Portable Data Recorder In The Nursery

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Abstract. -_-__Portable data recorders are used in the nursery for a vast array of data collection. These type recorders act as an electronic notebook and pencil, that allow the operator to enter manually or visually collected data from the keyboard. The type of recorder, information recorded, attachments to the recorders and programming vary from machine to machine and from nursery to nursery. Information is gathered concerning inventory, seedling caliper, lifter and packing production and seedling distribution. Some changes in nursery data collection techniques may be necessary in order for the portable data recorder to be fully effective.

INTRODUCTION

Since the introduction of computers into the nursery, most nurserymen have adapted these strange, but fascinating objects into their nursery as a standard piece of equipment. The amount of work accomplished, the accuracy at which it is accomplished and the undeniable speed of work completion is truly amazing. Portable data recorders work hand in hand with office based computers and should be considered as another piece of nursery equipment.

PRESENT EQUIPMENT

Currently the South Carolina Supertree Nursery is using the Omnidata2/ POLYCORDER3/ Model No. 601. This unit is light weight and can be furnished with a carrying strap and protective case. The POLYCORDER3/ comes with a hardened, water proof plastic molded case. Entry keys are easily accessible, even while wearing light duty gloves. The display screen contains three lines of highly visible characters even in bright sun light. Each unit is equipped with rechargeable batteries that allow the unit to be used during recharging.

A set of digital calipers is used to collect caliper measurements. The calipers can be connected directly to the data recorder. Caliper measurements are entered automatically into the data file by pressing a release button on top of the calipers.

1/Nursery Supervisor, International Paper, South Carolina Supertree Nursery, Blenheim, SC.

2/The mention of a company or trade name does not imply endorsement by International Paper.

3/POLYCORDER is a registered trademark of Omnidata International, Inc.

The calipers can be set to read out in millimeters(mm) or inches (in.) by the push of a button. They also work as a stand alone set of calipers without being connected to the data recorder.

Bar code optically read wands are also available for *use* with this data recorder. Bar code wands can be used to read information ranging from single digits to four (4) lines of data with a limited number of characters per line. Bar code wands need to be purchased by bar code density. A high density bar code wand is needed if a large volume of information is required for each bar code. A lower density bar code wand can be used if smaller amounts of information are required in each bar code. The most common code is Type Code Thirty-nine (39) or code three (3) of (9).

There are several bar code programming packages on the market. These packages are easy to use and menu driven, so even the computer novice can easily be writing bar code programs. The purpose of the program *is* to put the data you want the wand to read into a bar code. The wand can then scan the bar code and automatically load the scanned information into the data recorder. Program packages are supported by most DOS operating systems.

Also purchased for use with our data recorder was the spreadsheet program DATAPLUS1,2/. This program allows easy entry of data, quick editing features, data verification, repeats the previous line, electronic caliper entry, optical wand entry, three lines of data displayed on the screen and column header display.

In order to down load the data from the data recorder a communications package is required. Presently we are using CROSSTALK2,3/ a common package on the market. This package allows the data recorder to communicate with the computer. Field collected data can then be loaded into a text file, spread sheet file, or data base.

PRESENT USAGE

Our data recorder has several usages, but the potential for these units *is* unlimited. The only limiting factors are time needed for training, personnel to be trained, money and commitment.

Two of our biggest usages of the data recorders are seedling inventory and seedling caliper measurements. We also record data from research plots, history plots, herbicide checks, etc.

1/DATAPLUS is a registered program package of Field Data Solutions, Inc.,dba Electronic Data Solutions.

2/The mention of a company or trade name does not imply endorsement by International Paper.

:3/CROSSTALK *is* a registered trademark of Digital Communications Associates, Inc.

Speed and accuracy are both increased by using the data recorders for seedling inventory. Two recorders are used with two people per recorder. Each crew divides the inventory area in half. One crew will take the lower half of the field and the other crew takes the upper half of the field. Walky-talky radios are used for communications between the crews. Each crew concentrates on taking inventory by family, but family order doesn't have to be maintained since sorting can be done later by data base manipulation. Taking inventory using the recorders reduces overall inventory time by as much as 15%.

Seedling caliper measurements are taken throughout the year. These measurements give us an excellent idea on how the seedlings are responding during the growing season. This information is gathered by family and some early decisions on seedling treatment can be determined and implemented. Also by focusing on caliper measurements custom grown seedlings are maintained to meet customer specifications.

Data collection of herbicide check plots, research plots and many other field recorded ideas are made easy using the data recorders. Each data area is set up using the information needed by the nursery superintendent. Then the recorder can easily be set up to match the plots and information to be gathered.

FUTURE PLANS

Since we purchased our data recorders several ideas have emerged for their future use. Only our own insight will limit us to the possibilities of future usage.

Critical parts inventory, chemical inventory and critical supplies inventory are some of the inventories being considered.

Grading belt production, lifter production, insecticide and fungicide plots and cover crop test areas are hoped to be assessed. Packing room production by box count, cooler inventory by box count and seedling distribution tracking are all anticipated to be accomplished by using the bar code wand.

Also available are custom programmers that can enable your data recorder to accomplish just about any task you desire. These programmers are being considered for possible use so we can get the maximum possible benefit from our hand held computers.

This is only a partial list of what we anticipate to do with our recorder and everyday we seem to come up with a new idea.

SUMMARY

Portable data recorders are used in the nursery as electronic notebooks and pencils, that allow the operator to enter manually or visually collected data from the keyboard.

Presented were some of the portable data recorder equipment presently being used at International Paper's South Carolina Supertree Nursery. Also discussed were some of the current uses for these recorders and some possible future ideas.

Data recorders work hand in hand with office based or main frame computers. Software packages can be purchased that allow even the first time user easy access to the recorder for their data entry needs.

A data recorder can be a valuable asset to any nursery program. Some changes in data collection techniques may have to be made for these recorders to be implemented into a nursery program, but the speed of data recovery, accuracy of data received and the amount of extra work accomplished is undeniable.