

# 3<sup>RD</sup> WORLD PLANT GENOMICS AND PLANT SCIENCE CONGRESS & 4<sup>TH</sup> WORLD MYCOLOGY AND MUSHROOM CONGRESS

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## Takayuki Momma

Iwate University, Japan

### Study of hop stunt viroid – making of hop stunt viroid -free hop plants using apical meristem culture and ultrastructure of hop stunt viroid

Infection of hop plants with hop stunt viroid (HSVd) result in the retardation of the growth rate except for the rate of leaf emergence and the disappearance of the fold like structure over the epidermal cell. Mature cones from HSVd-infected hop plants remained small-sized and the content of alpha acids was half to one third of that of HSVd-free hop cones. In HSVd-infected hop cones, the lupulin glands are distributed most abundantly on the bracteoles and the perianths and their numbers are reduced by at least 60% of that in the HSVd-free control. Scanning electron micrographs confirm that most of the lupulin glands on bracteoles

from HSVd-infected hop cones shrivel severely, but not those from HSVd-free hop cones become withered. Shoot apical meristems of hop plant infected with HSVd were examined for cytopathic changes. No measurable changes in Ultrastructure were found in shoot tip 0.2mm long bearing apical dome and two pairs of the primordia, whereas in the 3rd leaf primordium cell walls were not observed in comparable shoot tips of the uninoculated hop plants on HSVd-free plants obtained by meristem tip culture. We would like to discuss with what we should do after making HSVd-free hop plants and the others.

#### Biography

Takayuki Momma has been given his PhD at the age of 25 years from Tohoku University. 1982-2014: Kirin Brewery Co. Ltd. 2014-2016: Specially Appointed Professor in Iwate University. 2016-the present: The members of International Exchange department in Iwate University. He has published more than 20 papers in reputed journals. Now he organized Momma Hop Lab and is working on hop breeding.

YFA20256@nifty.com