

Saffron Pest and Diseases

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One of the main problems in saffron production is the presence of relatively diverse pests including:

Rodents

Insects

Plant mites

disease such as: Corm Rot

&

Weeds



1. Rodents

A. Porcupines



B. Mouse (Mus musculus L.)



C. Moles



D. Voles



E. Rabbits



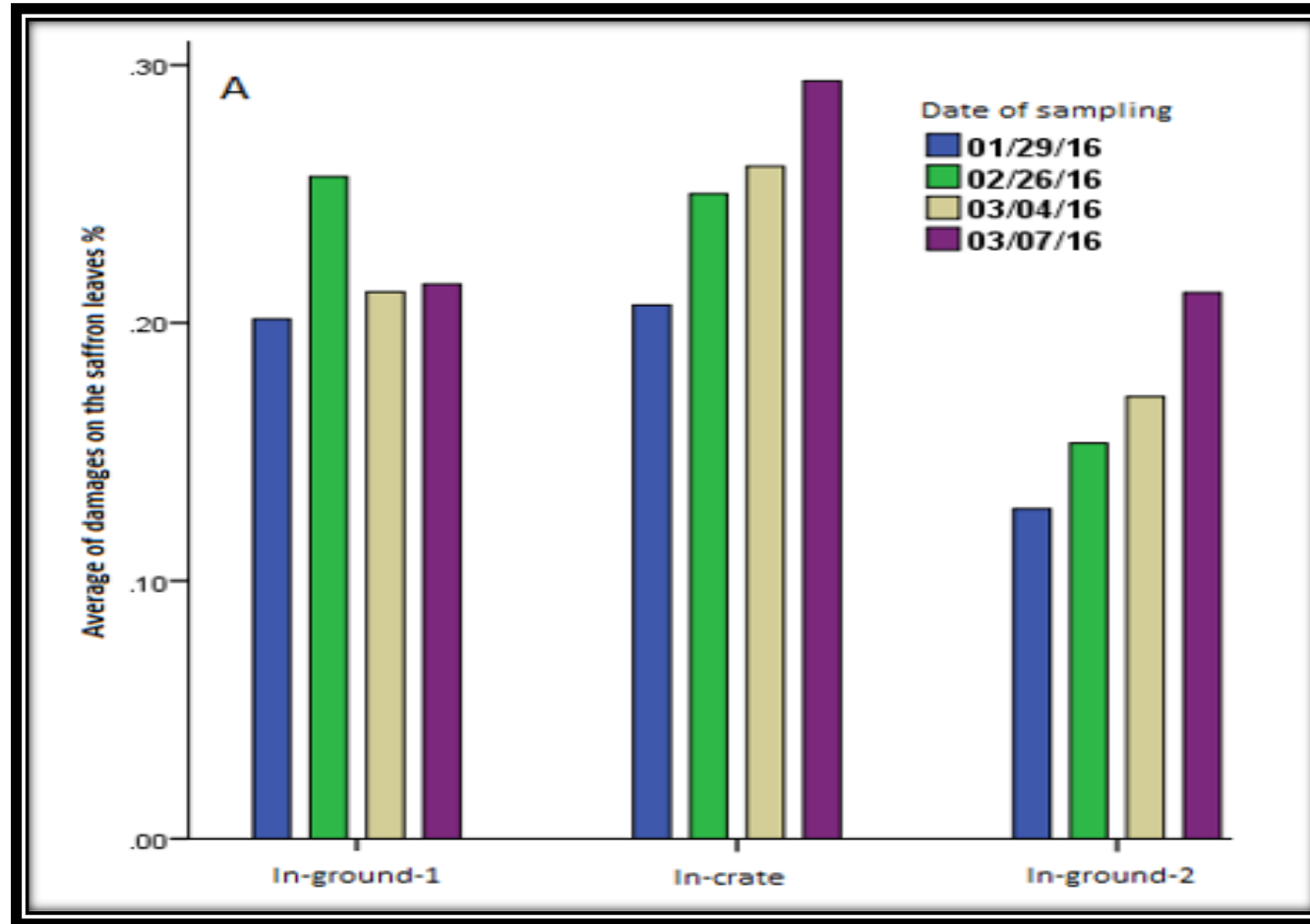
The best method to control moles is using fumigant toxin

1. Rodents

During the winter, when the outdoor temperature was below 32 °F, rodents such as voles and rabbits would feed on leaves and corms as a good source of food.



