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 compared to in ground corms.

<table>
<thead>
<tr>
<th></th>
<th>In-ground-1</th>
<th>In-crates</th>
<th>In-ground-2</th>
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<tbody>
<tr>
<td>Mean of damages on the corms (%)</td>
<td>36.25&lt;sup&gt;a&lt;/sup&gt;</td>
<td>12.08&lt;sup&gt;b&lt;/sup&gt;</td>
<td>43.75&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Std. deviation</td>
<td>14.79</td>
<td>8.90</td>
<td>20.68</td>
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2016 flowering pattern

In Ground

In Crate
Using the certified organic rodenticide (Agrid$_3$; 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)

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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
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

A. Saffron Bulb mite (Rhizoglyphus robinii)
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

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?