



Scabiosa – Growing Guidelines & Updates - April 2017

Imagine more



Introduction

Scabiosa belongs to the Dipsacaceae family. There are about 80 species most originating in temperate regions.

Previously, the crop grown in Israel was originated from seed, but the product was not uniform and of poor quality. In recent years the Danziger nursery commenced breeding the product as a cut-flower crop and a number of high-quality lines were selected to expand the market.



Botanical Background



S. Atropurpurea

Name: SCABIOSA hybrids

Family: Dipsacaceae

Origin – Various regions in Europe

Natural flowering – End of winter, spring until beginning of summer

Danziger breeding – In the past from two groups of varieties:

- 1) S. Caucasia – perennial with photoperiodic requirement
- 2) S. Atropurpurea – annual, indifferent to day length conditions

And now only from the Scabiosa Atropurpurea

Growing Area & Day Length

- Scabiosa can be grown in tunnels, greenhouses & in open areas
- Best results were obtained outdoors
But in cold temperatures– growth period is significantly prolonged & a structure is recommended
- In the equator region supplementary **lighting is not obligatory**, whereas in countries where day-length is shorter than 11 hours, a lighting system **is needed** in order to encourage induction during the short days in cold climates

With or without light? This is the question



Planting method

- 7-8 plants per square meter in two rows.
Space between plants – 25-30 cm.
- About 4,800 plants / dunam - 48,000 per hectare
- 1-2 supporting nets are necessary depending on season and environmental temp.
During the cold periods, best would be 2 nets of 20X20 cm., & 30X30 cm. on the upper level



Fertilization

- In the early growth stages the fertilizer level of nitrogen potassium proportions should be 1:1 and at a level of approx. 100-150 PPM
- Later on, the proportion between nitrogen and potassium should be 1:1.5
150 PPM nitrogen with 225 PPM potassium. Potassium level is increased especially when growing under structures
- Phosphorus level : 20-40 PPM



Establishment & Pinching

Two methods are possible - with or without pinching

1. Without pinching



2. With pinching-
Plants are ready for pinch about
3 weeks after planting

Advantages & Disadvantages – Pinch vs. No Pinch



With Pinching:

- Plants are well-established
- Many shoots
- Good quality of flowering branches right from the start (harvest)

Without Pinching:

- Flowering occurs earlier by at least a month
- Establishment of the plants throughout the growth, while increasing the potential of yield throughout the season
- In large areas it is possible to use both techniques and by doing so the harvests, the quantities and dates for marketing are regulated /controlled
- **Yield** can reach the amount between-**100,000-150,000** stems per 1,000 sqm & **1,000,000-1,500,000** per hectar

Pinching Process- when done



As the plant elongates to a height of 10-15 cm. above ground level with 4-5 nodes from the base,

Pinching is carried out above the fourth node – about 10 cm. above ground level



Pinching - Process



Extra pinch
optional

First pinch

Additional pinches should be considered for increasing yield and uniformity of growth

Lighting

- Above 11 hours of day-length, natural and spontaneous flowering occurs
 - In regions where day-length is shorter than 11 hours - supplementary lighting of 4-6 hours should be provided, depending on the environment temperatures.
 - When day length exceeds 11 hours there is no need to provide lighting for the Scabiosa plants unless it is very cold or there is a will to accelerate flowering.
 - In the equatorial regions, flowering can occur without supplementary lighting.
 - Using bulbs of **PL** 20 watts continuously for 6 hours was sufficient & economical (energy saver), in order to receive flowering in winter.
- Otherwise- bulbs of 100 watt were perfect in a ratio of 1:3-e.g.- 10 minutes light 20 minutes of darkness for 6 hours



In Equatorial regions- Without supplementary lighting





2. Lighting with incandescent bulbs during the short cold days in the greenhouse- (6 cyclic hours were applied)

3. Also by Using PL bulbs of 20 Watt efficient & excellent results were achieved (6 continuous hours were applied)



Light Application



As in pinch, there are also **two** ways to apply lighting :

1. Very close to planting
2. After plants have established well

The advantage of immediate lighting: causes earlier flowering by 3-4 weeks compared to when applied after plants have established.

The disadvantage in this is: "lean" plants; less yield in the early stages and thinner flowering branches.

Of course both methods can be applied in large areas where one would like to regulate the flowering

An area of Scabiosa where light was given very close to planting & plants were not pinched. Flowering occurred 2-2.5 months after planting

Planting - 7.10.14
Flowering- 4.12.14





An area where light was applied after establishment: 3-4 weeks after planting.
Pinching was done & flowering occurred after 4-5 months from planting & close to winter time

Agro-technique

When trying to speed up flowering when it is delayed ,mostly because of environment temperatures, it is recommended to start drying out the plot when plants reach approx. 30 cm.



With drying out- 80-90 cm.

Without drying out - more than 2 m. above the ground



Drying out

- Drying out is done gradually and at increasing intervals of irrigation.
- It is very important to prevent salinity of the ground at this stage.



Foliage as it appears during the drying out

Harvesting & Post Harvest Treatment



- Harvesting is done with 2-3 whorls open- not completely open flowers
- The flowers will be treated straight after harvest with a solution which contains-
T.O.G 6 - 50ppm + S.T.S 0.2% + Cultar 0.2%
- 4-6 hours in the storage room & then to the cold room for 12-48 hours, still in the same solution. If flowers have to stay longer, for max. 72 hours, it is advisable to move them to Galilo which contains biocide 0.075-0.1%

The flowers should be placed in a standing position throughout the whole process including shipments & marketing. It is recommended for the buyer to keep treating the flowers with solid “Long Life” or similar chemical at home.

Optimal post-harvest treatments resulted a shelf-life of 10 days

Pests and Diseases



Downey Mildew

Recommended treatments:

- Proplant – drenching or spray
Active ingredient: Propamocarb hydrochloride
- Aliette - drenching
active ingredient: Aluminum tris (O-ethyl phosphonate)
- Ridomil Gold – drenching or spray
Active ingredient: Mefenoxam



**Disclaimer:

The grower must follow the directions on the label. All results are the responsibility of the grower only and all the above is merely our recommendation. Trials should be conducted before commercial spraying.



Sclerotinia sclerotiorum

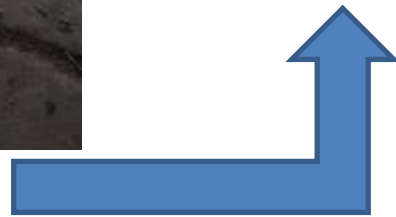
Recommended treatments:

- Bavistin
Active ingredient: Carbendazim
- Switch
Active ingredient: Cyprodinil + Fludioxonil

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Packing



1



Regular packing

2



With the support of paper waste

Targets & achievements

- Obtaining early flowering ✓
- The flowering period is spread over the year ✓
- Improving quality of the flowering branches - length, weight, inflorescence size, color diversity ✓
- Power saving in the greenhouse ✓

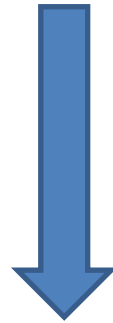


Challenges are what make life interesting
Overcoming them is what makes it meaningful

Targets & achievements

More Targets:

- Keeping the height of the area under control
- The ability to maintain the crop for more than a year
- Virus-resistant
- Resistance to heat
- Continue branding and expanding markets



3 years later 27.3.17 "Downwards" harvest



11.3.14



• SCOOP™



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Thank you
:)

Imagine more

