

A Formulation of a Topical Liniment from Avocado (*Persea Americana*) Seeds

Field of Utility Model

5 The utility model relates to the field of natural product processing. It provides a formulation of a topical liniment from avocado (*Persea americana*) seeds external application.

Background of the Utility Model

10 Liniments are commonly applied to relieve muscle pain, joint stiffness, and minor skin discomforts. The technical problem is the need for a stable and practical liniment using locally available by-product-based materials. This utility model relates to the technical solution formulating a topical liniment utilizing an agricultural by-product avocado (*Persea americana*) seeds.

15 In PH2/2014/000366, a herbal liniment is prepared through hot infusion of lagundi, ginger, and eucalyptus into commercially sourced coconut oil. The process relies on pre-processed oil and prolonged heating of botanical materials. Coconut oil is reported in dermatological literature to have high saturated fat content and comedogenic tendencies, which may influence skin permeability and oxidative stability.

20 In PH2/2013/000023, a liniment is produced through cold infusion of more than twenty herbs in sunflower and other oils over 26 days. The formulation utilizes imported base oils and requires extended processing time. Furthermore, sunflower oil, being rich in polyunsaturated fatty acids, is known to be susceptible to oxidation during storage.

25 In PH2/2009/000390, a mixture of olive oil, eucalyptus, jatropha, and red pepper is prepared using direct blending. Olive oil has relatively high viscosity and may undergo rancidity when exposed to air, light, or heat, which can affect long-term formulation stability.

30 These prior formulations demonstrate the use of commercially sourced carrier oils and infusion-based processing methods but present limitations related to oxidative resistance, viscosity, sourcing of raw materials, and processing duration. Therefore, there is a need for a liniment formulation that utilizes by-product-based and locally available raw materials through a stable and practical extraction process.

The present utility model addresses this need by providing a formulation of a topical liniment from avocado (*Persea americana*) seeds under controlled low-heat conditions, together with coconut meat and ginger, followed by blending with peppermint oil and menthol crystals to produce a topical liniment. In this formulation, avocado seed oil serves as the primary base component, producing a naturally derived therapeutic oil blend enriched with antioxidants and hydrating properties suitable for external application.

Summary of the Utility Model

This utility model addresses the oxidative instability, high viscosity, and complex processing times of existing liniments using commercial oils. It provides an antioxidant-rich formulation by extracting oil from avocado seeds (*Persea americana*), coconut meat, and ginger under controlled low-heat conditions, blended with peppermint oil and menthol for a stable, therapeutic finish

Detailed description of Utility model

The topical liniment of the present utility model comprises avocado (*Persea americana*) seeds (52.57% by weight), coconut meat (26.29% by weight), and ginger (13.14% by weight), combined in a weight ratio of 4:2:1 (avocado : coconut : ginger), wherein avocado serves as the main component, while coconut and ginger act as carrier components. The composition is further enhanced with organic peppermint essential oil (3.00 % by weight) and menthol crystals (5.00 % by weight) to complete the formulation.

A process for producing a topical liniment from avocado (*Persea americana*) seeds, the process comprising the steps of:

- a. selecting raw materials comprising avocado (*Persea americana*) seeds, coconut meat, and ginger in a predetermined weight ratio of approximately 4:2:1, respectively;
- b. preparing the coconut by cracking, removing water, and grating the coconut meat;
- c. preparing the avocado seeds by washing, peeling, and grating;
- d. preparing the ginger by washing, peeling, and grating;
- e. combining the grated avocado seeds, coconut meat, and ginger;
- f. mixing the combined ingredients;
- g. extracting a liquid from the mixed ingredients by squeezing;

- h. collecting the extracted liquid;
- i. straining the collected liquid;
- j. heating the strained liquid at a temperature of about 65°C for a duration of about 40 minutes to produce an extracted oil ;
- 5 k. cooling the extracted oil;
- l. adding a cooling agent and a counter-irritant essential oil to the extracted oil to form a mixture;
- m. blending the mixture to form the topical liniment oil;
- n. settling the topical liniment oil for about 24 hours at room temperature (25–10 28 °C); and
- o. transferring the settled topical liniment oil into sterilized containers.