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### ***Ecballium elaterium* Seed oil: Heavy Metals and Physicochemical Analysis from Arid zone of Rajasthan**

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#### **ABSTRACT**

*The physicochemical characteristics including fatty acids and heavy metals analysis of seed oil of *Ecballium elaterium* has importance of arid zone of Thar Desert. These seeds are good source of energy, carbohydrates, proteins, fats and minerals such as calcium, iron, magnesium, phosphorous and potassium. The *Ecballium elaterium* seed and its oil were studied for the presence of heavy metals, especially metals like copper, zinc, magnesium, iron, chromium, lead, nickel and cadmium, which play an important role in the breakdown of carbohydrates, fats and proteins into digestible forms and convert into energy. Trace metals like Cu, Mn and Zn are essential in bone metabolism as cofactors of specific enzymes. Results showed that linoleic acid (47.14%) and punicic acid (21.98%) were the major polyunsaturated fatty acids. Heavy metals analysis of the seed oil of *Ecballium elaterium* is performed by Atomic Absorbance Spectroscopy (AAS). The heavy metal found in seed oil of *Ecballium elaterium* are in the order—Fe (23.46 mg L<sup>-1</sup>) > Cr (3.40 mg L<sup>-1</sup>) > Zn (0.97 mg L<sup>-1</sup>) > Cu (0.23 mg L<sup>-1</sup>) > Pb (0.09 mg L<sup>-1</sup>) > Ni (0.08 mg L<sup>-1</sup>) > Cd (0.03 mg L<sup>-1</sup>).*

**Keywords:** *Ecballium elaterium*, Seed oil, Heavy metal, Linolic acid, Punicic acid.

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