【抄 録】

題 名：土壌温度がネギ黒腐菌核病の発病に及ぼす影響

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要 旨

In a study of the relationship between Welsh onion white rot caused by *Sclerotium cepivorum* in soils in a growth chamber at various temperatures, disease incidence was highest at 14.1°C (83.8%), 15.2°C (96.6%), and 16.4°C (80.0%), indicating that the optimum soil temperature for disease development ranges from 14°C to 17°C. In the field, the disease was first observed when the minimum soil temperature was <20°C. Thus, Welsh onion white rot began when the soil temperature was approximately 20°C and developed rapidly when the temperature was 14°C–17°C.

題 名：鉢物アジサイの屋外管理時における斑点細菌病菌

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要 旨

The infection of potted hydrangea by *Acidovorax valerianellae* during field cultivation was investigated. Consequently, the disease developed in potted hydrangea cultivated in the field, but not those in a greenhouse. Moreover, *A. valerianellae* was isolated from inside the flower bud just after cultivation in the field. The results suggest that *A. valerianellae* infected potted hydrangea during cultivation in the field.

題 名：群馬県におけるブルーベリータマバエの発生消長

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要 旨

ブルーベリータマバエの発生実態を解明するため，群馬県中山間地（利根郡みなかみ町）および平坦地（前橋市）のブルーベリー露地栽培園並びに中山間地（利根郡みなかみ町）の施設栽培園にて，既報の調査より早い時期から性フェロモントラップを設置し発生消長を調査した。みなかみ町の露地園では既報より早く 4 月 4 半旬には誘殺が認められた。誘殺のピークは概ね年 3 回で，2 カ年のピークの時期は概ね一致した。平坦地では中山間地より気温が高く推移した結果，前橋市の露地園では同じ年のみなかみ町より早い時期から越冬世代成虫の誘殺が認められ，誘殺のピークの間隔が短かった。誘殺のピークは年 5 回で，2 カ年のピークの時期は概ね一致した。みなかみ町の施設園では，殺虫粒剤を土壌処理した 2018 年と 2019 年は，土壌処理しなかった 2017 年と比較して誘殺数は概ね低く推移し，急増する時期は遅く，総誘殺数は少なかった。これらの結果は，越冬世代成虫の発生を抑制する防除や少発生時の防除が効果的である可能性を示唆している。

題 名：Predicting disease occurrence of cabbage Verticillium wilt in monoculture using species distribution modeling.

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要 旨

Background: Although integrated pest management(IPM) is essential for conservation agriculture, this method can be inadequate for severely infected fields.

The ability to predict the potential occurrence of severe infestation of soil-borne Disease would enable farmers to adopt suitable methods for high-risk areas, such as soil disinfestation, and apply other options for lower risk areas. Recently, researchers have used species distribution modeling(SDM) to predict the occurrence of target plant and animal species based on various environmental variables. In this study, we applied this technique to predict and map the occurrence probability of a soil-borne disease, Verticillium wilt, using cabbage as a case study.

Methods: A disease survey assessing the distribution of Verticillium wilt in cabbage fields in Tsumagoi village(central Honshu, Japan) was conducted two or three times annually from 1997 to 2013. Road density, elevation and topographic wetness index(TWI) were selected as explanatory variables for disease occurrence potential. A model of occurrence probability of Verticillium wilt was constructed using the MaxEnt software for SDM analysis. As the disease survey was mainly conducted in an agricultural area, the area was weighted as “Bias Grid” and area except for the agricultural area was set as background.

Results: Grids with disease occurrence showed a high degree of coincidence with those with a high probability occurrence. The highest contribution to the prediction of disease occurrence was the variable *road density* at 97.1%, followed by TWI at 2.3%, and *elevation* at 0.5%. The highest permutation importance was *road density* at 93.0%, followed by *TWI* at 7.0%, while the variable *elevation* at 0.0%. This method of predicting disease probability occurrence can help with disease monitoring in areas with high probability occurrence and inform farmers about the selection of control measures.