

## botanic gardens

# How horticulture is evolving with precision technology

Every day, horticultural workers engage with measuring technology, be it landscapers using laser levels to create a fall on a patio, or growers engaging with Global Positioning Systems for field operations. Teagasc students get to experience these technologies first-hand

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Many readers will be able to relate to a construction project which required the marking out of levels and falls. This work requires pinpoint accuracy. Laser levels are used to create gradients when carrying out drainage works or general ground work and can now be found on many farms and work places.

“Total” stations determine angles and distances with ease, and to a very high degree of accuracy. The latest Total stations have a built-in GPS receiver to quickly and easily measure coordinates for the layout of areas such as farmyards and other construction projects. This piece of equipment is relatively user-friendly and can really aid in the accuracy and speed of marking out foundations, landscaped gardens, golf courses, etc.

## Machine Control

Excavators are used on many horticultural and agricultural jobs. Excavators are readily available to hire, with the latest models including the added feature of Machine Control, a technology already commonly used in drainage and construction work.

With machine control, a screen is used in conjunction with sensors and GPS antennas to provide the operator with images of the area he or she is focusing on. This aids the operator to accurately dig, shape and grade the area without over-excavating.

The addition of Machine Control to plant equipment can increase output by 30% and provides the user with a greater level of accuracy and reduced costs. In the future, Machine Control technology will most likely be a standard feature on hired equipment.



First-year students from our Level 7 degree programme can be seen here checking levels and falls while constructing a capillary bed on the campus in Teagasc Ashtown. This is part of the landscape construction module which is in conjunction with Waterford Institute of Technology.



A student operating a 3t excavator. We hope to encourage more use of these machines in the new college year. Courses are available in the Botanic Gardens. These range from QQI accredited level five and six courses along with our level 7 degree course which is delivered in conjunction with Waterford Institute of Technology.

## GPS

In recent years, there has been a number of trials carried out on GPS-based auto-steer systems in conjunction with fairway mowers on golf courses. If these systems become freely available it will have a positive impact as many of the problems that occur in the turfgrass sector are due to compaction and nutrient deficiencies.

## Mobile phone apps

There are now numerous apps which provide the capability to calculate areas of fields and gardens which can

be useful for calibration and pricing of work. Weather apps provide us with up-to-date reports on the move, essential in a country where we can experience all the seasons in one day.

## Conclusion

Teagasc aims to provide its students with the opportunity to learn about and experience the most up-to-date and relevant material.

This includes hands-on experience of state-of-the-art technologies which are being used for common industry tasks.