

## DIRECT INCORPORATE OF AVOCADO OIL VS ENCAPSULATED AVOCADO OIL FOR PERSONAL CARE FORMULATION



**INTRODUCTION:** Avocado oil is vegetable oil extracted from avocado fruit through cold pressed method belongs to the *Lauraceae* family. It has a unique color, flavor and naturally low acidic. The main constituents found in avocado oil is high monounsaturated (60%) fatty acids and low polyunsaturated (10%) fatty acid. Avocado Oil is high absorption and penetration ability into the skin and also act as a strong antioxidant and having emollient properties. It use for many cosmetic formulation like creams, gels and soaps.

### BENEFITS OF AVOCADO OIL:

- Avocado Oil may help to the treat the wrinkles, tighten the skin and enhance smooth texture of the skin due its high absorption ability into the skin.
- Avocado Oil is rich in vitamins can be used on dry, rough and sensitive skin. It may also help to regenerating and rehydrating the skin.
- Avocado Oil use for the nourishing and hydrating the hair. Maintain the hair thicker, longer and stronger.
- Avocado Oil may help to clean the sweat and excess sebum from hair. It reduce the dandruff and moisturize the hair.

### WHY ENCAPSULATED AVOCADO OIL ?



Encapsulation Technology used in the development of cosmetic formulations that more stable, more effective and with improved sensory properties. Encapsulation protect the active ingredient from the unwanted reactions. Avocado oil are sensitive to heat and light, becoming a rancid and produce undesirable flavor which can be degrade during processing, storage and transformation. To reduce these all problems encapsulation technology use for Avocado oil.

### UNIQUE FUNCTIONS:

- Sprayspheres®- SC beads containing Avocado Oil are stable so easily applied into formulation.
- Sprayspheres®- SC beads containing Avocado Oil When rubbed onto the skin and hair they break easily and releasing the active contents.
- Sprayspheres®- SC beads containing Avocado Oil hard and solid in bulk (easy to process and delivery).
- Sprayspheres®- SC beads containing Avocado Oil are hard and dry but soften in contact with at least 20% of water.

### MANUFACTURING PROCESS OF SPRAYSFERES® – SC BEADS CONTAINING AVOCADO OIL:

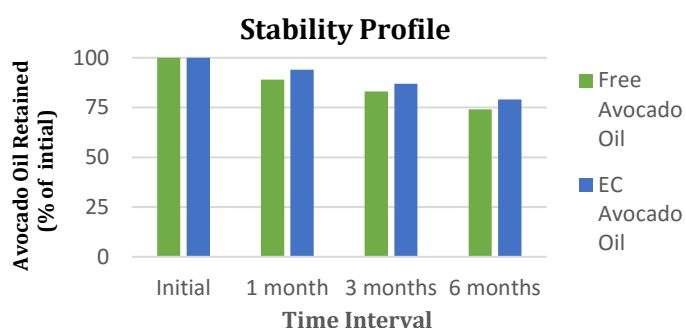
Avocado Oil, lactose, Micro-crystalline cellulose, HPMC and color were weighed accurately and Dry mixing of all ingredients is done to achieve homogeneous powder dispersion, The obtained blend was granulated using purified water to form wet mass. Dry mixing and wet granulation are carried out using Umang Rapid Mixer granulator (URMG-10). This wet mass was then extruded through Umang Single screw Extruder (USSE- 60) which



produces rod shaped particles of uniform diameter from the wet mass. Extrudes were then spheronized using Umang Spheronizer (USPH-150). After spheronization process, the obtained beads were kept for drying.

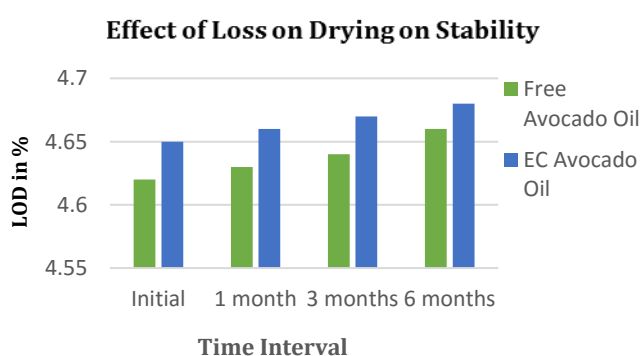
### IMPROVED SHELF LIFE STUDY:

The Free Avocado oil and Sprayspheres®-SC beads containing Avocado oil were kept in an air tight glass bottle and place in Stability Chambers at temperatures of 30°C ± 2°C for 180 days, HPLC analysis show that the Sprayspheres®-SC beads containing Avocado oil retain 79 % of the Avocado oil while the free Avocado Oil only retained 74 %.



### TEMPERATURE EFFECT ON LOD STABILITY:

The Free Avocado Oil and Sprayspheres®-SC beads containing Avocado Oil were place in an air tight glass bottles at 30°C ± 2°C for 180 days in a stability chamber. The sampling and analysis was done at fixed time intervals for their LOD ,to check the moisture loss in the samples. Results mentioned in below graph.



### APPLICATIONS:

- Hair Serum
- Hair Shampoo
- Body /Face Creams
- Body /Face Lotions
- Body /Face Gels

### CONCLUSION:

The results obtained from this study show that using encapsulated Avocado Oil i.e. Sprayspheres®-SC beads containing Avocado Oil are more stable and deliver desire amount of dose of Avocado Oil for skin nourishment and hair growth.

### REFERENCES:

1. Amr M. Bakry; Shabbar Abbas; Barkat Ali; Hamid Majeed. Microencapsulation of Oils: A Comprehensive Review of Benefits, Techniques, and Applications. Comprehensive Reviewsin Food Scienceand Food Safety.15.2016.
2. Patrícia Fonseca Duarte; Marcia Alves Chaves; Caroline Dellinghausen Borges;Carla Rosane Barboza Mendonça. Avocado: characteristics, health benefets and uses. Ciência Rural.2016.
3. Allan Woolf; Marie Wong; Laurence Eyres; Tony Mcghie. Avocado Oil. Gourmet and Health-Promoting Specialty Oils.2009.
4. Marcos Flores;Carolina Saravia;, Claudia E. Vergara;et al. Avocado Oil: Characteristics, Properties, and Applications. Molecules 2019, 24, 2172.

### KEY WORDS:

Encapsulated Beads, Spheres, Cosmetic beads, Beads for special effects, Cosmetic beads for aesthetic effect.