Pre-treatment of albino strain of *Ophiostoma quercus* on pine wood had been proven to be effective in both laboratory and field trials for the biocontrol of sapstain of wood caused by ophiostomatoid fungi (*The Plant Pathology Journal* 2000. 16(4):200-205). In order to keep viability and activity of the biocontrol agent, mycelial slurry from liquid culture of albino strain was harvested, freeze-dried, and then the powderized mycelium was vacuum-packed in polystyrene tubes with screw cap, stored at a cryotank with liquid nitrogen, refrigerator, and root temperature. Viability and efficacy after long term storage under different conditions were estimated and compared by plating diluted suspension(10^{-3}) with sterilized water on solidified culture medium and spraying directly on sterilized wood chips of *Pinus densiflora* and *P. rigida* in petri dishes, respectively. Mycelial growth of albino strain was also compared in various liquid culture media, and the medium composed of the mixture of brown sugar(30%) and yeast extract(3%) showed the best growth among compared.

D-53 Inhibition of mycelial growth of *Botrytis cinerea* by various essential oils. NG Kim, SW Kang, MH Nam, SJ Yoo, HG Kim. Dept. of Agricultural Biology, Chungnam National University, Daejeon, 305-764, Korea;

As nontoxic environmental-friendly bio-fungicides, several essential oils were tested for antifungal activity against *Botrytis cinerea*, gray mold pathogen of strawberry. *In vitro* bioassay, carvacrol, thymol, eugenol and methyl eugenol were selected and the inhibition rate of the mycelial growth on PDA containing each essential oil was achieved at 100ppm with 82.9%, 94.8%, 76.7% and 43.3%, respectively. In the test for volatile effect, carvacrol, thymol and eugenol showed the inhibition rate of 55%, 52%, 34%, respectively in 4 cm distance and methyl eugenol was ineffective with 15%, at 500μg/disk. Under microscopic observation, cytoplasmic outflow of cell wall from mycelia was shown by treatment of eugenol and methyl eugenol, while carvacrol and thymol showed little cytoplasmic outflow and more inhibition of mycelial growth. *In vivo* test, each essential oil had high level of disease suppression with thymol 41.7%, eugenol 33.3% and methyl eugenol 90.7% at 100ppm concentration after treated 3 times every one week. This result presents that the essential oils should be utilized for environmental-friendly cultivation as a bio-fungicide against *Botrytis cinerea*.

D-54 Antifungal activity of asarone against *Botrytis cinerea* isolated from *Acorus gramineus*. NG Kim, JB Kim, HG Kim. Dept. of Agricultural Biology, Chungnam National University, Daejeon, 305-764, Korea