# Effects of Roasting Conditions of Kuu-Char seeds (Camellia oleifera Able)on the quality of Kuu-Char oil products


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**ABSTRACT**

Kuu-Char oil is prepared from Kuu-Char seeds by steaming first and then pressing. In Taiwan, Kuu-Char oil was believed to be good for human''s health. In Chinese old medical''s record, Kuu-Char oil was believed to have intestine and stomach cleaning effects. The quality of Kuu-Char oil is varied from different producers. Kuu-Char oil was found very easy to undergo oxidation and generated rancid and off-flavor. Therefore in this study, the efforts were made to investigate the stability of Kuu-Char oil and the effects of roasting treatments on its oxidation stability.Three parts were included in this study. First part of this study investigated the relationship of Kuu-Char oil''s volatile components generated from different heating treatment and the oxidation stability of these Kuu-Char oil samples. Kuu-Char oil prepared from Kuu-Char seeds underwent different heat treatment were applied to 30 ℃ and 60 ℃ oven test. Peroxide value and carbonyl value were measured periodically.The volatile components in oil were isolated by Likens-Nickerson simultaneous steam distillation/solvent extraction method. After concentration, the flavor isolates were then analyzed by GC and GC-MS. The results in this study showed that Kuu-Char oil prepared from higher roasting temperature had better oxidation stability. The amounts of volatile aldehydes in oil were found to decrease with increasing in roasting temperature, whereas, the amount of total volatile pyrazines and furans were found to increase with increasing in roasting treatment. Therefore, roasting treatment was proposed to generate some anti- oxidants by heating the seeds. These antioxidants probably generated from Mallard type reactions or thermal degradation of some of the components in Kuu-Char seeds The second part of this study investigated the oxidation stability and the volatile components in Kuu-Char oil prepared from Kuu- Char seeds roasted at 200 ℃ from different time in Kuu-Char oil. The oil samples were underwent 60 ℃ oven test. Peroxide value, Carbonyl value, viscosity and color were measured periodically. The contents of α -tocop- herol and total phenolic compounds in the oil were also analyzed. Volatile components in oil were isolated by Likens-Nickerson simultaneous steam distillation /solvent extraction method. The flavor isolates were then analy- zed by GC and GC-MS. The Kuu-Char oil prepared from longer roasting treatment at 200 ℃ was found to have higher amount of α -tocopherol, total phenolic compounds, volatile pyrazines, and volatile furans, and have higher oxidation stability and slower decoloration. Therefore, the contents of α -tocopherol, total phenolic compound, volatile pyrazines, and volatile furans in Kuu-Char oil were found to correlate to the oxidation stability of the oil.The third part of this study investigated the addition of some alkylpyrazines or furans found in Kuu-Char oil or the flavor isolates of the oil, or the methanol extract of Kuu-Char oil to the oxidation stability of the oil. The addition of alkylpyrazines or furans found in Kuu-Char oil to Kuu-Char oil prepared from unroasted seeds were found to not have the antioxidation effect on Kuu-Char oil, whereas the methanol extract of Kuu -Char oil did have significant effect on the oxidation stability. Since Kuu- Char oil samples prepared from longer time roasted seeds contained more phenolic compounds than those prepared from shorter roasting or unroasting treatment. Therefore, phenolic compounds were proposed to be the main antioxdation components for those Kuu-Char oil samples prepared from roasted seeds.



Keywords : 苦茶油 ; 酚類化合物 ; 梅納反應


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