

Seed oil from Harmal (*Rhazya stricta* Decne) grown in Riyadh (Saudi Arabia): a potential source of δ -tocopherol

ABSTRACT

Rhazya stricta (*R. stricta*) known as Harmal is widely distributed in Saudi Arabia and throughout the Middle East. It is used as a medicinal plant in traditional cultures and the seeds are a source of unsaturated oil. In the present study, tocol (tocopherol and tocotrienol), triacylglycerol, and fatty acid compositions, pigment content, thermal behavior, and various physicochemical properties of *R. stricta* oil were characterized to determine the potential uses of this seed oil. Our results indicate that the oil is a rich source of bioactive molecules, including δ -tocopherol (896 mg/100 g), γ -tocopherol (148 mg/100 g) and carotenoids (15.67 mg/kg). The oil content of the seeds was 13.68% and the triacylglycerols mainly consisted of linoleic acid (59.03%), and oleic acid (27.01%). The major triacylglycerols were trilinoleate, dilinoleate and monolinoleate. The ratio of unsaturated to saturated fatty acids (UFA/SFA) in the oil was high (9.20). Additionally, the oil showed a high degree of thermal stability and a low melting point of approximately -25°C . These data indicate that *R. stricta* seed oil, which is low in saturated fats and rich in bioactive compounds, is potentially useful in food and pharmaceutical applications.

Keyword: *Rhazya stricta* Decne; Seed oil; δ -Tocopherol; Fatty acids; Triacylglycerols; Pharmaceutical applications