

Waiariki's School of Forestry

John Deere E-series harvester

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As part of a world first pilot, John Deere has loaned Waiariki Institute of Technology a new E-Series harvester and forwarder simulator.

The simulator will be in use around New Zealand in 2012. Cable Price Limited, FITEC and Waiariki will display and demonstrate the use of the machine at training events, careers expos and other events to showcase the technology involved in modern day harvesting.

The simulator fells virtual trees, de-limbs them, and cuts the stems to length using a complex array of joy-sticks, switches and buttons as would the actual million-dollar E-Series harvester. Then at the flick of a switch, it transforms into a virtual forwarder, loading and extracting the cut logs out to roadside.

The simulator uses both the software and the controls of a real harvester, combined with a high resolution graphic display to teach operators all the functions of a real machine in a safe and controlled environment.

The operator of the simulator can move the harvester into position, grip a tree trunk, and using a Waratah head, make a cut to fell the tree. Once the tree is on the ground the operator then de-limbs the trunk at the touch of a button, the cut the stem into precise lengths based on pre-set instructions previously entered by the harvest manager.

Users are also able to load terrain files and maps based on actual geographic data, making the harvesting operation more realistic to New Zealand's geography.

The simulator produces a real-time feedback report on all exercises showing how many trees have been cut, the volume of timber of cut, the efficiency of use and the accuracy of the operator.

If users seek a bit more challenge they can easily switch the machine to its forwarder simulation function. As with the harvester, the controls are the same as the actual industry machine. Compared to the cutting and preparation of the tree, loading it onto the forwarder deck is a more difficult task.

Both novice and experienced operators have shown great interest in the machine and have very quickly mastered the operating controls and procedures.

The simulator's first major journey will be across the Tasman to be displayed at AusTimber 2012 being held in Mt Gambier, South Australia.

Now the challenge will be to incorporate the simulator into the various training programmes at Waiariki. Waiariki's forest management tutors are currently preparing cut plan and harvesting simulation exercises to allow students to see if their pre-planning is as optimal in the field in 3D as it is on a flat computer screen.

