

オイルパームからプラスチック原料に有望な*p*-ヒドロキシ安息香酸を抽出する

Extraction of *p*-hydroxybenzoic acid, a promising raw material for plastics, from oil palm biomass

オイルパームから亜臨界水によってプラスチック原料に有望な*p*-ヒドロキシ安息香酸等の低分子量フェノール性物質を抽出する最適条件と部位別の収率を明らかにした。*p*-ヒドロキシ安息香酸はオイルパームにもともと含有されているが、亜臨界水処理によってエステル結合が加水分解されて収率が著しく増加した。*p*-ヒドロキシ安息香酸の収率が高い種子殻や資源量の大きい葉柄は*p*-ヒドロキシ安息香酸の抽出原料として高く評価できる。

Low-molecular-weight phenolic compounds [such as *p*-hydroxybenzoic acid (PHBA)] extracted from subcritical water treatment of oil palm biomass has shown promise as a raw material for producing plastics. The condition was optimized, and the yield from each part of the oil palm was elucidated. PHBA is a native constituent in oil palm, and its yield markedly increases with the degradation of ester linkages in high-molecular-weight secondary metabolites. Kernel shells exhibited the highest PHBA yields, whereas fronds were appreciated for the comparably huge amount of resources available. These two oil palm parts were highly esteemed as residue materials for the extraction of PHBA.

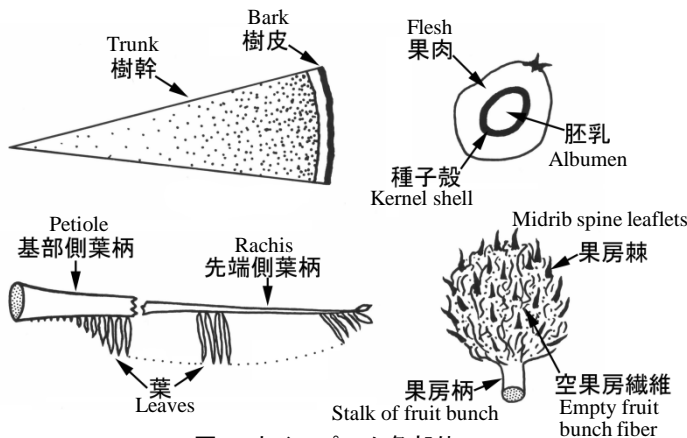


図1 オイルパーム各部位
Fig. 1. Parts of the oil palm

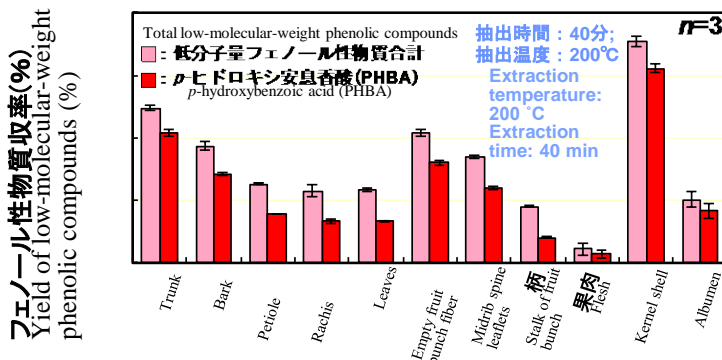


図3 オイルパーム各部位からの低分子量フェノール性成分収率
Fig. 3. Yields of low-molecular-weight phenolic compounds from each part of oil palm

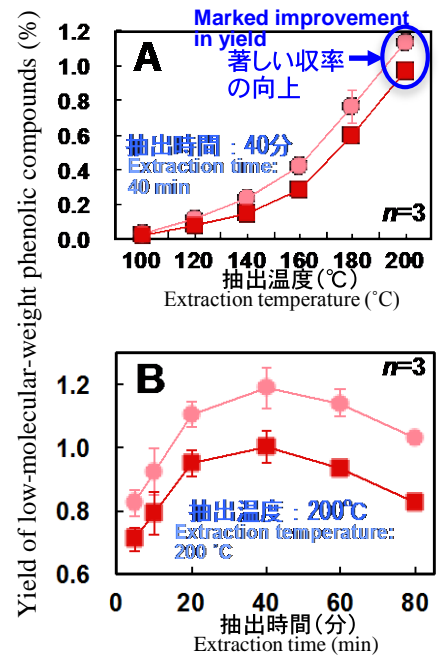


図2 亜臨界水抽出における温度(A)と時間(B)の影響(凡例は図3と同じ)
Fig. 2. Effect of temperature (A) and time (B) on the yields of low-molecular-weight phenolic compounds from oil palm trunk during subcritical water extraction (Figure legends are the same as for Fig. 3)

