Research on the essential oil of Alpinia speciosa grown in Nagasaki Prefecture

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Alpinia speciosa, a material of essential oil, grows wild in Okinawa. It is also cultivated and used to produce soaps and lotions, being rooted in cultural life in Okinawa. Various effects of Alpinia speciosa have recently been attracting attention, and its essential oil is sold in various places. Growing Alpinia speciosa is also possible in Nagasaki Prefecture. We compared Alpinia speciosa grown in Nagasaki and Okinawa Prefectures (Nagasaki and Okinawa varieties, respectively), and investigated differences in their composition.The main components of the extracts of the Okinawa and Nagasaki varieties were compared with those of Alpinia speciosa and Alpinia uraiensis. Based on the GC analysis of reference materials, the extract of the Nagasaki variety contains geraniol (18.887 min), methyl cinnamate (21.267 min), and terpinen-4-ol (15.435 min), and the extract of the Okinawa variety contains d-borneol (16.762 min). Differences in odorant actions, such as a repellent effect, due to the presence or absence of an odorant, methyl cinnamate, are considered. It is necessary to confirm these components by GC-MS.

Alpinia speciosa has bactericidal and bacteriostatic effects against Staphylococcus aureus and Escherichia coli. Similar findings were also obtained in antibacterial susceptibility tests of reference materials of Alpinia speciosa components. Particularly, favorable antibacterial activities of geraniol, (-)-α-pinene, terpinen-4-ol, 1,8-cineol, borneol, and α-terpinene against Staphylococcus aureus and Escherichia coli were observed.

***Keywords:*** Alpinia speciosa; antibacterial evaluation; aroma; gas chromatography

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