



# SAFFRON

*“It’s beautiful, tasty and expensive”*



# ROCO Saffron



- 4 Generations of Exporting Finest quality flower bulbs worldwide;
- Expertise on Saffron Bulbs (Crocus Sativus);
- Roco Saffron currently contracts approximately 50 Acres of Saffron fields in the Netherlands;
- Fresh cultivation and pre-treated for excellence Saffron performance;
- We don't pick the flowers!



# Saffron production

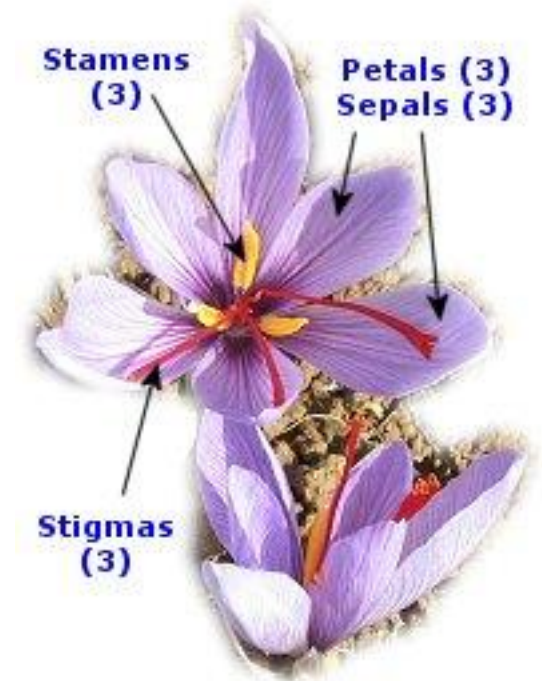
A HIGH VALUE SPICE KNOWN AS RED GOLD



# Only Crocus Sativus provides Saffron



- A delicate highly valued spice, with very interesting medical properties, prescribed in homeopathy
- Saffron provides taste and is a powerful dye
- It is a corm planted at 15-20cm (6-8") depth, multiplying yearly and producing new corms
- Crocus Sativus is a sterile plant, therefore for over 3000 years pure
- Crocus Sativus has a reversed vegetation cycle, leaves come out in September and the plant flowers in October, then dries up in May-June next year
- Saffron flower is composed of 6 purple petals, 3 golden yellow stamens and one red pistil.
- It is this pistil made up of 3 stigmas which when dried up gives the spice saffron



# Why grow *Crocus Sativus* for Saffron ?



- A beautiful flower, creating a beautiful & healthy spice
- Saffron the most expensive spice there is, high value yield
- Accessible, easy to grow & biologically
- Very nice family business, very suitable to be lead by women
- Low volume yield, high monetary value, low investment required
- When stored well, Saffron may be kept for many years & even decades
- Saffron keeps value when stored well, it may offer a way of saving



# How to grow Saffron? 1/2



- Seek **well drained soil**, heavy clay must be avoided, pH 5-8
- Saffron must be in a sunny place, especially in autumn during flowering
- Prepare the ground by tilling or ploughing (about 20 cm) and add some compost or manure. If nitrogenous fertilizer is used it may be applied after planting on the surface.
- Plant in rows or beds
- Crocus Sativus corms may be planted 15-20 cm (6-8") deep, with 10-15 cm (4-6") gap between, from July till mid September as 6-7 year crop
  - If frost applies, deeper is better for frost protection
  - crop will move upward over the years, new corms grow on old corms
- Keep the ground weed free; especially after planting
- Keep soil moist, water if dry in September



# How to grow Saffron? 2/2



- Flowering during October month
- Pick and collect in early morning when flower is still closed
  - Try to pick before flowers open to preserve quality
- Picking the stems at the kitchen table
- Drying to obtain marketable product
- Vegetative development during winter and spring
- Provide water for vital corms producing sufficient flowers
- Leaves dry out in May
- Every 5 years dig up and replant corms



