

Individual Differences in Pothos Bioelectric Potential in a Living Space

Shin-ichi Shibata*, Takashi Oyabu¹, Shigeki Hirobayashi² and Haruhiko Kimura

Graduate School of Natural Science and Technology, Kanazawa University,
Kakuma-machi, Kanazawa, Ishikawa 920-1192, Japan

¹Graduate School of Strategic Management, Kanazawa Seiryō University,
10-1 Gosyo-machi, Kanazawa, Ishikawa 920-8620, Japan

²Department of Intellectual Information Systems Engineering, University of Toyama,
3190 Gohoku, Toyama, Toyama 930-8555, Japan

(Received October 2, 2009; accepted May 24, 2010)

Key words: plant, bioelectric potential, environmental factor, living space, plant sensor

Plants respond to various environmental factors. Bioelectric potential is used to examine such responses. The bioelectric potential of pothos pots in response to light intensity, atmospheric temperature and air volume have been examined. From our results, it is clear that the potential changes with environmental factors. In this study, two pothos pots were set up in a living space, and the bioelectric potentials of the pots were examined to investigate whether there are any marked individual differences between the two. If there is a noticeable difference, the effective application of the bioelectric potential becomes relatively limited. We found a correlation coefficient of 0.7 between the potentials of the two plants under darkness and the operation of an air conditioner. A proposed summarized value was adopted to analyze the bioelectric potential. Individual differences were identified to some degree, but the characteristics closely resembled each other. The coefficient between the summarized potentials exceeded 0.85 as time progressed. It is considered that plants can function as sensors of environmental factors.

*Corresponding author: e-mail: shin-ichi_shibata@blitz.ec.t.kanazawa-u.ac.jp