



DERMATOLOGICAL SIGNIFICANCE OF PURSLANE LEAVES

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Introduction

The use of herbal medicines as the most exclusive source of life saving drugs, is an age-old tradition that have long been used to treat variety of illnesses and from which the recent progress in modern therapeutics has stimulated the use of majority natural products from plants worldwide for alleviating diverse ailments of human kinds.

Out of many species of purslane plants, the relevance of a Purslane oleracea (PO) of family Portulaca oleracea as medicinal herb, qualified to the level or nature of its usefulness. It is an annual herbaceous plant with reddish stems and alternate leaves from family Portulacaceae that is classified as a C4 plant which can replace costly pills, supplements, some drugs and is one of the effective medicinal plants named as “Global Panacea” by the World Health Organization. Purslane oleracea possesses a wide spectrum of pharmacological properties of it extracted components that can serve as neuroprotective, hepatoprotective, antidiabetic, antioxidant, ant fatigue, anti-inflammatory, anticancer, antitumor effect, Anti-fungal effect, Antibacterial Activity and due to chemistry of many chemical components contained in purslane have shown to prove positive hidden efficacy in treating skin diseases (Sangeetha, 2020 and Yan J, 2012).

Method

Materials and reagents used were 500g of Purslane dried leaves, Extra virgin olive oil, 0.5 Kg Natural beeswaxes, Methanol 4.5-5.5%, Water bath, four beaker, measuring cylinder, fractional distillation column, 5 litre of distilled, empty plastic cosmetic jars/bottle, and watch glasses.

3.0.METHODOLOGY

The initial strategy of studying purslane in this project used about 45 references, of which 16 references were accepted for further screening and meet all our inclusion criteria, having key terms such as therapeutic effects, antibacterial, staphylococcus, acne, anti-inflammatory, antifungal, anticancer, antioxidant, pharmacological, medicinal property, therapeutic effects, atopic dermatitis and dermatological significance of Purslane which dated mainly from the year 1993 to 2022.

This study was conducted in the Department of Sciences Laboratory at Turkish Maarif Schools along with visiting of pediatric and dermatologist at Royal Medical Clinic, Kiembe Samaki –Zanzibar, about two months concomitantly and final the already made purslane ointment was sent to ZFDA (Zanzibar Food and Drug Agency) to ensures pure study review which encompasses the following routinely steps:

Results

Preparation of Plant Extract: The aqueous extract used in this research was prepared by soaking the powdered plant (500g) in distilled water in a ratio of 1: 9 for 24 hours and the extract filtered using Whatman filter paper producing a 16% yield of extract (69.7g). The tests were carried out using different quantities of the aqueous extract.

Extraction process: Two methods were employed during extraction of purslane chemical contents from powdered sample.

First Method, Methanolic extract:

(i) Two hundred grams (200g) of each dried purslane herbs variety were macerated with 500ml of 70% methanol for 5 days.

(ii)The solid residue from the maceration process was macerated once more with the same amount of solvent. The first and second macerates were mixed and evaporated at 50 °C until a thick extract was obtained, as the principal underlies that methanol can evaporate at low temperature to leave behind the required product.

(iii)The thick extract was then used for making ointment and in vivo wound healing activity tests.

Second Method, Extract Virgin oil infusion:

(i)200g of sieved purslane powder inserted in 600ml of extra virgin oil, preserved in glass bottle and left for about two weeks for complete infusion method.

(ii)After two weeks the mixture containing purslane powder and extra virgin olive oil, was filtered using Whatman filter paper to obtain clear purslane infused oil.

Conclusion

Acne and inflammation in the skin underlies a number of devastating conditions such as atopic dermatitis, psoriasis and acne, with symptoms including pain, dryness and itching. Topical applications of purslane oleracea ointment from powdered sample have direct significance in skin pathology. As supplementation with essential omega-fatty acids, lipid-soluble vitamins E and A in an attempt to assist the generation of the lipid barriers and to retain moisture in the skin and consequently treatments are therefore targeted at both the underlying inflammation and the repair and maintenance of the epidermal structures.

When purslane ointment made from purslane powder, natural beeswax and extra virgin olive oil, applied topically on the skin surface showed that its chemical constituents (triglycerides, omega-3-fatty acid, alkaloids, flavonoids, linolenic acids, phospholipids, phenolic compounds and antioxidants) is considered safe may act effectively accelerate several mechanisms in promoting skin barrier homeostasis, antioxidative activities, anti-inflammatory properties, antibacterial and antifungal activities, promoting wound healing, and anti-carcinogenic properties (Simopoulos, 1997 and Oh. KB et al 2000).

