. It is a measure of bipolar balanced around neutral in the center with four positive and four negative grades on each side. The category is characterized by the expression representing different classes and their affect label prepared separately by proposing a variety of single and dislikes [7]. Sensory acceptance will be carried out using a 9 point hedonic scale, and will be compared with the existing tablets available commercially, whether online or otherwise. All data will be analyzed using Statistical Package for Social Science (SPSS) version 18.0.

Results and Discussion
Food innovation depends on the needs of users who are constantly changing or due to advances in science and technology. It is intended to determine the active component in food from food sources that are believed to reduce the risk of health problems that will occur [8]. Progress in science and technology in the food product manufacturing system is aimed at boosting the development of new products, and those products should be beneficial to the human body. Table 1 showed different dosage and toxicity of Andrographis paniculata and its major natural product andrographolide had been done through experimental models such as human, mice, platelets and rats. Use plants that contain components including vitamin and antioxidant treatment to users switching to alternative medicine [9]. To ensure that this product will be easily accepted and tastes, it should be consists of a high health value and affordable to users who are in needs. Product acceptance and the tablet will be determined by perception and taste, flavor, texture [8] and the appearance, flavor, and packaging.

Andrographis paniculata plant that has been described as cold and bitter flavor, considered as an antipyretic, detoxicant, anti-inflammatory, and detumescent, and reliable way to

Figure 1: Proposed Andrographis paniculata herbal product development
get rid of "pathogenic heat" from the blood. *A. paniculata* is used for the treatment of pharyngolaryngitis, diarrhea, dysentery, and cough with thick sputum, carbuncle, scabies, and snakebites. The herbal compounds of *A. paniculata* also used to treat infectious and non-infectious diseases, purulent otitis media, neonatal subcutaneous annular ulcer, epidemic encephalitis B, herpes zoster, pelvic inflammation, vaginitis, cervical erosion, neurodermatitis, chickenpox, mumps, eczema, and burns [10].

Modern medicine also said *A. paniculata* working to prevent and treat the common cold. It has antithrombotic action, which showed benefit in the treatment and control of cardiovascular disease [11]. Also, figure 1 showed the proposed *Andrographis paniculata* herbal product development. Clinical and pharmacological studies suggest the potential for a beneficial effect in diseases such as cancer [12-17] and HIV infection [17].

**Implications and Directions for Traditional & Complementary Medicine**

*A. paniculata* showed a significant effect on blood pressure. Pharmacological studies suggest potential efficacy in the prevention of infarct size [19-20], to help maintain heart function [21], helps inhibit platelet aggregation [22] and attempts to prevent restenosis after balloon angioplasty [23, 24]. *A. paniculata* alcohol extract helps reduce serum triglyceride levels are very significant, and it is better than metformin treatment [25]. *A. paniculata* alcohol and water extract help increase the activity of antioxidant enzymes, the proposed mechanism as a potential mechanism of glucose lowering [12, 26].

**Conclusion**

The conceptual product development will be accepted by the consumer where they are most likely to like the aroma, flavor and the color of the A.paniculata tea and tablet. It will be a value-added for SME industries to play significant roles in Malaysian traditional and complementary medicine.

**Conflicts of Interests**

All authors have none to declare

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**References**


