

Methods to simplify nursery operations and dispatch at Gunnar Christensen's Planteskole[©]

B. Jensen^a

Gunnar Christensens Planteskole, Ringstedvej 92, DK-4173 Fjenneslev, Denmark.

INTRODUCTION

Gunnar Christensen's nursery has been in operation for 50 years. It was started on bare field site in 1962 by Gunnar and Nina Christensen and is now run by Henrik and Lotte, the second generation of the family. The nursery covers 17 ha, including 1.5 ha of greenhouses.

The business specialises in production for garden centres in Denmark and Sweden. Annual production is currently more than 1 million plants, including ornamental shrubs, perennials, herbs, fruit trees and soft-fruit plants, and other edible plants such as asparagus and rhubarb. Sizes range from small perennials in 11-cm pots to large specimen shrubs in 25 L pots.

An integrated approach, based on the use of biological control, is taken to crop protection and plant health. Plants are grown "hard" – in other words, fertilisers rates are used that are no higher than those proven in trials to be of direct benefit to the plant and irrigation is regulated to provide a mild drought stress both in the greenhouse and in field production. These approaches combine to produce robust, compact plants that will tolerate conditions during transport and at the garden centre.

The nursery employs up to 50 people in peak season, from April to June, reducing to just two in January. The workforce typically consists of about 20 regular Danish employees plus three or four Danish students; seasonally there will also be eight Ukrainian horticulture students and about 18 Polish workers, some of whom have been working at the nursery for more than seven seasons.

Management on the nursery aims to make complex or large tasks or operations simple and easy to do by breaking them down into manageable jobs. One reason for this is the number of different languages used by members of the workforce at different times through the year. The nursery's working language is English but even so, "English" can mean different things to different people. It can be difficult to explain Danish nuances in English so they can be understood in the English the Polish workers use. That is why it is important to have precise individual instructions and why simple single operations and deliberate planning is important.

METHODS FOR SIMPLIFYING OPERATIONS

The nursery uses Excel[®] spreadsheets to produce work schedules based on the combined knowledge and experience of all members of the team in the various areas of work. The format makes it easy for anyone to record their knowledge about actual tasks.

In propagation, for example, Excel records are kept of the different types of cuttings used, rooting hormones, biocides, fungicides, and any pest or disease problems. When a member of the team goes to harvest cuttings, they can use this knowledge base, for example to see exactly what time of the season to take the cuttings for best results, how the cuttings should be made, and how many of them to harvest for any given quantity of rooted cuttings required, and if there are special requirements with a specific crop.

The records also provide information on tray size, rooting medium mix, rooting hormone, biocontrols, or fungicides that may be required.

The beauty of the system is that it is continually being updated in the light of experience.

The Excel file can be used to print a label containing all the information we need for a

^aE-mail: bent@gcplant.dk

particular crop of cuttings so that it can be seen by everyone working with that crop. Having this information readily accessible also makes it easy and simple when it comes to training new employees.

Production planning

The Excel information can be used for planning, management, and printing work cards and labels.

In the autumn and winter, for example, the nursery typically buys-in young plants for the coming season's production. The Excel planning sheet will include details of the taxa required and the numbers of each, from which a purchase order is derived and against which we can check deliveries. As the Excel data includes information based on the accumulated knowledge of production requirements and schedules for each crop – taking account of factors such as the potting machine capacity – it also enables delivery dates to be set.

From the Excel sheets estimated labour requirements can also be planned ahead before the start of the busy season, based on:

- Planned production quantities
- Plant handling and transport
- Propagation and production schedules
- Crop care requirements (nutrition, pest and disease control etc)
- Site maintenance

The result gives an overview of the expected need for staff week by week. The knowledge base is also used to guide where on the nursery each crop is to be placed, based on area required, irrigation and fertiliser requirements, dispatch logistics and care in general such as pests and fungal diseases.

From the Excel files we can print work notes covering, for example, potting, pruning, staking, and so-on. It is also possible to print a label that pulls information from the Excel sheet showing a crop's nursery location, its origin (as a cutting or bought-in young plant) young plant size, etc. All of this information is important in terms of managing the work being done to the plants.

For example, for each crop a potting work card will be printed from the production plan to inform the potting team. This shows young plant supplier, young plant size, potting depth, soil mix, plants per pot, pot size and field location.

In other words, all the information you need when you do the potting.

