

Measure tree size with rugged computers

Accurate data collection for tree nurseries

Tree nursery data collection is faster and more accurate with the TreeHugger system, a new one-handed digital measurement tool built on rugged computers

Challenge

Increase measurement speed and accuracy for tree nurseries that set pricing based on trunk circumference.

Solution

Develop a complete digital measurement and data collection solution with software, measurement tools, and ultra-rugged mobile devices.

Result

Digital measurement tools significantly speed up the measurement process while decreasing paid worker hours and improving data accuracy and security.



A new digital measurement solution

Preparing for the beginning of their sales season can be a stressful, costly month for tree growers. Nurseries price trees are based on trunk circumference — and since crops keep growing throughout the season, growers prefer to measure and assign prices as close to sale as possible to maximize their profits.



A new digital measurement solution using ruggedized PDA's and tablets allows tree nurseries to speed up their end-of-season data collection while improving accuracy bringing both improved inventory data and a less stressful season within easier reach.

Pitfalls of manual data collection

Nursery trees are not perfectly circular or elliptic, so their trunk circumference has always been measured by hand, using a measuring tape, usually with a second fieldworker nearby writing down the data. The workers later re-enter this data into an office database.

Even when taking representative measurements instead of sizing every single tree in a stand, the measuring process produces a huge amount of data. Measuring manually is not only inefficient and time-consuming, but it also comes with abundant opportunities for error.

And since fieldworkers take measurements outdoors, even accurate data is vulnerable to damage and destruction before it ends up safely stored in an office database.

Developing a digital tree measurement solution

In 2010, a joint research project from Holland's Wageningen University and the Tree Centre Opheusden (TCO) established the need for digital measuring equipment to transform the circumference measurement and pricing process. In 2014 the company TreeHug BV was challenged to join the TCO innovation group.

TreeHug has now developed a full suite of products for tree nurseries and growers in the Netherlands and beyond. These include: rugged mobile devices from the Handheld Group, software for manual data input, a high-precision one handed circumference measuring device (the TreeHugger), and a voice input system (TreeVoice). All data is stored and transmitted safely into the back office database.



Upcoming products will allow growers to take measurements of tree height (TreeHeight), as well as the trunk circumference of larger trees with a three point measurement (Tree Point). Also a basic handy TreeMarker is being developed.

Extended Field testing

After developing several prototypes, TreeHug began to build preproduction units for promotion, demonstration and testing. Then TCO monitored field tests at a number of local tree nurseries in order to fine-tune equipment and software functionality.

The result? After a four-year process of design, development, testing and deployment, the system is ready for sale.

Thanks to electronic measuring and direct data storage, nurseries have found that one field worker can now complete tasks that previously required two employees.

Plus, the need to re-enter measurements is totally eliminated, since data is automatically transferred from the field controller to the office inventory management system.



Money may not grow on trees. But TreeHug's smart data collection solutions for tree growers have the potential to save countless worker hours while improving inventory accuracy and data accessibility — and that's almost as good.

tree measurement solutions

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