treated individuals. The results suggested that the movement-recognition system could be an alternative tool for monitoring chemicals in the environment through movement behavior of indicator species.

B515

Antifungal Activities of Aqueous Extracts from Three *Quercus* Plants

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The antifungal activities of aqueous extracts of three *Quercus* on selected fungi such as *Alternaria mali, Aspergillus* var. *brunneus, Fusarium avenaeum,* and *Pyricularia oryzae* were investigated. The radial extension method was performed for the filamentous fungi. Colony diameters were measured grown for 5 days after inoculation. The strongest antifungal activity was shown in aqueous extract of *Q. aliena*. While the antifungal activity of *Q. dentata* was very specific that observed mycelial growth without sporulation. The aqueous extract of *Q. serrata* resented weak or none antifungal activity. In this test, inhibitory effect on receptor fungi was shown *Q. aliena, Q. dentata,* and *Q. serrata* in order. As a results of different fractionation experiment among EtOAc, H_2O, MeOH, the H_2O fraction only represented antifungal effect.

B516

Vegetation Structure and Soil Environments of Floodplain Wetlands in the Depositional Zone of the Han River

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Vegetation is an important and highly variable element in the stream corridor. The distribution of riparian plant communities would be based on different hydrologic and soil conditions. Characteristics of vegetation and soils in floodplain wetlands of the Han River were studied in Hanam City, Kyunggi-do. The floodplain was seasonally inundated and included features such as floodplain woodland, slough, emergent marsh and wet meadow. The *Salix* communities was well developed in the floodplain woodland. In the slough, various community types such as submerged aquatic beds of *Hydrilla verticillata, Myriophyllum spicatum* and *Potamogeton octandrus,* and free-floating plant of *Trapa japonica*. The emergent marsh included communities of *Phragmites australis, Scirpus radicans,* and *Typha angustifolia*. In wet meadow of the floodplain, communities of *Miscanthus sacchariflorus, Phalaris arundinacea,* and *Artemisia selengensis* were widely distributed. The detrended correspondence canonical analysis showed that the plant community associated with floodplains at the different structural features might vary due to differences in water table, soil particle size, and nutrient availability. We proposed the establishment of natural preserve for the conservation of these diverse plant communities which develop themselves in the deep, rich alluvial soils of the floodplain.

B517

가죽나무의 allelochemicals가 종자발아, 유식물생장 및 항균력에 미치는 영향

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가죽나무(*Ailanthus altissima*)의 수용추출액을 HPLC로 분석한 결과, coumaric acid 외 4종이 분리되었으며 coumaric acid, salicylic acid, chlorogenic acid, r-hydroxybenzoic acid, gentistic acid의 순으로 함량이 높게 나타났다. 가죽나무 추출액에 의해서 돌피의 종자는 발아억제현상을 보이지 않았다. 배추는 추출액 농도 10%와 25% 처리구에서 대조구보다 5% 발아가 촉진되었다. 돌피의 경우는 추출액 농도 10%에서 유근과 유묘에서 각각 104%와 127%로 생장이 촉진되었으나 추출액 농도 25% 이상부터는 생장이 억제되기 시작하였다. 배추는 추출액 농도 50% 처리구에서 유근의 생장이 급격히 억제 받은 반면 유묘에서는 생장억제가 일어나지 않았다. 식물의 유근은 추출액 농도의 증가에 따라 생장억제현상이 확연히 일어났지만 유묘는 유근에 비해 가죽나무 추출액의 영향이 거의 없었다. 가죽나무의 에탄올 추출액을 12종의 토양미생물에 처리한 결과 *Bacillus thuringiensis* subsp. *toumanoffi*, *Bacillus thuringiensis* subsp. *canadensis*에서 각각 30mm, 28mm로 clear zone이 크게 나타났으며 *Bacillus thuringiensis* subsp. *alesti*, *Bacillus thuringiensis* subsp. *kysushensis*, *Bacillus thuringiensis* subsp. *darmstadiensis*, *Bacillus thuringiensis* subsp. *aizawai*에서는 clear zone이 형성되지 않았다.

B518

An Ecological Study on Interactions between a Facultative Annual Root Hemiparasite, *Rhinanthus minor* (L.), and its Host Plants in a Scottish Hay Meadow

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A field study was carried out to determine effects of host vegetation on growth of *R.minor* (Scrophulariaceae), and of a root hemiparasite on its host vegetation productivity and nutrient contents. There were no significant effects of host removal on photosynthetic rate, biomass or nutrient status of *R.minor*. However, removal of above-ground host vegetation imposed a positive effect on parasite height growth. *R.minor* significantly reduced host vegetation productivity by 41.6%, which was mainly due to negative effect on the biomass of grass components, but not non- grasses. There was no significant effect of the parasite on tissue nutrient concentrations (N, P and K) of the host plants. Both total vegetation productivity and total nitrogen pool were independent of the presence of *R.minor*.

B519

저수지에 조성된 자연형 수질정화시설에서 수생식물의 생장 비교

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농업용 저수지에서 수질을 개선하고 생물 조성공간을 조성하기 위하여 수생식물을 이용한 자연형 수질정화시설을 조성하는 생태 기술이 활발히 개발되고 있다. 본 연구에서는 충남 아산시에 위치한 마산저수지에서 조성후 2년이 경과된 수질정화인공습지, 수질정화자연습지 및 인공식물섬에서 수생식물의 생물량, 밀도, 피도, 키와 군집구조를 비교하였다. 콘크리트 수조에 토양을 깔아서 만든 수질정화인공습지에서는 식물의 생물량이 애기부들, 줄, 갈대, 창포, 미나리 습지의 순으로 많았으며, 저수지 연안대의 자연습지에 비하여 생물량이 적었고 식재종 이외의 식물이 많이 침입하였다. 저수지의 주변에 위치한 자연습지를 수질정화용으로 이용하는 수질정화자연습지에서는 생물량이 갈대, 애기부들, 줄, 마름의 순으로 많았으며 각 식물군집은 거의 순군락을 형성하였다. 갈대를 식재한 인공식물섬에서는 연안대의 갈대군집보다 밀도가 높았으며 식재종인 갈대 이외에 미국가막사리, 마름, 고마리 등이 출현하였다. 결론적으로 수질정화습지에