① Growing

② Harvesting

③ Pistil removal

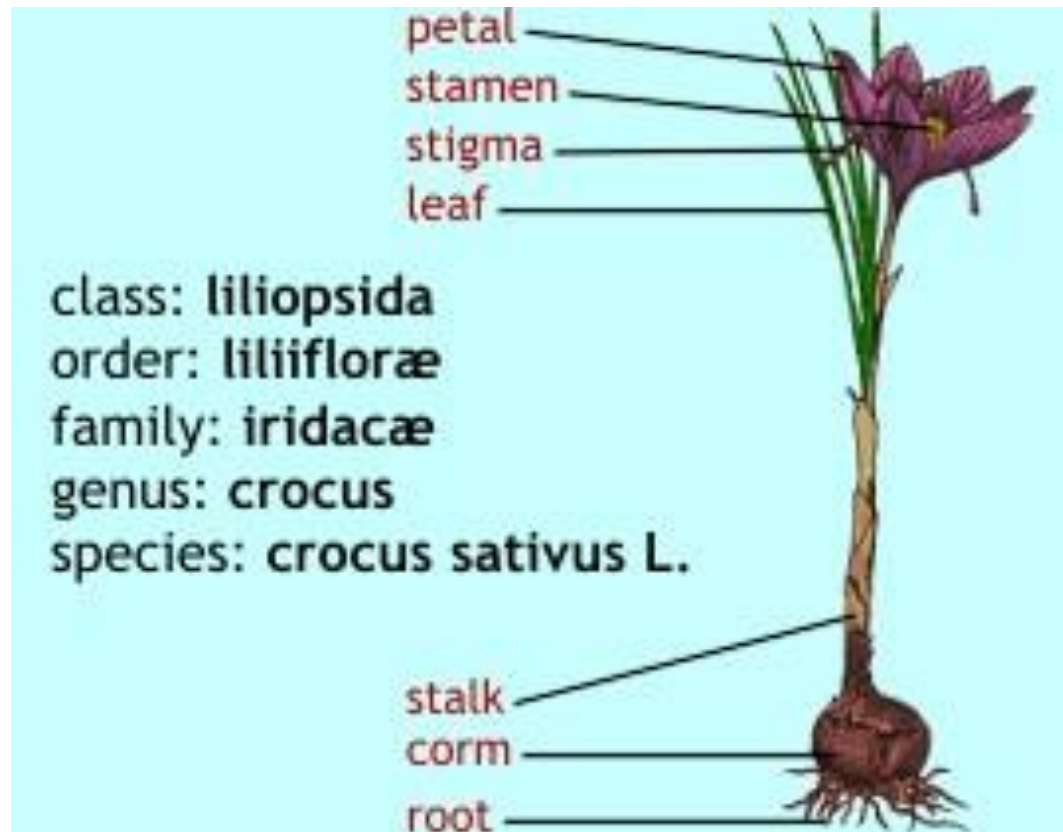
④ Drying

⑤ Storing

⑥ Using



# Crocus Sativus – how it looks like





# Precautions – don't worry it's an easy crop



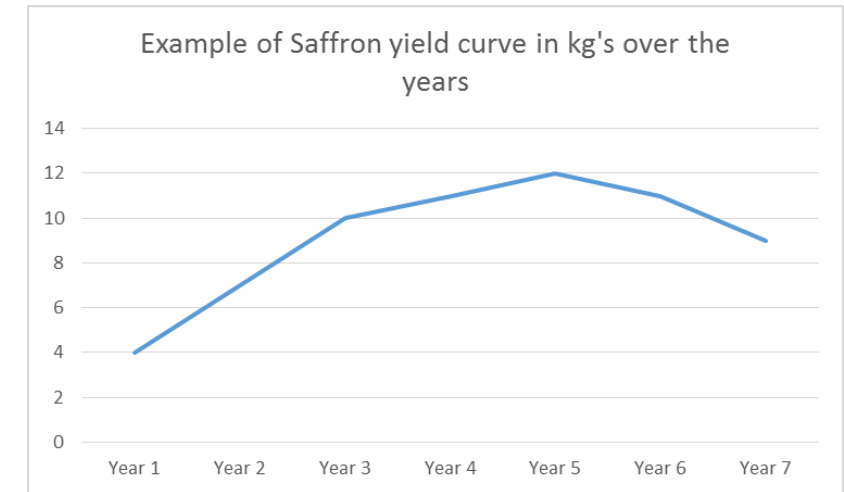
- Predators: wood mice and voles are fond of the corms in winter as well summer. Destroy their tunnels and put traps to limit their number. Rabbits are keen on the leaves and flowers, they may be stopped by a fence.
- Avoiding diseases: **by good quality well drained soil**
  - Crocus Sativus is not vulnerable for fungus on leaves, virus or lice
  - No chemicals required i
- To keep crop healthy one should dig up corms every 6-7 years and replant them all in another fresh field.
- It is better not to use the same field again for 10 years.