Overwintering logistics

Winters are cold in Denmark so it is essential to plan in advance how crops are protected over winter. The nursery has facilities to create six "climate zones" available for overwintering, including outdoors. The work is planned in August and September and is undertaken from October to December. Again all the experience accumulated over many years is collected in the Excel knowledge base and is used to plan over-wintering each year. Even for crops that can be left outside, it is important to know which need to be pruned or tethered and where to stand them for the winter.

The Excel sheets are used to plan labour requirements, space consumption and record this season's experience for use in the future. The knowledge base ensures the nursery's managers know that the labour is ready when it is needed, and the space is available in the right environment for each crop. It can also take account of where empty space will be required in the greenhouses for early production the following year.

Work management

The Excel-based system gives the nursery's managers an overview of the situation, and a plan enabling them to maintain control even during the busiest times of the season. Planning ahead means the work involved in sales, potting, propagation, keeping up to date with legislation, and dealing with customers is given full attention and so is less of a worry. When dealing with living plants and unpredictable weather or unpredictable customers

planning helps the business to react more efficiently. When 80% of the plans succeed, the remaining unpredictable 20% can be dealt with more easily so that in the quieter parts of the year it is possible to take well-considered and debated decisions so that the plan is ready when the busy times begin.

Being able to record the current season's experiences in a single place makes it possible to plan for things to run even more smoothly the following year.

The system ensures the business can make a deliberate plan that makes the best use of everyone's accumulated experience. That in turn helps to make all of the workers feel part of the team when they know their knowledge is being used in this way.

It is unfortunately necessary to have meetings and at Gunnar Christensens Planteskole these are kept as short as possible, with everyone is standing. A meeting is held every day at a fixed time late in the day, where the team leaders will present the next day's work programme in each department. Priorities for labour needs between departments are discussed. This helps to ensure an understanding of each department's challenges and needs and gives each team leader the opportunity to prepare their own department's work. In good time to put their staff into individual tasks, so they also know the day's programme before they begin.

This process enables everyone to influence and understand the impact of their own work, leading to greater job satisfaction. The nursery is proud of its absentee record – in Denmark, the average is seven sick days per year for workers in the private sector, at Gunnar Christensens it is less than two.

IMPLEMENTATION OF A NEW DISPATCH SYSTEM

The nursery produces more than one million plants in eight different pot sizes, amounting to 1300 different product lines spread over 17 ha of production area. Its original dispatch system assembled plants together for despatch to a customer by gathering them on the Danish trolleys, two trolleys at a time, on the back of a tractor. An employee brought in one customer's order at a time, from the whole area and all employees in the dispatch area were required to choose the right plants from 1,300 taxa, with optimum growth, flower or bud. At the same time the plants were trimmed, labelled and generally prepared for despatch to each garden centre. Under this system it was hard for the individual to be good at the job and it took several years for a new employee to learn, because of the many different plants.

In the new system, which was put into operation from the beginning of the 2015 season, the plants are collected onto trucks. There are four mobile tables on each vehicle so each employee can pick plants for up to four customers at a time. Each nursery worker will now only collect plants in from a small area of the nursery representing 200 or 300 types of plant. When the plants come into the packing shed they are sorted into orders for each customer on roller conveyors to bring all the plants for a customer together in one line where they are prepared, trimmed, labelled and generally quality controlled before despatch to the garden centre.

This is easier and simpler for the workers because:

- Each member of nursery staff has far fewer plant types to become familiar with, which minimizes uncertainty when selecting the plants;
- If a mistake occurs, and it does, it is much easier to find out who is lacking information on what the customer expects for that type of plant;
- There are people in the packing hall who are skilled in making the plants ready for dispatch, and who are trained in watering and packing plants on the Danish trolleys.

Dividing the dispatch process into a series of simple tasks makes training easy and simple which means the nursery can use its unskilled foreign workers from their first day.

FUTURE WORK MANAGEMENT CHALLENGES

In Denmark, as in many other parts of Europe and indeed most IPPS Regions, fewer young people are seeking entry to the horticulture industry. It is increasingly important that those who do enter the industry can be trained not just in growing skills but as supervisors

and managers.

A greater proportion of the staff on Danish nurseries will be untrained seasonal workers, from Eastern Europe. This means it will be more important than ever to make the work simple, uncluttered, and with measurable targets, that are well planned in good time, before the busy season begins.

To achieve that our team leaders must be well prepared both for those immediate goals and those with slightly longer lead-in time.