

TESTOsolutions

The measurement data monitoring system testo Saveris in greenhouses

Climate control and measurement data monitoring in the greenhouses of the North West German Forestry Research Institute*



Photograph: Testo AG

The cuttings and microcuttings from in-vitro cultures in the greenhouses of the Nordwestdeutsche Forstliche Versuchsanstalt* (NW-FVA) require tailor-made climatic conditions in order to be able to develop optimally. The prerequisites for fast growth and excellent quality are constant temperatures between 25 and 40 degrees centigrade, and an air humidity close to 100 percent (high humidity). testo 6681 humidity transmitters and testo 6614 high-humidity probes monitor the temperature and humidity values in the greenhouses accurately and reliably. The transmitters simultaneously control the high-pressure mist systems which ensure the necessary humidification of the plants. If upper or lower pre-set temperature and humidity values are exceeded, the measurement data monitoring system testo Saveris alarms the person responsible for the process by SMS and e-mail. Daily and weekly reports, also created automatically by Saveris,

provide the scientists at the forestry institute with an overview of the development of all important parameters.

The benefits at a glance:

- Uninterrupted, centralised monitoring of temperature and humidity values
- Use of robust, highly accurate humidity transmitters under high-humidity conditions
- Precise control of high-pressure mist systems in the greenhouses
- Fast alarms by SMS and e-mail when limit values are exceeded
- Automated reporting: Daily, weekly and monthly reports in PDF format
- Display of the current measurement data on a PC
- User-friendly transmitters and measurement data monitoring systems

The task

The Nordwestdeutsche Forstliche Versuchsanstalt* needed measuring instruments in order to be able to monitor the temperature and humidity in its greenhouses precisely and reliably, despite the tough high-humidity conditions. An additional challenge was to provide the sensitive, in-vitro-grown forestry plants and cuttings optimally with water, depending on their development stage. For this purpose, the high-pressure mist systems needed to be switched on and off automatically depending on the respective required humidity limit values. Other requirements of the NW-FVA were fast alarms when upper or lower humidity limit values were exceeded, as well as up-to-date information provided to the scientists thanks to regularly created reports.

*North West German Forestry Research Institute

The solution

Seven testo 6681 humidity transmitters with testo 6614 high-humidity probes monitor temperature and air humidity in the NW-FVA* greenhouses. The high-pressure mist systems are controlled, and switched on and off according to the pre-set humidity limit values, via relay outputs. The transmitters are connected to the company network and



Photograph: NW-FVA

the measurement data monitoring system testo Saveris via Ethernet. Saveris compiles the measurement data into tabular and graphic daily and weekly reports, and alarms those responsible for the process via SMS and e-mail when limit values are exceeded. In addition to this, the data are visible via intranet. Saveris wireless probes record among other things the temperature and humidity values outside the greenhouses.

testo 6681 humidity transmitters regulate and monitor the air humidity in the greenhouses.

Benefits for the customer

Whether poplar, willow, wild cherry, birch or aspen – cultivating fast-growth, especially high-performance forestry plants is no longer a problem at the NW-FVA, even under high-humidity conditions. Simultaneously to the monitoring of the ambient conditions, the high-pressure mist systems are fully automatically controlled by the transmitters, and the sensitive experimental plants optimally provided with water. Risks which arise from the cultivation of costly cuttings from different areas of Europe are thus minimised. Clearly designed measurement re-ports ensure transparency. They



allow the scientists efficient tracing as well as quick and thorough analysis of causes of error.

Cultivation under high-humidity conditions: The in-vitro-grown plants must first become acclimatised to the soil and the conditions outside the sterile laboratory conditions.



Images: NW-FVA

The customer

Die Nordwestdeutsche Forstliche Versuchsanstalt (NW-FVA) is a joint research facility of the states of Hesse, Lower Saxony, Saxony-Anhalt and Schleswig-Holstein. The NW-FVA conducts practical forestry research and advises forest owners and forestry business operators, administrators and pol-

itics. The central mandates are the long-term observation and monitoring of forests, applied research as well as knowledge transfer. The Göttingen and Hann. Münden sites employ 129 permanent staff. Under the brand names silvaSELECT® und nwplus®, the department of forestry genetic resources

in Hann. Münden supplies, among other things, high-quality plantings for poplar, willow, wild cherry, birch and aspen.



Photograph: NW-FVA

Grounds of the department of forestry genetic resources of the NW-FVA with greenhouse facility.



*North West German Forestry Research Institute

Testo Limited

Newman Lane, Alton, Hampshire, GU34 2UR
Email: saveris@testo.co.uk www.testolimited.com