# Financials



- Approximately 60 corms per M2, 15 cm deep
- Watering during spring and summer when corms are formed
- Conservative estimate 6-10 kg Saffron per ha. @ 1500-3000 EUR pkg (\*)
- **Top growers may reach 15 kg Saffron per ha.**
- Best is to plant every year a bit to assure continuous production. Production shows a curve over the years.

\* Subject world market situation



	Low yield	Regular yield
Seeds	6000 kg @ E4.50	6000 kg @ E4.50
Harvest	6kg @ E2000	10kg @ E2000
Earn back time	2.25 years	1.4 years

# Conclusion

- Red golden Saffron a high value spice
- Straightforward crop – no chemicals required - BIO
- Not vulnerable for leaf fungus, virus or lice
- Light work, suitable for the full family
- Demand guaranteed
- Saffron keeps value when stored well, it may offer a way of saving



# Crop Retention

- We retain large portion of our crop for continuous supply on the market
- Crop Retention for big size bulbs



# Fresh Crop



- We don't pick the flowers
- Fresh Crop and yearly cultivated bulbs
  - Improved Saffron Yields
  - Improves quality of the bulbs
- Ideal for a long term Saffron production, Growing Saffron is a long term investment
- Source of the Bulbs is the most important for getting started! What is the history of the Bulb?

# Small Bulb Size vs. Big Bulb Size



- Top size bulbs show better yields first year of harvest
- Re-production Capacity on the long term
- Available bulb sizes from 7/8, 8/9, 9/10 & 10/+ CM
- (Measured by the circumference of the bulb)



# Planting Saffron Bulbs



- Crop Rotation
- Inspection Dutch Department of Agriculture



# Harvesting Saffron Bulbs





# Harvesting Saffron Bulbs



- Harvesting the Saffron Bulbs
- Washing the bulbs
- Grading and Sorting
- Pre-Inspection by the Dutch Department of Agriculture
- Drying
- Pre-Treatment in our climate controlled cells
- Ready for Export



