

## **Danish Trials of Quality Monitoring System (QMS) Boomteelt: a Decision Support System for Hardy Nursery Stock Production<sup>©</sup>**

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The appearance and severity of pest infestations or disease epidemics are determined, at least in part, by environmental conditions. Forecasting models may therefore be designed based on occurrence of these conditions. Such models are best used as a support to crop inspections to evaluate the risk of damage. Detecting the appearance of pathogenic fungus at an early stage is often more difficult than detecting insect pests so models that predict disease infection risks at the start of the season are particularly helpful.

Quality Monitoring System Boomteelt is a warning system developed by René van Tol for nurseries in The Netherlands. It was introduced by DLV Plant Holland in 2012, and already more than 40 Dutch nurseries use it.

Quality Monitoring System is used in conjunction with an on-site weather station. QMS uses the geographical position of a nursery to call-up a meteorological institute 10 day weather forecast for that location. The data from forecast can be combined with data collected by the weather station and used to run models that will forecast the occurrence of specific diseases and pests and identify the right time to apply biological or chemical controls.

The data can also be used to help manage crop scheduling, for example by predicting flowering.

DLV Plant Holland will provide a weather station which every hour logs data on eight different climate parameters. These are sent to the server in The Netherlands via the internet. The forecast program estimates the occurrence of spores or pests, and gives suggestions for the pesticides or biological agents to use and the optimal time for applying them during the following 3 days.

Growers can subscribe to several modules for the disease or pests that might be relevant in a particular nursery. Modules are available for powdery mildew, rusts, downy mildew, anthracnose, beech woolly aphid, vine weevils, scale insects, thrips, boxwood psyllid, boxwood leafminer, and boxwood mite.

