

Comparative Study on Physicochemical Properties of Pot Still and Column Still Palmyrah Arrack

S. Prasana¹, G.A.A.R. Perera^{1*}, E.A.L. Lochana¹ and B. Anuluxshy²

¹*Department of Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka*

²*Palmyrah Research Institute, Jaffna, Sri Lanka*

Palmyrah arrack is produced either by pot still or column distillation of Palmyrah toddy. This study was conducted to fill the gaps in information on the physicochemical properties of these two types of Palmyrah arrack and to investigate whether they comply with the Sri Lankan Standard (DSLS 919: 2019) requirements. Both arrack samples were collected from two distilleries located in the Jaffna district. Ethanol, total solids, total acids as acetic acid, fixed acids as acetic acid, esters as ethyl acetate, higher alcohol, volatile acidity, reducing sugar, total sugar, total phenols, and vitamin C contents and color and pH of these samples were evaluated. Pot still arrack contained significantly ($p < 0.05$) higher amount of ethanol ($29.3 \pm 0.6\%$), total solids (791.9 ± 17.6 g/100 L), total acids (34.5 ± 3.2 g/100 L), fixed acids (7.7 ± 0.3 g/100 L), volatile acids (26.8 ± 2.9 g/100 L), esters (101.2 ± 1.6 g/100 L), Vitamin C (3.6 ± 0.0 mg/100 g), total phenols (0.63 ± 0.0 g/100 g) and Color (8.1 ± 0.2) than column still arrack ($16.0 \pm 1.0\%$, 297.6 ± 12.8 g/100 L, 18.4 ± 1.2 g/100 L, 1.8 ± 0.1 g/100 L, 16.6 ± 1.1 g/100 L, 55.3 ± 0.4 g/100 L, 2.9 ± 0.1 mg/100 g, 0.26 ± 0.0 g/100 g & (7.6 ± 0.1) respectively). Meanwhile, total sugar (9.4 ± 0.14 g/100 g), and reducing sugar (2.73 ± 0.0 g/100 g) contents of pot still arrack were significantly lower than those of column still arrack (15.0 ± 0.7 g/100 g & 5.3 ± 0.7 g/100 g respectively). It can be concluded that pot still and column still Palmyrah arracks are significantly different in terms of their physicochemical properties. Both arracks comply with Sri Lankan Standard requirements.

Keywords: Palmyrah arrack, Pot still, Column still, Physicochemical properties, Sri Lanka standard requirement