

スピッツベルゲン島ニーオルスン日本基地北側斜面における 2003年から2010年のコケ生息性 *Pythium* 属菌の種構成と分離頻度の変化

河口 友紀¹, 東條 元昭¹, 星野 保², 貴田 健一^{1,5}, 十倉 克幸^{1,6}, Anne Marte Tronsomo³, 神田 啓史⁴
¹大阪府立大学生命環境科学研究科, ²産業技術総合研究所, ³Norwegian University of Life Sciences,
⁴国立極地研究所, ⁵現:クミアイ化学工業株式会社, ⁶現:朝日工業株式会社

Population changes of moss inhabiting *Pythium* spp. at the north side cliff of Japanese Ny-Ålesund observatory, Spitsbergen Island, Norway from 2003 to 2010

Yuki Kawaguchi¹, Motoaki Tojo¹, Tamotsu Hoshino², Kenichi Kida^{1,5}, Katsuyuki Tokura^{1,6}, Anne Marte Tronsomo³,
and Hiroshi Kanda⁴

¹Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Japan; ²National Institute of Advanced Industrial Science and Technology (AIST), Japan; ³Department of Plant and Environmental Sciences, Norwegian University of Life Sciences, Ås, Norway, ⁴National Institute of Polar Research, Japan, ⁵Present address: Kumiai Chemical Industry Co., Ltd., Japan, ⁶Present address: Asahi Industries Co., Ltd., Japan

Mosses play an important role as primary producer in Polar Regions. *Pythium* spp., which known as soilborne pathogens on many plants, are indigenously habit in moss colonies in Spitsbergen Island, Norway. In our preliminary observation assumed that they actively attack mosses (Hoshino et al. 1999). Purpose of this study was to clarify population changes of *Pythium* spp. in the moss on the Island. Changes of population and species construction of moss inhabiting fungi were investigated in summer seasons from 2003 to 2010 at the north side cliff of Japanese Ny-Ålesund observatory (78° 55'N, 11° 56'E) on Spitsbergen Island. Identification of the organs were based on sequences of the internal transcribed spacer (ITS) of the ribosomal DNA and morphological and growth rate studies. Six unidentified species of *Pythium* which tentatively identified as *Pythium* sp. 1, 2, 3, 4, 5 and 6 have been isolated from the moss colonies. Their total population was increased during 2003 to 2010 (Fig. 1), but patterns of population change was different among the six *Pythium* spp.

極地においてコケ類は植生の主要な位置を占めている。*Pythium* 属菌は土壌伝染性の植物病原菌で、極地のコケに普遍的に生息する卵菌類であり、コケ類に感染するため、その生存に影響を及ぼしている可能性がある。そこで、ノルウェー領スピッツベルゲン島ニーオルスン日本基地の北側斜面のカギハイゴケ群落に生息する *Pythium* 属菌の分離頻度と種構成の変化について2003, 2004, 2005, 2006, 2008 および2010年に調査した。*Pythium* 属菌は素寒天培地や同属菌の選択分離培地を用いて分離した。同定は培養形態と菌糸生育温度およびrDNA-ITS領域の塩基配列に基づいて行なった。その結果、これまでに *Pythium* sp. 1, 2, 3, 4, 5 および 6 の計6つの未同定種が分離された。それらの全体の分離頻度は2003年から2010年にかけて増加が見られたが (Fig. 1), 個々の種毎の分離頻度の変化には種間で違いが見られた。

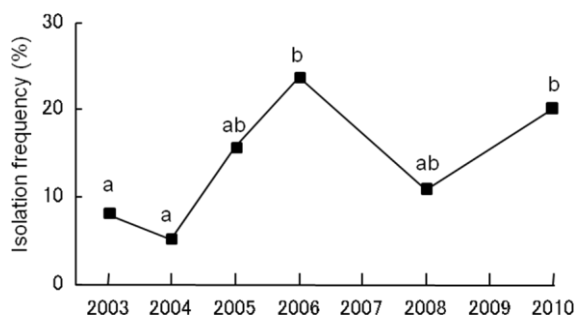


Fig. 1. Changes of isolation frequency of the total population of *Pythium* spp. at the north side cliff of the Japanese Ny-Ålesund observatory, Spitsbergen Island, Norway from 2003 to 2010.

Values followed by the same letter are not significantly different according to Tukey's HSD test ($P < 0.05$).