

LYCOPENE, A PANACEA FOR SUSTAINABLE MAN POWER FOR AGRICULTURAL PRODUCTION IN NIGERIA: DETERMINATION OF LYCOPENE FROM WATER MELON (CITRULLUS LANATUS)

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Man power is one the most important factors that can enhance and sustain agricultural production in Nigeria. The age bracket of 40 years and above is the groups that are engaged in farming in Nigeria. These age groups are prone to diseases such as high blood pressure, cancer, cardiovascular diseases and this is why they die prematurely since their life expectancy has declined. Lycopene found in water melon which can be used for its medicinal value was extracted, analysed and quantified. Water melon was peeled and the reddish flesh ground and oven-dried to make a paste. Ethyl acetate was used to extract the lycopene and the crude product was recovered by simple distillation. The lycopene crystals were obtain through crystallization of crude product by adding a mixture of methanol and benzene. Thin-layer chromatography using silica gel as adsorbent was carried out in order to purify the crystals. This was followed by recrystallization using a mixture of benzene and methanol. Identification was done using UV spectroscopy and the primary chemical test for lycopene was carried out using sulphuric acid, the colour changes to indigo blue. Also, few crystals were dissolved in acetone, after successive addition of 5% solution of sodium nitrate and 1M sulphuric acid, it became colourless. The quantity of extracted lycopene was measured and found to be 1.62 mg per 50 g water melon paste. Lycopene can be produced in commercial quantity which can be consumed by this age group as supplement. This will aid to reduce high death rate and enhance their life span which is one of the factors that can increase agricultural productivity.

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