Bitter Melon, a Miracle Fruit To Control Diabetes: Its Cultivation and Selection of the High Yielding Varieties

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Diabetes is an epidemic in the United States. Mississippi is ranked third highest in diabetes. Bitter melon (Momordica charantia) is a popular plant used for treating diabetes- related conditions among populations. However, the cultivation and use of Bitter melon is lacking in US, especially in Mississippi. Charantin is a potential active substance found in bitter melon known to lower the blood glucose level. The purpose of my project was to grow different varieties of bitter melon and select the suitable high Charantin yielding variety/varieties for human health. Six different varieties (V1, V2, V3, V4, V5 and V6) of Bitter melon were grown from seeds. The fruits were collected at maturity and the morphological data such as fruit weight and fruit length for each variety was taken. The fruits were dried in a forced hot air dryer and powdered followed by methanolic extraction. The extract was further used for Thin Layer Chromatography (TLC) and colorometric testing including Libermann Burchard Test and potassium permanganate discoloration test. The data was analyzed using Microsoft Excel and graphs were made for comparison. The appearance of the violet color bands on TLC plate confirmed the presence of steroids that represents charantin in Bitter melon. For Libermann Burchard Test, presence of charantin is represented by dark violet/brown ring. Lowest amount of charantin was observed for higher number of drops for discoloration. Based on the observations and results, the varieties maximum in bitterness (V6 and V5) had the highest charantin content. It can be concluded that the most bitter melon fruit contains the high amount of charantin content. Therefore, may help in lowering the blood sugar levels in condition of diabetes.

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