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PHYTOCHEMISTRY AND ETHNOPHARMACOLOGICAL USES OF WILD MEDICINAL PLANTS IN EGYPT

Medicinal plants have a long history and still play an important role in the desert communities in Sinai, East and West deserts, Egypt. This work provides significant phytochemical and pharmacological information on medicinal plants of different deserts in Egypt. Yet no enough studies of these unique communities are available in the scientific literature. It was found that the inhabitants (Bedouin populations) in these areas use herbal as nutrition and ethnomedical food for centuries, up to today. The information was collected from interviews with local herbal healers and people living in scattered areas of these deserts. The information described data on 40 plants, belonging to 16 botanical families, which were claimed as medicinal plants. The most represented families were Asteraceae, Lamiaceae, Brassicaceae, Malvaceae, and Papaveraceae. Diverse important phytochemicals have been isolated from these plants, such as flavonoids, terpenoids, phenolic acids, polyphenolic compounds, and essential oils. The identified medicinal plants are known for ethnomedicinal and pharmacological uses because of their antibacterial, anti-inflammatory, antioxidant, anti-cancer, anti-parasitic, hepatoprotective, anti-diabetic, anti-fungal, anti-spasmodic, and diuretic activities. The present work has demonstrated the great potential of Egyptian deserts as a source of wild plants that can be used in the treatment of many human ailments.

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MINERALOGICAL AND CHEMICAL CHARACTERIZATION ANALYSIS OF PHOSPHATE ORE OF THE KEF ESSENNOUN DEPOSIT

Phosphates are one of the most important minerals on Earth, as they are used as fertiliser for agriculture and as a raw material for the chemical industry. In addition, phosphates are the source of rare earth elements. Global consumption of P_2O_5 is expected to increase gradually from 44.5 million tonnes in 2016 to 48.9 million tonnes in 2020.

Algeria is a country rich in various useful substances such as sedimentary phosphates from the Kef Essennoun deposit in the Dj. Onk region, which are differentiated into 5 phosphate layers: 3 layers of beige phosphate and 2 layers of black phosphate. Proven resources are estimated at over 2 billion tonnes of phosphate. They are exploited by the Mining Company of Phosphates (SOMIPHOS) - a subsidiary of Ferphos.

Various recovery methods are used to increase the P_2O_5 content and make it economically profitable; including calcination, flotation, magnetic separation, and electrostatic separation and leaching. The choice of the method depends mainly on the origin of the phosphate ore and the nature of the associated exogangue.

The objective of this work is to carry out a mineralogical and chemical characterization in order to know the exact composition of the phosphates of kef Essennoun and the content of major elements, which will facilitate the choice of an economically profitable benification method.

The mineralogical study concluded that the mineral apatite is present in association with gangue minerals such as calcite and quartz, and that the phosphate rocks are of dolomite formation. The XRF results show that the apatite mineral content was varied from 18.44% to 27.91%.