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A pilot study stable isotope ratio and elemental compositions in Bird's Claw Rice (Khao Leb Nok) in the south of Thailand

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In recent years, local Thai rice has been sharp-rising demands for consumers with high purchasing power who are willing to pay for nutritious grains and specialty rice. Khao Leb Nok (Bird's Claw Rice) is traditional southern variety with high nutritious and popular rice grown in the south of Thailand. This study was done to investigate the isotopic compositions (δ13C, δ15N and δ18O) and the elemental compositions (%C, %N and %O) in rice samples obtained from different provinces of cultivation. Forty-one samples of Leb Nok rice were collected from Phatthalung and Nakhon Si Thammarat provinces and their δ13C, δ15N and δ18O, %C, %N and %O values were determined using elemental analyzer isotope ratio mass spectrometry (EA-IRMS). Our result found that δ18O, %O and %C in Leb Nok rice samples were significantly different but there was no evidence that δ13C, δ15N and %N was significantly different among the provinces at 95% confidence interval. The δ18O, %O and %C values showed good potential in differentiating Leb Nok rice from different geographical provinces. This technique may be possible to trace the geographical origin of rice cultivated from different regions in Thailand.

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