

## Commercial Production and Showing Daffodils

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### INTRODUCTION

I am often quoted as saying that the UK grows more daffodils than the rest of the world put together. This was certainly true 20 years ago and probably still is today as the UK area has increased slightly and the other major country has decreased its daffodil area. The crop in the UK is grown for both bulb and flower production for home and export markets.

There are 3 main areas of production in the UK. Traditionally growers in the Cornwall (the south-west) were small family units and grew daffodils mainly for flowers with the bulb very much a secondary consideration while in Lincolnshire (the eastern counties) the bulb was all important and the flower a secondary consideration as the bulbs were used for producing early flowers in glasshouses. That has all changed with the flowers being important to all areas as glasshouse production has declined.

There has been a decline in glasshouse forcing of daffodils. Bulbs are sold for pre-packing and sold in garden

centres and multiples and for amenity use. Since the late 60's a substantial export market has been established for bulbs and flowers. There is an estimated 7000t of bulbs exported to countries as far apart as North America and Russia and a large tonnage to The Netherlands. Actual figures for number of bunches of flowers exported is difficult to obtain but I estimate it to be in the region of 50 - 60 million bunches.

Traditionally flower sales were through regional wholesale markets taking flowers from individual growers on a commission basis and prices dictated daily by supply and demand. Today's market is very much led by the multiples who want a consistent product at a fixed price.

Consequently, a large proportion of flowers now go through packers that have contracts with the supermarkets and buy from the growers on a fixed price. However, being a field crop the vagaries of the weather can mean shortages of flowers at critical times such as Mothering Sunday and Easter which

are important to the daffodil market. This partly offset by the fact that the earliest flowers come from Cornwall, followed by Lincolnshire and Scotland bringing up the rear. In years past it was possible for a particular area to have a bonanza due to the effects of supply and demand but with fixed price contracts that is less common.

Fifty years ago, much of the labour to pick flowers was family members and local casual labour looking to earn some pocket money but today most of it is East European supplied by Agencies and will often follow the crop from Cornwall – Lincolnshire – Scotland. Flowers are picked on a piece work basis with pickers earning 10.5 pence per bunch (£10.50 per 100) and a good picker will be on 200 bunches per hour, even when they are picking in the rain with a gale up their backsides.

Once the flowers have been picked, they will be transported to a temperature-controlled store for storage at 2°C prior to transport by refrigerated trailer to the flower packer.

The daffodil crop is unusual when compared to many other agri/horticultural crops in that there is the possibility of streams of income from flowers or bulbs or both. Whereas with most crops one plants the seed and harvests the flowers or food with daffodils there is an opportunity to take flowers and bulbs and if the weather comes wrong and there is a glut of flowers and they are not picked there is an initial loss of income but there is the bulb crop to mitigate that loss. In many cases the bulb crop will be 10-15% better. One might therefore ask why not leave the flowers, but they come on stream at a time of year when cash flow is under severe strain, so it is better to take the hit further down the line.

Daffodils are usually a 2- or 3-year crop with an 8-year gap between planting on the same field. On occasion bulbs may be left in the ground for 4 years. For maximum bulb

yield a 2-year crop is best but for maximum flower yield a 3 year crop is best. A 4-year crop will give an excellent flower crop, but the bulbs harvested will be very small, take a long time to get back to flowering size and are at a high risk for pests and diseases. Bulbs are planted in August/ September after undergoing what is known as HWT (hot water treatment) or sterilizing

This is a process of immersing the bulbs in hot water at 44.4°C for 3 hours. The temperature and duration is critical. The temperature is sufficient to control daffodil eelworm (*Ditylenchus dipsaci*) and large narcissus fly (*Meredon Equestris*) and bulb scale mite (*Tarsonemus*) without damaging the bulb providing it is done at the right time. Once HWT has been completed the bulbs are dried back and planted mechanically. Whereas 50 years ago we would plant bulbs in 6 row beds with every bulb sitting on its bottom (very labour intensive) today the machine scatters the bulb in the bottom of the ridge at a depth of 13cm. Planting rate is normally 15-20 tonne per hectare which should yield 36-42 tonnes after 2 years. Lower planting densities will give a better % weight increase and bigger bulbs however this requires more land and the market for large bulbs is very limited. Daffodil bulbs when sold to pre-packers and in the UK and abroad are sold by weight and obviously there are not so many big bulbs in a tonne as there are medium size bulbs making the price per bulb higher.

### **Two-year schedule**

After 2 years the bulbs are lifted with modified potato harvesters. In Lincolnshire, lifted bulbs go straight into trailers, while in Cornwall and Scotland bulbs are windrowed to allow Mother Nature to part dry bulbs prior to storage. Bulbs are placed onto forced air drying systems to dry prior to grading. Grading is mechanical and will separate the bulbs into sizes according to circumference,

the biggest and smallest bulbs destined for the planter and the mid-size bulbs for market. Most of the large growers (one or two will be growing 1000 hectares) will be growing large quantities of a few varieties but there is also quite a vibrant market for unusual and new varieties.

Although the basic growing techniques are the same the marketing is completely different. There are several growers specializing in this market. They do not market the flowers and bulb sales are through mail order and extensive advertising either through the press or attending shows. Whereas the large grower might have 15-20 varieties I have been growing 400 varieties on 2 hectares. On some of these varieties there may only be 50 bulbs available and price per bulb will reflect this. There are two important shows as far as I am concerned but many others as well.

The most important show is Chelsea Flower Show at the end of May after the natural flowering season is finished so we must manipulate flowering time. When I first started showing in 1986, we managed to use field grown flowers but climate change and the loss of some fungicides means that is no longer possible.

Following several experiments, we have devised a programme to produce flowers when we want. As soon as I get back from Chelsea we start planning for the following year. When we start harvesting bulbs in July whilst grading the 150 bulbs of 150 varieties are pulled out (22,500 bulbs) These are placed in a temperature-controlled store at 22°C where they stay until January 2 when planting commences.

Forced daffodils start with bulbs stored until January. Bulbs planted into good quality soil-less compost approximately 6-cm deep and covered with 1-cm compost. For the post planting programme bulbs go into temperature-controlled storage for 10 days at 10°C followed by 13 weeks at 2°C. Three weeks before the Chelsea show bulbs go into the glasshouse. Although, the initial display only uses 70 varieties we know that some will not make it for one reason, or another so like to have plenty in reserve.

Until we start picking flowers we can water overhead. Hopefully, ten days after housing we will start picking the first flowers. We are however still at the mercy of Mother Nature if we have dull cold days the flowers will not grow even with heat on, but more worrying is if it very sunny and hot the flowers grow too quick and face upwards instead of sideways. We have a selection of early, mid-season and late varieties and they will flower in that order. As a variety starts to flower, we may only get five flowers the first day and then 10 the next day and so on. As the flowers reach optimum size and colour they are cut and put into buckets of water in the store at 2°C.