Difference of Physiological Characters in Dark Green Islands and Yellow Leaf Tissue of *Cucumber mosaic* Virus (CMV)-Infected *Nicotiana tabacum* Leaves

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Dark green islands (DGIs) are a common symptom of plants systemically infected with the mosaic virus. DGIs are clusters of green leaf cells that are free of virus but surrounded by yellow leaf tissue that is full of virus particles. In *Cucumber mosaic virus* (CMV)-infected *Nicotiana tabacum* leaves, the respiration and photosynthesis capabilities of DGIs and yellow leaf tissues were measured. The results showed that the cyanide-resistant respiration was enhanced in yellow leaf tissue and the photosynthesis was declined, while in DGIs they were less affected. The activities of the oxygen-scavenging enzymes catalase (CAT), peroxidase (POD), and superoxide dismutase (SOD) in infected leaves were significantly higher than those in the healthy leaves, and the enzyme activities in DGIs were always lower than in the yellow leaf tissues. Reactive oxygen species (ROS) staining showed that the hydrogen peroxide content in yellow leaf tissues was apparently higher than that in DGIs, while the superoxide content was on the contrary. Formation of DGIs may be a strategy of the host plants resistance to the CMV infection.

Key words: CMV, Cyanide-Resistant Respiration, Dark Green Islands