

Air Purification Capability of Potted *Phoenix Roebelenii* and Its Installation Effect in Indoor Space

Kang Baosheng*, Shin-ichi Shibata, Ayako Sawada,
Takashi Oyabu and Haruhiko Kimura¹

Kanazawa Seiryō University, 10 Ushi, Gosho-machi, Kanazawa City, Ishikawa 920-8620, Japan
¹Faculty of Engineering, Kanazawa University, 2-40-20 Kodatsuno,
Kanazawa City, Ishikawa 920-8667, Japan

(Received January 21, 2009; accepted June 26, 2009)

Key words: potted plant, *Phoenix roebelenii*, air purification, healing effect, work environment

Phoenix roebelenii (commonly called Roebelenii palm or dwarf date palm) is a well-known potted plant, which is endemic to Hachijyo Island in Japan. It is commonly called “Roebe.” Roebe production is an important industry on the island. Most products of this industry are exported to Europe. The export volume has been decreasing since 2001 and the producers of Roebe are badly affected by this decrease. The reason for the decrease is that cheap Roebes from South America are now exported to Europe. Roebe is placed in indoor spaces, namely, offices and homes, because it has a healing effect and an air-purifying function. It is necessary to revitalize the agricultural industry in Hachijyo by characterizing the positive features of the Hachijyo Roebe. In this study, the air purification capability (P_a) considering environmental factors (temperature and light intensity) and the healing effect of Roebe were examined with the goal of increasing the export volume of this plant. Results showed that P_a increased with an increase in room temperature from 21 to 26°C, reaching a range of 15–35. It became clear that Roebe has a substantial purification function. It also became clear that it has a healing effect to some degree. The effect was evaluated using an instrument that measures the amylase activity in the saliva of subjects. The relationship between P_a and the molecular weight of a polluting chemical was also examined. Results showed that P_a decreased as the weight increased.

*Corresponding author: e-mail: kohousyou1208@yahoo.co.jp