References

- 1.A.P. Simopoulos, D.-X. Tan, L. C. Manchester, and R. J. Reiter, “Purslane: a plant source of omega-3 fatty acids and melatonin,” Journal of Pineal Research, vol. 39, no. 3, pp. 331–332, 2005.
- 2 Anna Kurek (2022) bee products and their applications in the Food and Pharmaceutical industries.
- 3.Bown. D., 1995 Encyclopedia of herbs and their uses. The Royal Horticultural Society, Darling Kinders ley Books. 2: 25.

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Fig. 1.0 PO prepared to be washed



Fig. 2.0 PO prepared for being dried



Fig. 3.0 Oven drying of PO



Fig. 4.0 Pulverizing PO

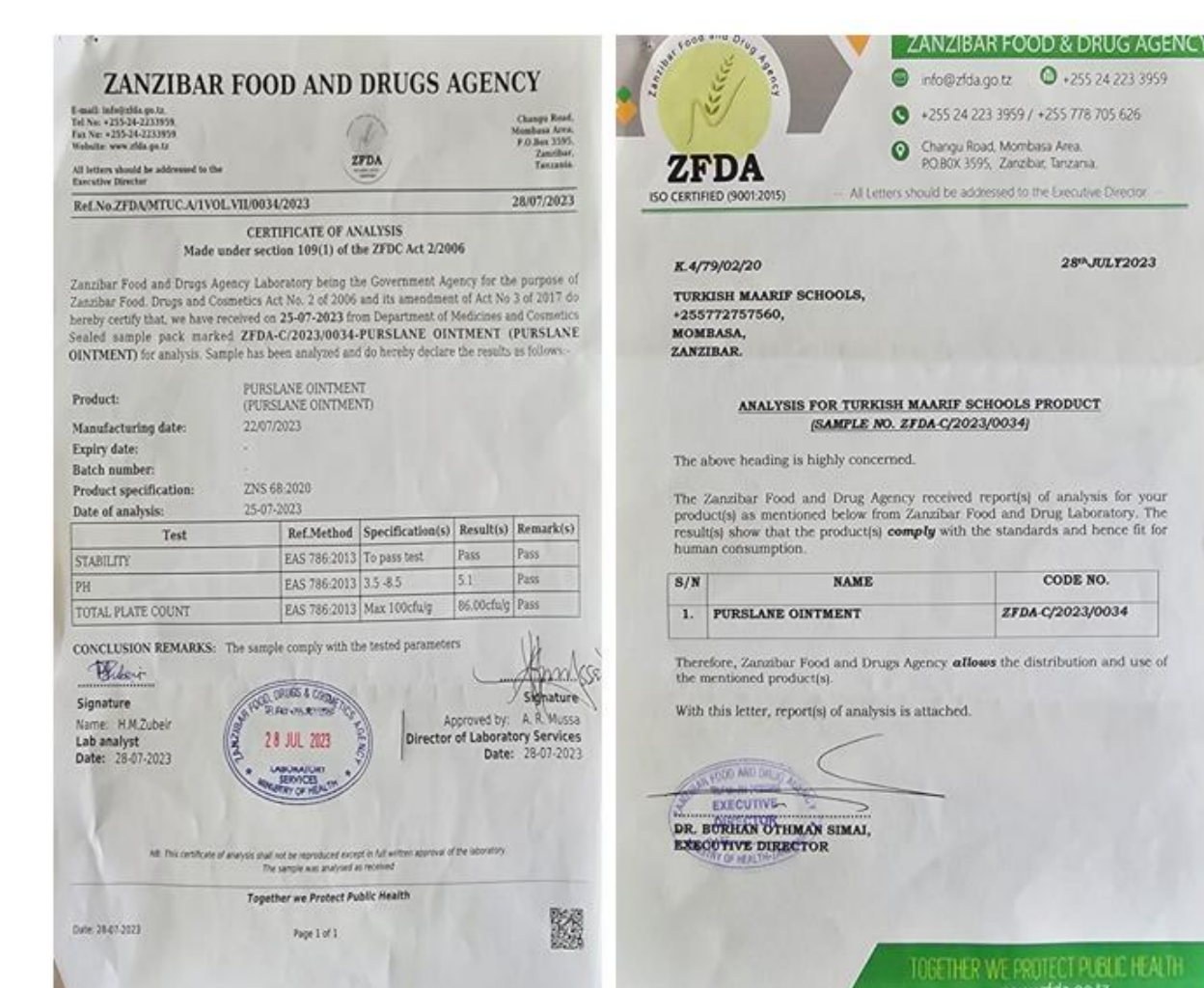
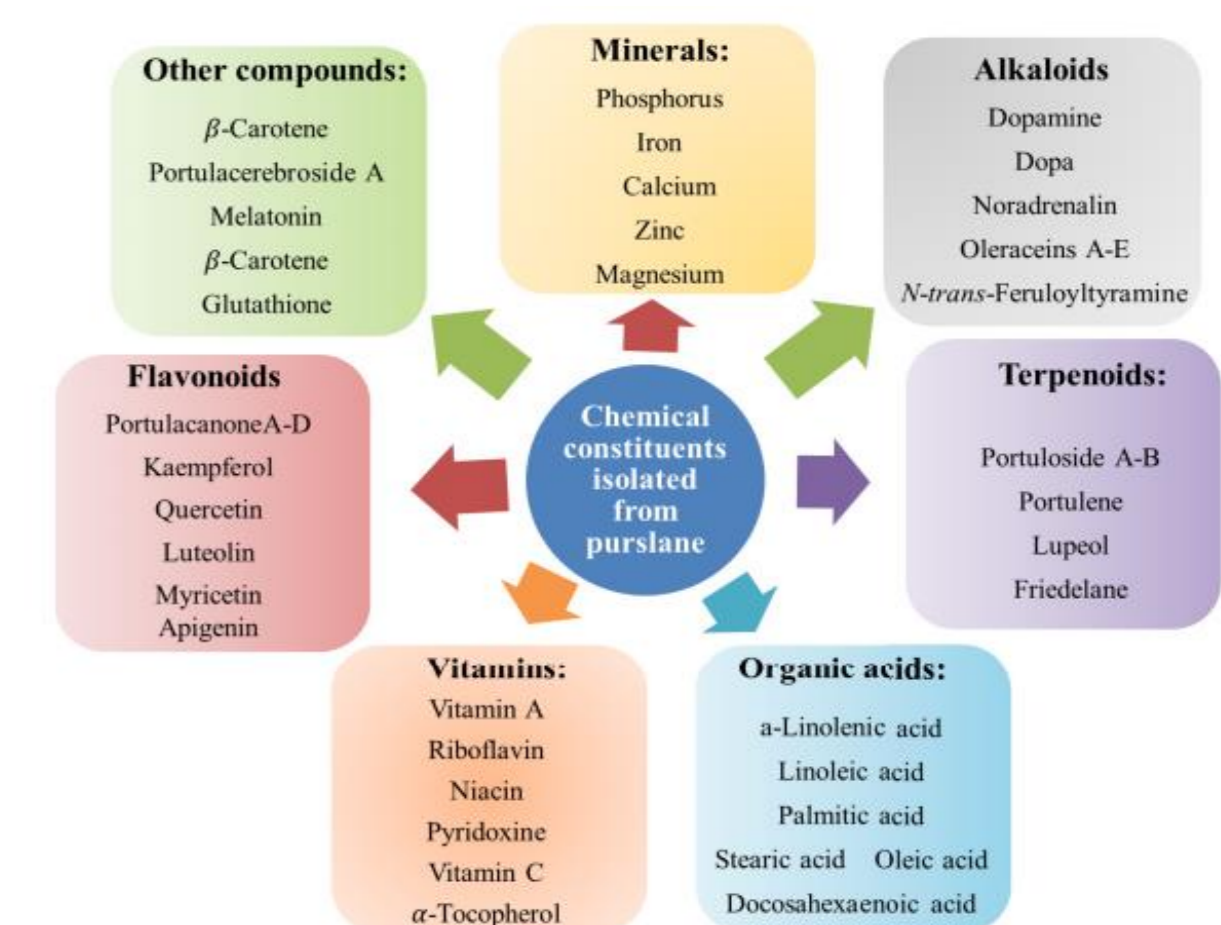


Fig10. 6 ZFDA data analysis and approved certificate for safety of purslane ointment