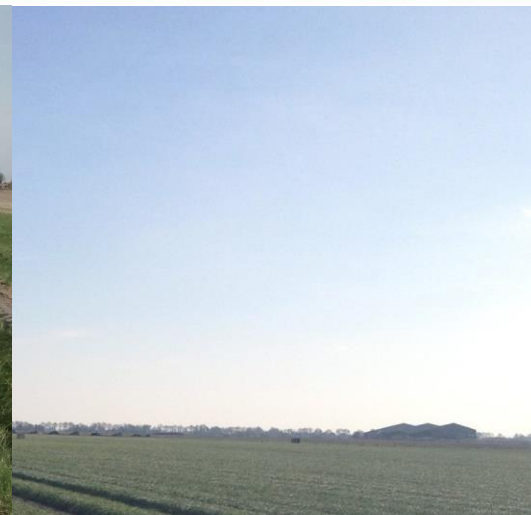
# Pre-Treatment of Crocus Sativus



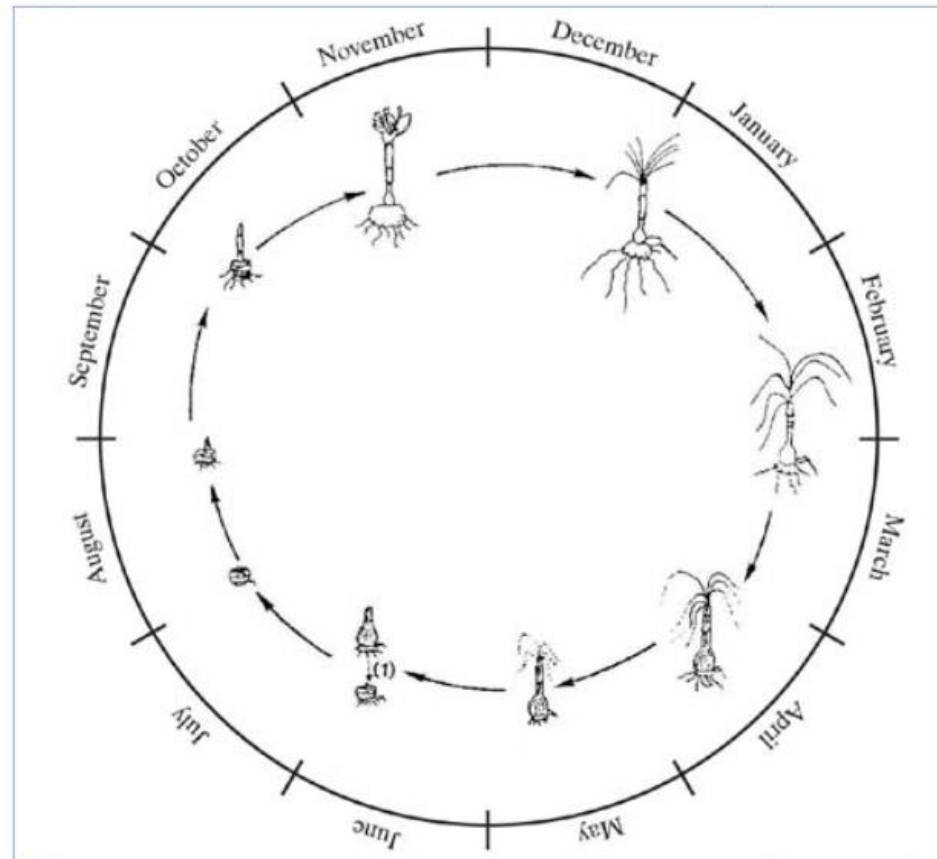
- Climate controlled cells
- Constant Air Movement for storage
- Drying
- Special Temperature treatment after harvesting
- Improved Saffron Yields!



# The Fields in Holland



# Life Cycle of Crocus Sativus



Picture 1. Annual cycle of *Crocus sativus* L. (Lopez, 1989)

# Re-Production of Crocus Sativus



# Southern Hemisphere Markets

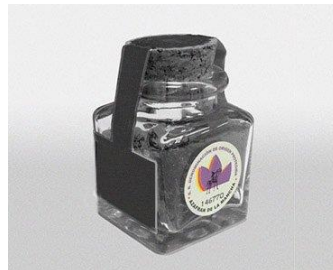


- Climate controlled cells
- Special Temperature Treatment
- Australia, New Zealand, Chili, South Africa
- Shipping in January - February

# Current Trends



- BIO Premium on Organic Grown Saffron
- Co-operations
- Trademark (DOP), This can triple the price of Saffron!
- Increase side products of Saffron
- Increase demand for local grown Products



# Side Products on Saffron





# Some brands Roco Saffron supplies



# After picking the flowers





- FLOWERS GENERALLY APPEAR IN OCTOBER (SLIGHTLY LATER IN THE FIRST YEAR) AND LAST FOR A MONTH.
- TWO METHODS OF HARVESTING ARE POSSIBLE.
- IF ONE ONLY HAS A SMALL NUMBER OF FLOWERS, ONE CAN LEAVE THE FLOWER AND JUST EXTRACT **THE 3 RED FILAMENTS** FROM THE PISTIL WITH SOME TWEEZERS. THIS OPERATION IS CALLED TRIMMING. **BE CAREFUL FOR CONTAMINATION**
- IN THE CASE OF LARGE QUANTITIES OF FLOWERS, ONE SHOULD PICK THE FLOWERS AS SOON AS THEY HAVE BLOOMED AND THEN EXTRACT THE RED PISTILS COMFORTABLY SITTING AROUND A TABLE. **THE BETTER OPTION FOR QUALITY**
- TO TRIM, ONE CAN USE ONE'S NAILS OR SMALL TOOLS LIKE SCISSORS OR TWEEZERS. TRIMMING THE FLOWERS MUST BE DONE SOON AFTER THEY ARE HARVESTED TO MAKE THE TASK EASIER.
- THE YELLOW STAMENS AND PURPLE PETALS HAVE NO USE.



# Drying



- Filaments have to be dried out to be preserved for use.
- Drying can be done by putting the pistils on a sieve in a well ventilated place between 40 to 60 degrees Celsius, for 15 minutes (well ventilated food dryer, in an oven with the door slightly open, under the sun outside)
- When dried, filaments are very light and breakable.
- Fresh saffron, even dried is tasteless. It is recommended that it is placed in an airtight tin away from the light for at least a month before consumption. Saffron may be kept for many years under good circumstances.