The most damage was observed between January to February



No significant difference was found between the treatments in the percent of leaves damage

In addition, the level of damage on saffron corms was evaluated between different treatments

The results showed a significant lower level of corm damage in crates compare to in ground corms

	In-ground-1	In-crates	In-ground-2
Mean of damages on the corms (%)	36.25 ^a	12.08 ^b	43.75 ^a
Std. deviation	14.79	8.90	20.68



Why???????



2016 flowering pattern

In Ground



In Crate



Using the certified organic rodenticide
(Agrid₃, registered by EPA for use in organic production)

At mid-March could almost limit the rodent damage on the crops.



However, once the outside temperature was increasing at late March, the activity of rodents decreased, gradually.

2. Mite

A. Saffron Bulb mite (*Rhizoglyphus robini*)



A, Female



B, egg.



C, Larva.



D, Protonymph.

2. Mite

A. Saffron Bulb mite (*Rhizoglyphus robini*)

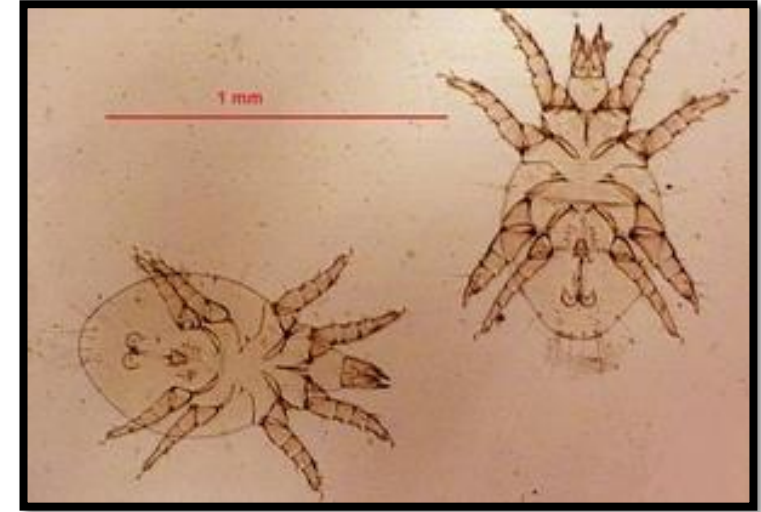
0.6-0.8 mm long

Garlic, Carrot, Iris family, potato, Onion & ...

On an average, the life cycle duration (egg to adult) on saffron corm: 13-14 days
15 generation per year.

Life cycle of male on saffron corm: 80 days

Life cycle of female on saffron corm: 60 days



2. Mite

A. Saffron Bulb mite (*Rhizoglyphus robini*)



They attack saffron corms through wounds .

By producing tunnels and cavity in corms the mite starts reproduction within this cavity.

Infested plants: Shorter and thinner leaves , Yellow leaves



A. Saffron Bulb mite (*Rhizoglyphus robini*)

Prevention

Do not irrigate saffron during the summer

Weed control must be done with care

Choose healthy and uninformed corms for planting

Treat the corms with fungicide - miticide before planting

The depth of planting more than 5 inches can help



3. Insects

B. Thrips



Adult insect on the leaves of host plants such as saffron

The female **lays 80-100 eggs** within plant tissues. They hatch after 4 days.

Pupae stay underground until maturity.

