



## Topical Microemulsion's Formulation of Purple Sweet Potato (*Ipomoea batatas* L.) Ethanol Extract as Antioxidant by using Various Concentration of Span 80

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**Abstract: Purposes:** Determine IC<sub>50</sub> value of the ethanol extract of purple sweet potato that has good antioxidant activity. Make clear and stable microemulsion's formulation containing purple sweet potato ethanol extract by using various concentration of span 80, i.e 20%, 25% and 30% (w/w) and determine the percent inhibition of formula microemulsion are the most stable.

**Methods:** Determination antioxidant activity of purple sweet potato ethanol extract by using DPPH method. Then do the manufacture of microemulsion containing purple sweet potato ethanol extract as much as third formula with a variation span 80 levels, they are Formula A (20% Span 80), Formula B (25% Span 80 ) and Formula C (30% Span 80). Physical stability of microemulsion was evaluated for 28 days to define which concentration span 80 could make clear and stable microemulsion form. The most stable formula then determined its percent inhibition.

**Results:** Purple sweet potato ethanol extract has a IC<sub>50</sub> value of 38.25 ppm. Span 80 with concentrations of 20%, 25% and 30% could make clear and stable microemulsion form. The third formula produces a stable microemulsion performed so determining the percent inhibition of the formula is determined based on a formula that contains a concentration of the smallest span 80 because in the smallest concentration microemulsion can already be formed that formula A. Percent inhibition of formula A was 80.78092%.

**Conclusion:** Formula microemulsion ethanol extract of purple sweet potato that is made has antioxidant activity and good stability.

**Keywords:** Purple sweet potato ethanol extract, Antioxidant activity, microemulsion, Span 80, physical stability.