

## ABSTRACT

### PRECISE CONTROL OF COMPUTER CONTROLLED ROOTING SYSTEM BASED SENSOR MEASUREMENT

Murat ÇAĞLAR

M.Sc. Thesis, Department of Agricultural Machinery

Supervisor: Assist. Doç. Dr. Saadettin YILDIRIM

2014, 65 pages

One of vegetative production method is also reproduction with cutting. Inability kept at the desired level by conventional cutting methods of setting parameters rooting success is low as a percentage. In the studies, it is known that humidity value is the most important parameters on increasing the percentage of rooting ability of cuttings. Ambient temperature in the study of computer-aided automatic rooting system and kept at the desired level of humidity values are expressed with increased rooting success of cutting. In this study, measurements of the humidity value in the perlite media on automatic rooting system was compared with RSU adapter tensiometer, Watermark 200SS and Waterscout SM100 humidity sensors. Experiments were conducted in rooting table on low humidity (40%), moderate humidity (60%) and high humidity (80%) with low temperature (18 °C), moderate temperature (22 °C) and high temperature (26 °C) in value. Detecting the humidity of the sample taken from the perlite media were made by gravimetric method. Two moisture sensors in the experiment, it was found that the moisture measurement value was statistically significant differences between the perlite temperatures. The three sensors that measure perlite ambient humidity values on automatic rooting system were compared. As a result of the comparison, the most sensitive measurement of the sensor was RSU adapter tensiometer. Therefore, it is recommended to use the tensiometer RSU adapter tensiometer.

**Key words:** Rooting, automatic control, humidity sensor