

## **Phase behaviour study of Pitaya seed oil: jojoba oil with non-ionic surfactants in emulsion system**

### **ABSTRACT**

Pitaya seed contains good antioxidant capacity while jojoba contains many different varieties of tocopherols which make up vitamin E to promote healthy and clear skin. The phase behaviour of systems has been investigated by constructing ternary phase diagrams consisting of pitaya seed oil: jojoba oil/non-ionic surfactant/water. Different HLB value of non-ionic surfactants exhibit different ternary diagram characteristics. A lower HLB shows a more oil-soluble and a more water-soluble surfactant (larger homogeneous and isotropic region in ternary phase diagrams) whereas high value of HLB shows the reverse of that result. The results showed that the Tween85 gave better solubility in water to produce larger isotropic and homogeneous regions for jojoba oil, pitaya seed oil and pitaya seed oil: jojoba oil. The presence of optimal HLB value of Tween85 for the stabilization of o/w emulsions contributes to the enlargement of the single phase regions.

**Keyword:** Pitaya seed oil; Jojoba oil; Non-ionic surfactant; Phase diagram; Emulsion system