MICPS2-015-PS

Antidiabetic Chewable Tablet Formulation of Tamarind Leaves (*Tamarindus Indica* L.) and Ajwa Date Seeds (*Phoenix dactylifera* L.) Extract Combination

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ABSTRACT

Tamarind leaves (*Tamarindus indica* L.) and ajwa date seeds (*Phoenix dactylifera* L.) have been widely used to treat diabetes mellitus. Many herbal medicines have been developed into good dosage forms, such as chewable tablets. This study aims to determine the anti-diabetic effect *in vivo* and determine the good formulation of anti-diabetic chewable tablets from tamarind leaves extract and ajwa date palm seeds extract combination. Tamarind leaves and ajwa date seeds extracts were extracted with 96% ethanol using maceration and soxhletation methods. Then, the compounds contained were screened phytochemically. Anti-diabetic effect of those extracts was treated in alloxan-induced mice (*Mus musculus*), using a pre and posttest controlled group design method with 2 control and 5 treatment groups. The groups were positive control (0.65 mg/kg glibenclamide), negative control (1% sodium-CMC), group A (280 mg/kg tamarind leaves extracts), group B (392 mg/kg date seeds extracts), group C (TLE:DSE, 75:25), group D (TLE:DSE, 50:50), and group E (TLE:DSE, 25:75). The decrease in glucose levels was observed every 60, 120, and 180 minutes. The highest effect group will be formulated as a chewable tablet by wet granulation method. Granules and tablets will be evaluated physically. The highest anti-diabetic effect group was in group C (TLE:DSE 75:25), with aa combined dose of 210 mg/kg and 98 mg/kg. The formula used in this study was considered good, as was the result of granule and tablet evaluation parameters. Tamarind leaves and ajwa date seeds extract combination have an anti-diabetic effect and they can be formulated into anti-diabetic chewable tablets.

Keywords: Ajwa date seeds, antidiabetic, chewable tablet, extract combination, tamarind leaves.