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Extraction and comparative analysis of moisture and capsaicin contents of capsicum peppers

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Classification of capsicum peppers based on the capsaicin contents has become the hallmark because of confusions surrounding the identities of some varieties. The capsaicin and moisture contents of three varieties of capsicum peppers [Capsicum fructescens- Bird eye pepper(X_1) and two varieties of *Capsicum annum*: Chilli pepper (X_2) and sweet pepper (X_3)] were determined and the level of pungency related to reported observed effects on human-beings. Extraction was carried out using modified method described by Kosuge et al (1958), fractions obtained identified as capsaicin by comparing their ir with literature data. For every 50g of capsicum pepper, mean values of capsaicin extracts were: 0.206 ± 0.02 g (0.412%) and 0.066 ± 0.01g (0.132%) for samples X_1 and X_2, respectively. For X_3, capsaicin content was in trace amount (<0.001 ± 0.00 g, -<0.002%). Values suggest species – specific relationship in capsaicin content and composition. Moisture content correlated moderately negatively with capsaicin content. Moisture contents were higher in two varieties- X_2 (66.97 ± 0.05%) and X_1 (51.57 ± 0.03%); X_3 had the lowest moisture content of 43.19 ± 0.01% suggesting that moisture content and not size affects the level of pungency contrary to popular believe that the bigger pepper are, the hotter. Bird-eye and chilli peppers, with high capsaicin content, would have medicinal values while sweet pepper would suffice as vegetables and for psychological satisfaction to pepper lovers without adverse effects. The method of extraction and identification appeared adequate for quantitation of capsaicin and could be used in developing countries faced with scarce equipment and most reagents unavailable.

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Virtual reality in pain management does it have a role?

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Pain is the most common cause of suffering and disability, affecting millions of people around the world. The direct and indirect cost to the patient and society is tremendous. (IOM 2011; Goldberg & Summer 2011). It is the leading reason that people seek medical attention, costing the nation > $600 billion annually - more than heart disease, cancer, and diabetes combined (IOM 2011). Pain is multidimensional and highly complex, and involves the integration of sensation and perception. Recent research indicates that immersive virtual reality can be used as a tool in treating pain. VR-based interventions have been used in acute pain management for over a decade. Intervention with Virtual Reality (VR) games is based on distraction or interruption in the way current thoughts, including pain, are processed by the brain. (Li et al., 2011; Sato et al., 2012). The utility of VR in the management of acute, possibly chronic pain has been demonstrated, and is a powerful tool in our treatment, and ability to reduce medication dependency and the risks of medication side effects is worthwhile. While VR has been demonstrated in a variety of settings to effectively decrease pain and distress associated with painful procedures, researchers have only recently begun to deconstruct patient and disease characteristics, specific aspects of VR technology, and to identify the neurobiological mechanisms underlying VR. Understanding the current science behind the use of VR and the on-going research supporting its use in pain management, will empower the practitioner to recommend this unique treatment for the complex management of pain.

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Page 107