

[P4] Crop Genetics and Physiology

2021年9月9日(木) 12:15 ~ 14:00 Room 4 (Poster) (Crop Genetics and Physiology)

13:15 ~ 14:00

[P4-32] Genetic Variations of Rhizome Yield, Essential Oil Content and Constituents in *Curcuma* Species and Strains

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Rhizomes in *Curcuma* species, used as spices, dyes and medicines, contain essential oil (terpenoid) as medicinal properties. It is reported that essential oil ratio and constituent are different with species and strains. Therefore, the characteristics of essential oil ratio and constituent were compared between Japanese and foreign *Curcuma* species and strains. Foreign turmeric had a lower rhizome yield but a higher essential oil ratio than Japanese turmeric and yellow zedoary. This resulted in no significant difference among these three groups in essential oil content amount, expressed as a product of ratio and rhizome yield. However, some foreign turmeric had a high rhizome yield with a low essential oil ratio, showing a similar character to Japanese turmeric. Major constituents of essential oil shown as relative area percentages were ar-turmerone (25.4-45.7%) and zingiberene (6.8-39.5%) in Japanese turmeric, ar-turmerone (15.5-74.2%) in foreign turmeric, and 1,8-cineole (19.0-63.4%) in yellow zedoary. Detected constituent patterns were different between the Japanese and foreign turmeric, however some foreign turmeric indicated a similar pattern to Japanese turmeric. Differences of rhizome yield, essential oil ratio and constituent pattern among these *Curcuma* species and strains were consistent with a classification indicated by a network analysis from DNA sequence in 4 regions of a chloroplast.