

## THE POTENTIAL OF SUBSTITUTION OF BITTER LEAF FOR BITTER HOP IN BEER MAKING

### ABSTRACT

The objective of this research was to study the possibility of making good quality craft beer by using Bitter Leaf (*Vernonia amygdalina*) as a supplement ingredient in the brewing. Since the attributes from *V. amygdalina* to human health in medicinal properties could provide health benefits to consumer. Due to health concerned, people trend to live their life healthier by focusing on the consumption of healthy food. Thus, to study the possibility of this Bitter leaf beer to be claimed as health beer by using Sphygmomanometer to measure blood pressure before and after 30 minutes of product testing. Also, to study the substitute bitter hops. The beer formulation using *V. amygdalina* (Bitter Leaf) as a supplement ingredient was successfully developed. From the results obtained from sensory tests of beer brewed by using 1g. of smashed Bitter Leaf has been chosen as the best formula with the best aroma and taste. The results of attributes obtained by 10 trained panelists for sensory evaluation were included foam stability ( $5.2 \pm 1.93$ ), color ( $6.5 \pm 0.97$ ), clarity ( $5.5 \pm 1.58$ ), aroma ( $5.7 \pm 1.95$ ), bitterness ( $6.2 \pm 1.39$ ), alcohol content ( $5.5 \pm 1.43$ ), complexity ( $6.2 \pm 1.39$ ), after taste ( $6.5 \pm 1.08$ ), overall liking ( $7.0 \pm 1.05$ ). The mean score obtained was 7.0 which was greater than other formulations. The uses of *V. amygdalina* could be used for hops substitution since the properties and characteristic which are similar to hops. In addition, the Bitter Leaf Beer has possibility to decrease blood pressure since about 60% of the blood pressure measurement (DIA) has decreased. Therefore, the Bitter leaf beer could be claimed as health beer since it has the availability to decrease blood pressure. However, for a proper health claimed, further medical research is needed to confirm the effectiveness of the developed Bitter Leaf Beer.

**Keywords:** *Vernonia amygdalina*, Bitter Leaf, Craft beer, Health beer.