Hypericum as cut foliage

Interim Report

Year ending 2007

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Background

Hypericum is used as a filler in flower bouquets and as an item in floral designs and is grown for the range of berry colour including red, green, and black. It has become an all year round product in the flower markets and this project aims to evaluate the scope to grow it as a seasonal item. A range of varieties are available in the market which give a harvesting season from August through to September.

The variety 'Magical Sweetheart' was selected to be assessed for yield of marketable stems and to identify management techniques required for a successful crop. This is an early maturing variety with an August harvesting period**.** Some of the cultural techniques adopted for this variety may well be transferable to other varieties.

Plant source

Gebr. Kolster B. V. Boskoop, Holland.

Cultural and management techniques

Hypericum were planted as 9 cm liners in October 2004 at a spacing of 1.5 m x 1.5 m giving 4,444 plants per ha. The recommended spacing in the Netherlands is normally closer at 0.7 m x 0.7 m. The wider spacing gives more air movement around the plant which may help reduce disease spread in our humid climate. Plants cost approximately £1.00 each in 2004 excluding carriage.

In the present trial woven polypropylene fabric was used as ground cover for weed control. Other forms of weed control could be polythene mulch or chemical weed control.

Soil Nutrition

Fertiliser was applied according to soil analysis as a base dressing before planting in 2004 to bring soil indices up to the level required for field grown nursery stock. This involved increasing the soil indices for Potassium and Phosphate to above index 3. Nitrogen was also added at equivalent to 50 kg per ha.

In spring 2006 the woven polypropylene cover was removed and a compound fertiliser containing NPK (12.11.18) at 30 g/m^2 was added as a top dressing The crop was again top dressed with the same compound fertiliser at 10 g/plant in August 2007, much later than expected because of the very dry spring.
Experience elsewhere, especially in Holland, shows that most foliage crops receive 12:10:18 or 16:10:20 at a rate of 100 - 125 Kg N / ha.

A number of sprays of Magnesium sulphate powder (Epsum salts) were applied at 1 kg in 100 litres of water as Hypericum needs heavy applications of magnesium. These were applied with fungicide sprays. It is particularly important to feed Hypericum prior to flowering in June to encourage early growth. Late feeding can cause unwanted secondary growth.

Crop Pruning

The Hypericum plants were cut back to about 10 - 15 cm in the spring. We were careful not to carry out pruning before the spring as this could leave the plants exposed to frost damage. After harvesting in August we left shoots to re-grow and then cut these back in spring to 10 - 15 cm just before new growth occurred.

Pest and Diseases

The main disease is rust and most varieties of Hypericum are sensitive to rust disease but 'Magical Sweetheart' is one variety which is resistant. In our project Hypericum 'Magical Sweetheart' has not exhibited any rust symptoms. For susceptible varieties regular fungicide spraying is required to prevent disease developing.

Regular monitoring of pests and diseases was undertaken by crop walking every week during the May to September period and appropriate sprays were applied as in Appendix 1 and Appendix 2. Some aphids were found in the early growing period of May and June and sprays of pyrethroid insecticides were applied to control these.

Post Harvest Treatment

The most important post harvest activity is to reduce contamination from bacteria and to keep the stems clean using clean secateurs. Stems should not be placed on the ground or unclean surfaces. Buckets and containers should be kept clean with a chlorine product.

Results

Hypericum 'Magical Sweetheart' is an early maturing variety with pink berries. The first stems of Hypericum 'Magical Sweetheart' were harvested in 2006 and harvesting period was from 8th August to the end of August. In 2007 the season was earlier than in 2006 and stems of Hypericum were harvested over a period of 3 weeks from the last week in July to 3rd week in August.

Table 1. Yields of marketable stems per plant for Hypericum 'Magical Sweetheart' from plants established in 2004

Length of stem	50-60 cm	60-70 cm	70-80 cm	Total
2005	nil	nil	nil	nil
2006	16	6	nil	22
2007	6	10	11	27

A range of stem lengths were harvested (see Table 1 above) and these met the specification of local wholesalers. Hypericum is sold in bunches of 10 stems graded by length. Some wholesalers tend to import 70cm stems with no side branches, which are used in larger bouquets.

The 70 - 80 cm stem is termed a 'spray' Hypericum i.e. main branch plus 3 - 4 side stems which is regarded as a premium product and in 2007 had a guide price per stem of approximately 35 p to the local wholesale market. The 60 - 70 cm branches with side stems average 20 - 25 pence per stem wholesale. Actual prices will vary according to

the market being supplied and volumes available. The shorter 50 - 60 cm stems can sometimes be used by florists for example in table top designs.

