

DETERMINATION OF i) SUGAR BY LANE AND EYKON'S
TITRATION METHOD ii) ESSENTIAL AND NON ESSENTIAL
MINERALS BY ATOMIC ABSORPTION SPECTROSCOPY (AAS)
AND INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION
SPECTROSCOPY (ICP-OES) IN DATES

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ABSTRACT

DETERMINATION OF i) SUGAR BY LANE AND EYNON'S TITRATION METHOD ii) ESSENTIAL AND NON ESSENTIAL MINERALS BY ATOMIC ABSORPTION SPECTROSCOPY (AAS) AND INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROSCOPY (ICP-OES) IN DATES

In this study, the concentration of essential and non-essential minerals such as calcium, and magnesium in dates from different origins was determined by using inductively coupled plasma-optical emission spectroscopy (ICP-OES) and atomic absorption spectroscopy (AAS). The sample was bought in market around Selangor. The sample was digested by using process of wet – ashing method. Mixed acids of HNO₃ (10 mL, 14.40 M) and H₂SO₄ (10 mL, 17.83 M) let stand over night. Dates from Saudi Arabia showed the higher concentration of calcium (434.1±88.52 mg/kg) and magnesium (409.6±5.48 mg/kg). It can be concluded that, the ICP-OES and AAS method showed significant different by using T test (comparing 2 experiment means) because the value of *t* test of Ca and Mg > 2.57, indicated at the 95% confidence level. Besides that, the sugar content was analyzed by Lane and Eynon's titration method. Fehling's solution was used in determination of percentages of reducing sugar and total sugar in dates from different origins. Dates from Madinah showed the highest percentages of reducing sugar, 2.94% and total sugar, 7.35% compared to Makah, Saudi Arabia, Iran and Egypt.