

Species diversity of yeasts in the northern and southern areas of Japan

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Abstract:

Japan consists of four main islands and many others (total 6852) that form a line from northeast to southwest, approximately 45°N148°E to 24°N122°E. The northern part belongs to the subarctic zone and the southern part to the subtropical zone, so that Japan is undoubtedly rich in biodiversity. This project was undertaken to study the species diversity of yeasts in Japan, and to understand the difference of the diversity between the north and south areas, thus contributing to the construction of an inventory database. Ririshi Island in Hokkaido and Iriomote Island in Okinawa were selected as the sampling sites of the northern and southern parts of Japan, respectively. A total of 478 and 423 strains were isolated from soil samples and plant materials collected from Rishiri Island and Iriomote Island, and based on the sequence analyses of the D1/D2 domain of LSU rRNA gene, were tentatively classified into 94 and 97 species, respectively. New species candidates accounted for approximately half of the total species isolated. Basidiomycetous yeasts were isolated more frequently than ascomycetous yeasts in both sampling sites; however, since only nine species (5% of the number of species isolated) were commonly isolated from each site, the microbiota were assumed to be quite different. The number of species isolated in this project accounted for 12% of the number of species in *The Yeasts, A Taxonomic Study*, 5th edition, which will be published in 2010 (around 1500 species). Furthermore, the number of our new species candidates was around 7% of the total species described by scientists to date. This indicated that each of the sampling sites used in this study showed rich and distinctive yeast diversity. Acknowledgement This study was partially supported by a research grant of the Institute for Fermentation, Osaka (IFO).

Key words: species diversity, yeast, inventory, Iriomote Island, Rishiri Island