Thrips footprints: White and yellow spots on saffron leaves

Prevention & control: Since the high population of this pest is observed at the end of saffron growing chemical control is not necessary

IPM methods are recommended



3. Insects

C. Blister Beetles



The family Meloidae, the blister beetles, contains about 2,500 species



Food and Agriculture Organization
of the United Nations

Saffron, *crocus sativus* linn. A new host of blister beetle, *mylabris macilenta*(Marshal) (Meloidae: colleoptera) [1996]



***Meloe proscarabaeus* L.**



4. Disease

A. Corm Rots and Root Rot

Corm rots may result from:

Rhizopus, Aspergillus and Penicillium

Fusarium



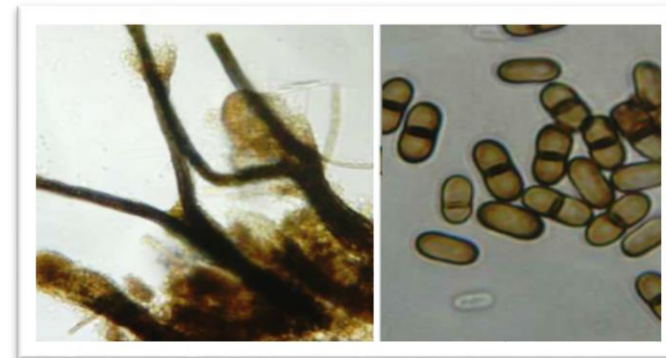
Representative samples of *C. sativus* corms severely affected by fungi

B. Corm Neck Rot

Rhizoctonia crocorum has been reported as the main reason of saffron corm neck rot

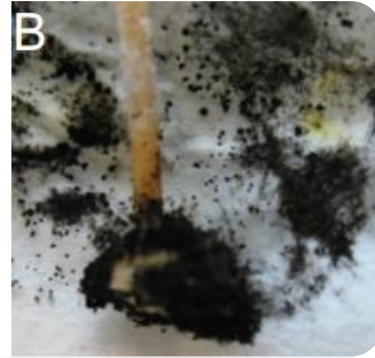
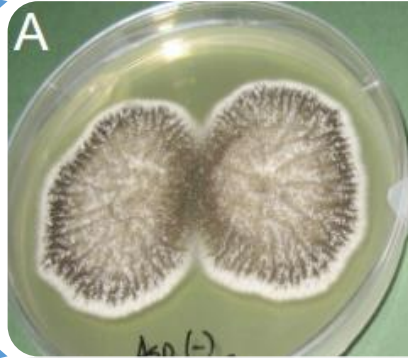
C. Saffron Smut

This agent is a fungus named “*Fumago*”

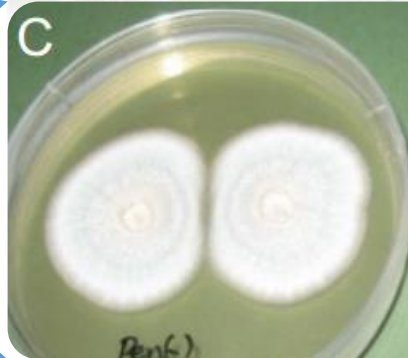


4. Disease

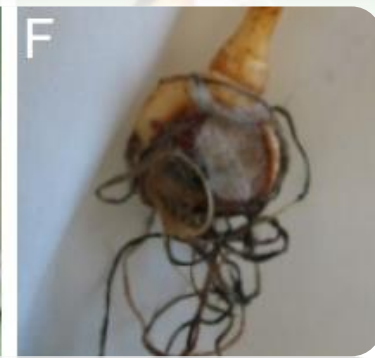
Aspergillus niger



Penicillium sp



Cochliolobus sp





Which kind of
insects and disease
do we have in the St. Albans
?????



Disease :

1. Rhizoctonia
2. Fusarium
3. Aspergillus

Insects :

1. Bulb Mites

Questions?

