

Nursery Production Efficiency – The Three W's: Wastage, Weeds and Water

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INTRODUCTION

Wyevale Nurseries in Hereford is a wholesale nursery of hardy nursery stock including field grown trees and transplants and containerised shrubs, ferns, herbaceous and grasses. I have been in my current position for a year and a half, before that I was a management trainee for 2 years after graduating from Pershore College with a degree in Horticulture. My responsibilities include overseeing all aspects of growing, crop protection, stock control and product development for the container side of our business. I am also responsible for biosecurity and plant health for the entire business. This paper will be centred around efficiencies that I try to improve within my job role. For me the three greatest challengers as a grower are the three W's: wastage, weeds and water.

We have a dedicated product development and trial area where we record every detail we possibly can about new products, this helps us decide whether to take the crop on commercially and if so, to come up with

correct growing plans, environmental aspects and watering conditions etc. We try to choose varieties that will consistently perform well and can survive in all UK climates.

Wastage

Our business supplies plants to garden centres and retail nurseries as well as to the amenity landscape market. Pictured here is a scheme we supplied at Bath University. Choosing plants that both markets can use is crucial to reducing wastage.

Shrubs are found to have the most dual marketability and are what we focus most of our attention on. Selecting and growing crops that can be sold in both markets means that we overwinter less and have the maximum sell through possible. Seen is another image of the sort of schemes we supply, Jellicoe Water Gardens.

An example of a new crop for both markets this year are *Euonymus White Spire*,

for which we have the UK propagation license. This crop maintains its variegation as has been used for promotional garden centre sales and has been planted on new housing schemes.

Other examples of dual market crops we have recently introduced is the *Dianella* 'Blue Stream', an attractive strappy plant with glaucous blue foliage and an upright habit. *Dryopteris* 'Jurassic Gold' is a new fern which produces shoots of golden new foliage in the spring.

As all growers will know, pest and disease can be a huge thorn in their side. We have a dedicated team of four crop protection specialists onsite operating daily. We ensure the team are trained to use any equipment necessary and in the identification of pests and diseases on the huge range of crops we do grow.

Utilising the resources available from ADAS and Hutchinsons we have regular consultant visits from experts in horticultural pest and disease management. These visits really help us tailor our plan of attack on more unusual issues that may arise and provide crucial information on changes to chemical products and legislations.

Integrated Pest Management systems are in place to reduce our dependency on chemicals and therefore minimize the chance of chemical resistance within the pest population. We have a solid routine of using nematodes to combat vine weevil and *Atheta* rove beetles for *Sciarid* fly at the propagation stage. We are known for growing *Phormium* and for that reason we use *Phytoseiulus* mites to control RSM, switching to *Amblyseius californicus* during hot temperatures, these specialist predators were invaluable in last year's heatwave. *Aphidius colemani* wasps are also used to control aphid populations.

The team applies predators on crops like *Euonymus* weekly from the end of March to the end of September. These predators are

dependent on daylight hours, so careful monitoring of this will make the purchasing of the natural predators more efficient.

Communication is key and were not always the best at it. Having clear lines of conversation between departments builds relationships and strengthens teams. As simple as it may seem, WhatsApp has completely changed the way we work. We all know how long it can take to get around to replying to the countless emails we receive on a daily basis. Having WhatsApp groups for production, crop protection, sales and marketing has shown to be incredibly beneficial. For example:

- All team leaders, supervisors and managers are on the groups, if the growing team is working in a crop and sees the beginning stages of a red spider mite infestation, a picture goes straight to the crop protection team and the problem is handled quickly before it is able to become a major issue.
- From another wastage point of view, we can of course lose crops to the elements, we are in the process currently of preparing for winter moving. This is a labour-intensive job, but these costs can be reduced by the moving team speaking with the sales teams on which crops need to be sold first, and they are also able to tell them which crops are at risk of going over soonest.
- The quick image sharing means that we can fire off pictures of poor stock received at the potting stage back to suppliers and request credit notes.

Weeds

Every nurseryman's most persistent enemy. Over the past few years we have noticed some species of weeds are building up a tolerance and in some cases resistance to herbicides. We have had a full review of how we use these products and have come up with a

succinct plan of action. The 75-acre nursery has been split into areas, with each area being allocated a different herbicide product to use in the hope of breaking this resistance. It does appear to be working as we have had our cleanest year in the past decade.

As before mentioned we have many different teams on the ground, each of which carry out their own crop walks to generate work lists, moving space, pest and disease identification and weekly 'looking good' lists for sales. This means we have the maximum number of eyes on the ground. A weekly weed list is created which helps us to channel resources into particularly bad areas or crops that need weeding out.

Weeds on young plants or compost is of course an issue, whilst these issues have improved dramatically over the years can still be an issue. If *Oxalis* comes in on young plants, we reject the crop. Zero tolerance, the same is said for mealy bug. We do also carry out regular weed identification tests much to our team's delight.

We are ISO14001 Environmental accredited, so water usage is a key monthly measure for us. We use 3 boreholes primarily and occasionally top up with mains when necessary. Of our 70-acre site a good 30-acre area of that uses purely collected and recycled water. These beds are designed to collect and filter water through to a central sand filter and then through an ozone tank to kill of any microorganisms.

By conforming to ISO14001 standards we have also successfully reduced the amount of chemicals used on crops and increased green products like bio stimulants and natural predators by 40%.

Water

Drip irrigation is used on larger pot sized shrubs. This reduces the need for overhead watering. Understanding your crops watering requirements plays a key role in grouping plants together. Correct bed planning can not only increase water efficiency but also reduce crop wastage as you don't run the risk of over or underwatering.

Our old reservoir has been converted into a natural habitat to promote biodiversity on-site, we have seen nesting birds of various species as well as countless beneficial insects including the ever-important bees.