

G-77 Induction of disease resistance by the plant activator, acibenzolar-S-methyl(ASM), against Gray mold(*Botrytis cinerea*) in tomato plants. J.S.Lee¹, N.J.Kang², S.T.Seo¹, J.H.Park¹, K.S.Han¹, H.I.Jang¹ ¹National Horticultural Research Institute, Suwon 440-706, Korea ²Protected Horticulture Experiment Station, Pusan 618-800, Korea

The plant defence activator acibenzolar-S-methyl(benzo[1,2,3] thiadiazole -7-carbothioic acid-S-methyl ester, ASM;Bion 50 WG) was assayed on tomato seedlings for its ability to induce resistance against *Botrytis cinerea*, the causal agent of gray mold in tomato. Pre-treatment of plants with ASM reduced the severity of the disease as well as the growth of the mycelium in planta. In ASM treated plants, reduction in disease severity(up to 55%) was correlated with suppression of mycelia growth(up to 46.5%) during the time course of infection. In plants treated with ASM, activities of peroxidase(POX) were determined as markers of resistance. Applications of ASM induced a progressive and significant increase of the enzymes in locally treated tissues. Such responses were expressed earlier and with a much higher magnitude when ASM-treated seedlings were challenged with the pathogen, thus providing support to the concept that a signal produced by the pathogen is essential for triggering enhanced synthesis and accumulation of the enzymes. No such activities were observed in water-treated control plants. Therefore, the slower symptom development and reduction in mycelium growth in ASM treated plants might be due to the increase in activity of oxidative and antioxidative protection systems in planta.

G-78 Management of Strawberry Powdery Mildew by Controlling Micro-climatic Conditions in Plastic Greenhouse Cultivation. Kyoung-Yul Ryu¹, Hyeong-Jin Jee¹, Jong-Ho Park¹, Du-Hei Choi¹, Byung-Mo Lee¹, and Sek-Ki Mun² ¹ Organic Farming Div. National Institute of Agricultural Science and Technology, Rural Development Administration, Suwon 441-707, Korea. ² Icheon-si Agricultural Technology Center, Icheon, Gyeonggi, 467-801, Korea.

Powdery mildew of strawberry caused by *Spaerotheca aphanis* is one of the most serious diseases in the plastic greenhouse cultivation. Because of the disease epidemics depend largely on environmental conditions, manipulation of the microclimates play an important role in suppression of the disease. Effects of a light fan namely 'Baramdori' on control of climatic factors and the disease were investigated in this study. When the fan was installed in a green house CO² concentration around the

leaf surface of strawberry reduced 200ppm at night and increased 50ppm during the daytime. Temperature around the plant increased 0.5~3.5°C and relative humidity increased 5% at daytime and reduced 10% at night time. Control value of the disease by using the fan was 80.1% in comparison with conventional management during November and December. The fruit yield increased 113% and the fruit quality in content of sugar, citric acid and hardness were also improved. Freshness of the fruit at 20°C lasted for 7 days and its decay rate decreased 13%. The photosynthetic rate of strawberry leaf was promoted about 10% and the content of chlorophyll increased 5%. Consequently, application of the light fan in a plastic greenhouse is highly useful in organic farming of strawberry to reduce powder mildew and increase fruit quality and yield.

G-79 Effects of temperature and wetness period on infection of hot pepper by *Colletotrichum accutatum*. J.-P. Paek¹, S.-C. Yun¹, E.W. Park². ¹Dept. of Applied Biological Sciences, Sun Moon University, Asan, 336-708, Korea; ²Dept. of Plant Pathology, Seoul National University, Seoul, 151-742, Korea.

The effects of temperature and wetness period on conidia germination and appressorium formation on hot pepper by were studied using the detached green hot pepper fruits (cultivar 'Dabotab'). The optimum temperature and wetness period were 30°C and 24 hours, respectively. There was linear relationship ($R^2=0.98$) between appressorium formation and conidial germination on fruits of cv. 'Dabotab'. Disease severity was the highest at 25°C, but the infection needs wound. Regression model of appressorium formation on temperature and wetness period required for more than 10% appressorium formation on fruits appeared to be suitable to use for forecasting anthracnose development in the field. The wetness period (W) required for 10% appressorium formation under various temperature (T) regimes was expressed as $W = -0.659 * T + 25.108$.

G-80 Comparison of different types of painting materials on the pruned branches of chestnut tree in preventing from the infection by pathogenic or wood rotting fungi. Sang-Hyun Lee¹, Jae-Phil Lee¹, Kyung-Hee Kim¹, Byung-Ju Moon², and Jong Lyu Lee³ ¹Forest and Shade Tree Pathology Laboratory, Division of Forest Environment, Forest Research Institute, Seoul, 130-712; ²Faculty of Natural Resources and Life Science, Dong-A University, Busan, 604-714; ³Tree Pathology and Mycology Laboratory, Division of Forest