Evaluation of the systemic activity of agricultural chemicals: Sensitivity improvement and acquiring information from both the surface and inside of leaves

Measurement challenges

While investigating the efficacy of agricultural chemicals, evaluation of the systemic activity of applied chemicals is essential. However, leaves with curved shapes and uneven surfaces limit the measurement itself, and it is not easy to acquire information from the both the surface and inside of leaves.

Approach

The leaf with the applied agricultural chemical was sampled by crushing on Poropare. After that, mass spectrometry imaging through desorption electrospray ionization was performed without any additional processing on Poropare.

Benefits from using Poropare

•Visualizes the distribution of agricultural chemicals on the entire leaf

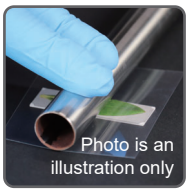
•Improves detection sensitivity

Poropare enables imaging under the actual concentration level compared to measuring the leaf itself.

[Acknowledgement] These results were provided by Nissan Chemical Corporation.

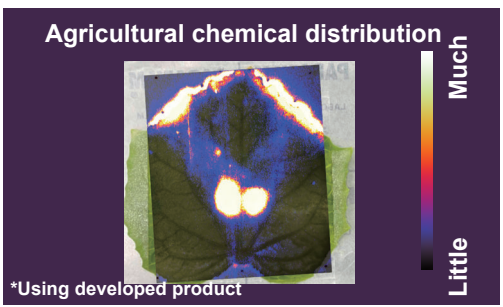
Measurement procedure

After applying a drop of agricultural chemical, the leaf is left for several days



Crush leaf surface

Insert into the instrument !



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Electron Tube/Laser Applied Sales
314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539-62-5245, Fax: (81)539-62-2205
E-mail: msi-t001@hpk.co.jp