

Synthesis of a kairomone and other chemicals from cardanol, a renewable resource[†]

Abstract

Synthesis of a tsetse fly kairomone component (3-propylphenol), a detergent [sodium 2-(dec-8-enyl)-6-hydroxybenzenesulfonate], a polymer additive (1-octene), and a detergent precursor [3-(non-8-enyl)phenol] using cardanol [3-(pentadec-8-enyl)phenol], has been accomplished. Both carbon–carbon double bond isomerization and metathesis methodologies were employed in the syntheses of these target molecules. The kairomone component was obtained, albeit in low yield, in three steps starting with cardanol. Synthesis of a new detergent, sodium 2-(dec-8-enyl)-6-hydroxybenzenesulfonate, was achieved by direct metathesis of cardanol with *cis*-2-butene followed by sulfonation and basification. Finally, synthesis of 1-octene and 3-(non-8-enyl)phenol was accomplished in one