

O-08. Development of Image Database and Diagnosis System for Diseases of Plant. Kyong Hee Lee¹, Sun Jong Joo¹, Jong Jae Hyun¹, Tae Kyoan Kim² and Chang Woo Rho¹. ¹Umsong Greenhouse Vegetable Experiment Station, 3 Deasomyon Umsong, Chunchongbukdo, Korea. 369-820. ²Koshin Media Co., LTD. Rm. 807, Songpa venture Town, Songpa-gu Office 29-5, Shimchon-dong, Songpa-gu, Seoul, Korea. 138-702.

Computer-based image database and diagnosis system of plant diseases, Plant Disease Image Database and Diagnosis System (PDIDDS), was developed to facilitate the use of information about the disease of plant and the accuracy of disease diagnosis by means of images of symptom. This system was used Visual Basic 5.0 as a programming tool and implemented under Windows 95, 98 environments on IBM PC. This system consists of image database and diagnosis program. Image database was divided to database files including code and image and operation modules having input and retrieval functions. Code database consists of 12 tables such as plant, symptom, sign, etc., which was designed to open architecture to update code data. Image database which consists of two tables includes images and text. Disease diagnosis program linked to image database was designed to make use of all data from database and composed of diagnosis process, image display, diagnostic result display, control information input, and diagnosis process editing modules. Diagnosis could be accomplished by confirming images selected through answering questions concerning conditions of diseased plant. Using this developed system, Image database which contain 430 images and diagnosis program for watermelon diseases was constructed.

O-09. Pathogenicity of Root-knot Nematode, *Meloidogyne hapla* on Peony (*Paeonia lactiflora*).

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In the present experiment pathogenicity of root-knot nematode, *Meloidogyne hapla* was tested on Peony (*Paeonia lactiflora* Pall) in pots under green house conditions. One year old seedlings were inoculated with eggs of *M. hapla* at the rate of 1000, 3000, 5000, 10000 and 15000/plant. The growth parameters viz., root weight, length and diameters of main root were decreased significantly with the increase in inoculum density of nematode up to 10,000 eggs/plant. Though, highest reduction in root weight, length and diameters of main root were recorded in those pots inoculated with 15000 eggs/plant; 44.4, 28.6 and 29.6, respectively. Root proliferations (tertiary roots), root-gall and egg-mass indices were increased with the increase in inoculum density of nematode. Though, total population of nematode increased with the increase in inoculum density, but reproduction ratio was negatively correlated with inoculum density, as highest reproduction ratio (34.8) was recorded at inoculum density of 1,000 whereas, lowest (5.3) was found at 15,000 eggs/plant. Thus it may be concluded that plant growth reduction was directly influenced with inoculum density of *M. hapla* up to a certain level, as there was no significant difference between the growth parameters of plants at 10000 and 15000 eggs/plant inoculum density.