عنوان مقاله:

Effect of ripening stages on secondary metabolites accumulation in Bitter gourd

محل انتشار:

سومین کنگره بین المللی و چهارمین همایش ملی زیست فناوری گیاهان دارویی و قارچهای کوهی (مجازی) (سال: 1400)

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خلاصه مقاله:

Bitter gourd (Momordica charantia L.) is a medicinal plant belonging to Cucurbitaceae family and native to tropical and subtropical areas. In Asia, Bitter gourd is used as a medicine and food. Modern research has found that Momordica charantia L. has a good hypoglycemic activity. Chemical constituents isolated from Bitter gourd have manifested insulin-like effect or can promote the release of insulin, demonstrating the insulin-like properties. Isolated compounds such as insulin-like peptide (p-insulin), charantin, vicine, glycosides, karavilosides. Fruit and seed extract, juices and powders have demonstrated potential effects in lowering blood sugar by increasing glucose uptake and glycogen synthesis in the liver, muscles, and fat cells and activating insulin receptor substrate۱ (IRS۱) in skeletal muscle by tyrosine phosphorylation. A field experiment was conducted to examine the effect of different ripening stages (۴, ۸, ۱۲ and ۱۶ days after fruit set) on the secondary metabolites accumulation in bitter gourd (Vijay cultivar) during June to October ۲۰۱۸ in the Research farm of University of Zanjan, Iran. Momordicin and charantin amounts were measured by the High Performance Liquid Chromatography method (HPLC). There was significant effect between different ripening stages on momordicin and charantin at %۵ probability level. The highest amount of momordicin was obtained at last ripening stage (۱۸.۶۷ mg/۱۰۰ g DW) and lowest amount (۵.۹۰ mg/۱۰۰ g DW) was observed in ۴ days after fruit set. Similarly, the highest and lowest amounts of charantin was measured at ۱۶ and ۴ days after fruit set respectively (۰.۵۶ and ۰.۴۳ mg/ ۱۰۰ g DW). The results of this experiment showed that late ripening stages after fruit set can improve the anti-diabetic compounds accumulation in Bitter gourd.

کلمات کلیدی:

antidiabetic, charantin, healthy compound, HPLC, momordicin, p-insulin