# Active ingredients of Saffron



- Saffron essentially contains **three active ingredients**:
  - **crocin**, which determines the **intensity of the colour**,
  - **picrocrocin**, which determines the **power of the flavour**,
  - **safranal**, which determines the **strength of the aroma**.



# How to extend the region for Saffron?



- Plant depth towards 20 cms to protect from frost
- Fleece cloth to protect from frost
- Plastic tunnel greenhouses



# Labor requirements



- Planting maybe done by hand in a furrow made by a basic plow type machine
  - Machine planting is possible, then capacity about 2 ha's per day. 2<sup>nd</sup> hand good and simple machine in Holland 2000-5000 euro.
- Weeding by hand, if chemicals are no issue, chemical curing is possible see next slide.
- Picking flowers by hand, taking saffron from flowers is manual too
- If all by hand 1 kg of saffron requires about 250-350 (wo)men hours. This comes down to 3-4 gram per hour.



# Chemical weed prevention (if desired)



- Just before coming through in the fall – STOMP (Pendimethalin), Cholide IPC (Chloride Profam)
- In spring when weeds start coming every 10 days with 0.5 ltr Goltex (metamitron)
- In de summer when the leaves dried out completely, you may kill weeds with Diquat, Round Up, Glyfosate
- Spraying is not without risks and has to happen with the right circumstances. To prevent accidents, take proper advise with an expert agronomist.



# Water requirements quantified



- Crocus sativus is known for its heat and draught resistance and survives extreme climates, however optimal growing conditions provide optimal production and typically to little water is provided in spring.
- Water requirement in September / October will be limited, keep soil at a decent moisture level. The corm will sprout at its own power, not much water will be required here.
- In spring the growth of the leaves will start, March and mainly April and May the crop will require 20-30 mm minimal for optimal new corm production.
- Sprinklers are preferred, drip irrigation is in certain areas widely available, this works also. Floating is the last option of choice.

# Industries using Saffron



- Food ingredient industry for colouring
- Flavor and fragrance industry
  - Source: <http://www.fragrantica.com/notes/Saffron-55.html>
- Oleoresin industry
- Pharma and Homeopathic industry
- Most of it is sold as saffron as such we believe

## Perfumes and Colognes With Saffron



Aber Al Sharq Al-Rehab



White Saffron Abdul Samad Al Qurashi



Red Saffron Abdul Samad Al Qurashi



Roberto Cavalli Gold Edition Roberto Cavalli



Saffron Veil Phoenix Botanicals



Marrakech Ambra e Zafferano Tesori d'Oriente



East Mid East D.S. & Durga



Joop! Homme Sexy In Pink Joop!



Oudh Qadim Junaid Jamshed



Bennacht Botanical Perfume Escentual Alchemy



Yaguareté Fuegoia 1833



Mukhallat Al-Manara Al-Makkeah Majid Muzaffar Iterji

# The “world” of saffron



- Currently cultivated more or less intense in:
  - Iran, India, Greece, Spain, Italy, Turkey, France, Switzerland, Israel, Pakistan, Azerbaijan, China, Egypt, Japan, Afganistan and Iraq
- World production estimated around 205 Mt per annum
- Iran grows more than 80.000 ha, exporting 137 Mt of saffron (parvis et al 2004)
- Saffron market is not transparent and different origins and quality have different prices. Currently wholesale market is said to be between 1600 and 2500 Euro per kg. Farmers in Italy make Euro 20.000 on a kg basis by selling with provenance.

# Some pictures you might like



# Reserve your bulbs on time!



Shop now for EU Countries Shop now for the USA Wholesale Saffron Bulbs (Crocus Sativus)

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## Roco Saffron Shop

Order our Premium Quality Saffron Bulbs now!

Roco Saffron

Showing all 3 results Default sorting

<b>Saffron Bulbs (Crocus Sativus) 10/+ Top-Size Non-Organic</b>	<b>Saffron Bulbs (Crocus Sativus) Bulb Size 9/10 Non-Organic</b>	<b>Saffron Bulbs (Crocus Sativus) 10/+ Top-Size Organic</b>
\$0,24	\$0,19	\$0,35
<a href="#">ADD TO CART</a>	<a href="#">ADD TO CART</a>	<a href="#">ADD TO CART</a>

**5% Discount for early pre-orders**



**DISCOUNT CODE:  
SATIVUS2017**