The Hypericum product harvested in our project tended to be heavier than imported product we observed in the local markets. Florists are not generally familiar with this local product which is more branched.

Conclusions

This variety has established well and has grown satisfactorily in our climate. No problems with winter or low temperature damage were noticed. Yields of stems have been in line with experience in other regions. The proportion of longer stems increased in 2007 as the plants became better established and more vigorous growth occurred.

A range of varieties are required as the market desires 3 - 4 colours of berry including red, black and green. It would be desirable to increase the range of berry colour and extend the marketing season. Thus further work is needed with other varieties and we have planted 2 new varieties, Hypericum 'Magical Red' and Hypericum 'Magical Red Fall' in 2007 to assess their performance.

The challenge with this crop is that local production has a short season and this has to fit in to the buying pattern of an all-year round product. The aim with local product is to supply during the summer season mainly August and September with field grown material.

The aim in the first 2 seasons should be to ensure the plants are well established with the roots well anchored in order to be able to provide sufficient growth to give a good yield. It is important that the soil conditions are satisfactory before planting i.e. that the soil is well prepared with a fairly fine tilth and is free draining. In 2006 stems were shorter as the plant had not fully established. In 2007 as the plants were better established stems were longer.

In 2007 season top dressing of fertiliser was not applied in spring due to the very dry ground conditions. However, later in the summer this resulted in foliage exhibiting nutrient deficiency symptoms such as yellowing of the leaves. In an attempt to correct this we applied Magnesium Sulphate and experimented with various fertiliser applications e.g. foliar feeding and Calcium nitrate in an attempt to restore leaf colour. These treatments in summer were too late to improve leaf colour and this indicated the importance of applying top dressing to Hypericum early in spring. In this respect the quantity of feeding required by a vigorous foliage crop was underestimated (particularly as a substantial part of the plant is removed each season at harvesting).

Acknowledgements

The author would like to acknowledge the following for their technical inputs:
Guy Trelford, Mairead McGuiggan, Teresa Maguire and Dr Raja Harun at Horticulture Development Centre, Greenmount Campus.
Robert Jan Kolster of Kolster Bv for technical advice.

Appendix 1

Management activities recorded on Hypericum Project.

Dates	Operation
04-Apr-06	Fertiliser applied to all plots
06-May-06	Sprayed with Decis (aphids & caterpillars)
25-May-06	Sprayed with Toppel 10
25-May-06	Sprayed with Systhane(rust and powdery mildew)
09-Jun-06	Sprayed with Toppel 10
11-Jul-06	Sprayed with Decis
06-Jun-07	Sprayed with Rose Clear
19-Jun-07	Sprayed Hypericum with Epsom Salts
26-Jun-07	Applied Maxicrop Triple foliar feed to Hypericum
03-Jul-07	Planted out Hypericum'Magical Red', Hypericum 'Magical Red Fall'
05-Jul-07	Sprayed Hypericum with Epsom Salts
17-Jul-07	Sprayed with Decis (aphids, caterpillars etc)
17-Jul-07	Sprayed with Apollo (spidermites)
17-Jul-07	Sprayed with Systhane 6 Flo (mildew)
30-Jul-07	Sprayed with Maxicrop Triple (foliar feed)
01-Aug-07	Harvested 10 Hypericum for yield count
15-Aug-07	Sprayed with Aliette
15-Aug-07	Sprayed with Amistar
15-Aug-07	Sprayed with Majestic
16-Aug-07	Harvested rest of Hypericum
20-Aug-07	Cleaned up Hypericum plot

Note above are for guidance only and a pest and disease control programme should be worked out for each site.

Appendix 2

Chemical names of pesticides used in project

Chemical name	Group	Example of trade name
Deltamethrin	Pyrethroid insecticide	Decis
Cypermethrin	Pyrethroid insecticide	Toppel 10
Clofentezine	ovicidal tetrazine acaricide	Apollo 50 C
Myclobutanil	Conazole fungicide	Systhane 20 WE
Azoxystrobin	Strobilurin fungicide	Amistar
Mancozeb + Metalaxyl-M	Fungicide	Fubol Gold
Fosetyl – aluminium	Phosphonic acid fungicide	Aliette
Iprodione	Dicarboximide fungicide	Rovral
Prochloraz	Conazole fungicide	Octave
Mancozeb	Dithiocarbamate fungicide	Dithane
Natural plant extract	contact insecticide	Majestic