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USE OF ALLIUM CEPA (RED ONION SKIN) EXTRACT AS INDICATOR ALTERNATE IN ACID – BASE TITRIMETRIC ANALYSIS

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ABSTRACT

Today synthetic dyes are the choice of acid – base titrimetric analysis, but due to environmental pollution, availability, ease of preparation and cost effectiveness, the search for natural compounds as acid – base indicator started. Uche et al (2014). Allium cepa (Red Onion) skin is one of these compounds being investigated in this study. The ethanolic skin extract of red onion bulb was used as indicator in titrating 0.1M and 0.5M HCL and 0.1M and 0.5M NaOH solutions respectively. The result of the mean equivalent point obtained was compared with that of Methyl Orange and Phenolphthalein indicators. The mean equivalent point of titration of 0.1M HCL and 0.1M NaOH using two drops of red onion skin extract indicator agreed significantly with that of Phenolphthalein indicator with a standard deviation difference of 0.01cm^3. Therefore, the ethanolic skin extract of red onion bulbs can substitute or compliment Phenolphthalein indicator for strong acid – strong base titrations. It was also observed that the mean equivalent point of titration of 0.5M HCL and 0.5M NaOH using two drops of ethanolic skin extract of red onion bulbs indicator and two drops of Phenolphthalein and Methyl orange coincided to a great extent with a standard deviation differences of 0.30cm^3 for Methyl orange and ethanolic skin extract of red onion bulbs and 0.60cm^3 for that of Phenolphthalein and ethanolic skin extract of red onion bulbs respectively. Thus from the results obtained, ethanolic skin extract of red onion bulb can be conveniently employed as indicator in teaching and learning acid – base titrimetric analysis. It is environmentally friendly, easily available, and cost effective and can be prepared with great ease.

KEYWORDS: Red Onion (Allium Cepa) Skin, Standard Indicators, Ethanolic Extract, Anthocyanins