

E2-26: Fatty acid composition of coconut cultivar Tall x Tall (CRI 60) at different development stages

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Fatty acid composition of coconut may vary depending on the age of the nut. Thorough knowledge on fatty acid composition at different development stages is essential in order to utilize them in the industries for edible and non edible purposes.

Oil was extracted from kernels of 6,7,8,9,10,11 & 12 months old nuts from 8 palms of cultivar Tall x tall. Fatty acid profiles of the oil were determined by gas chromatography. Caprylic acid (C₈:0) percentage at the initial stage was 2.1% and increased with maturity up to 8.2%. Capric acid (C₁₀:0) was increased from 1.4% to 6.8%. Lauric acid (C₁₂:0) was the dominating fatty acid throughout the development and contained 24.3% & 57% in the 6 & 12 months old nuts respectively. Myristic acid (C₁₄:0) and stearic acid (C₁₈:0) had rather constant value throughout the development (~1.9% & ~ 1.7% respectively). Palmitic acid (C₁₆:0) content decreased from 21.6% to 4.8%

with maturity. Oleic acid (C 18:1) decreased from 18.7% to 2.8 % and linoleic acid (C18: 2) from 12.0% to 1.2% with maturity. Free fatty acid percentage was high in immature kernels and decreased with maturity.

Our investigation revealed that, lauric acid is the most dominating fatty acid of cultivar Tall x Tall throughout the development. Percentage of medium and short chain fatty acids (caprylic, capric and lauric) which are health friendly, increases rapidly with maturity. Since endosperm of immature nuts (6 & 7 months old) is rich in unsaturated fatty acid specially linoleic acid, it can possibly be used in the food industry. However, stability of oil with higher percentage of unsaturated fatty acids and free fatty acid is usually less. Hence keeping quality of food prepared using immature kernels should be studied.