



**Leaving Cert Agricultural  
Science**

**Free Notes**

**Potato Blight**

### **Potato blight**

- ✦ This is caused by a parasitic fungus called **Phytophora Infestans**. Belong to Phylum Thallophyta.
- ✦ It affects the leaves and tubers of the potato crop.
- ✦ This parasite survives over winter in blighted tubers. They are heterotrophic.
- ✦ They can become widespread during warm moist humid weather and leads to death of the plant.

### **Symptoms of disease**

- ✦ Blight first appears as a dark brown spot on the tip of the leaf.
- ✦ The spot gets larger and spreads in warm weather.
- ✦ A white mould starts to appear. This is from the hyphae of the fungus.
- ✦ The whole leaf eventually becomes brown and starts to disintegrate.
- ✦ The whole plant will eventually become blackened.

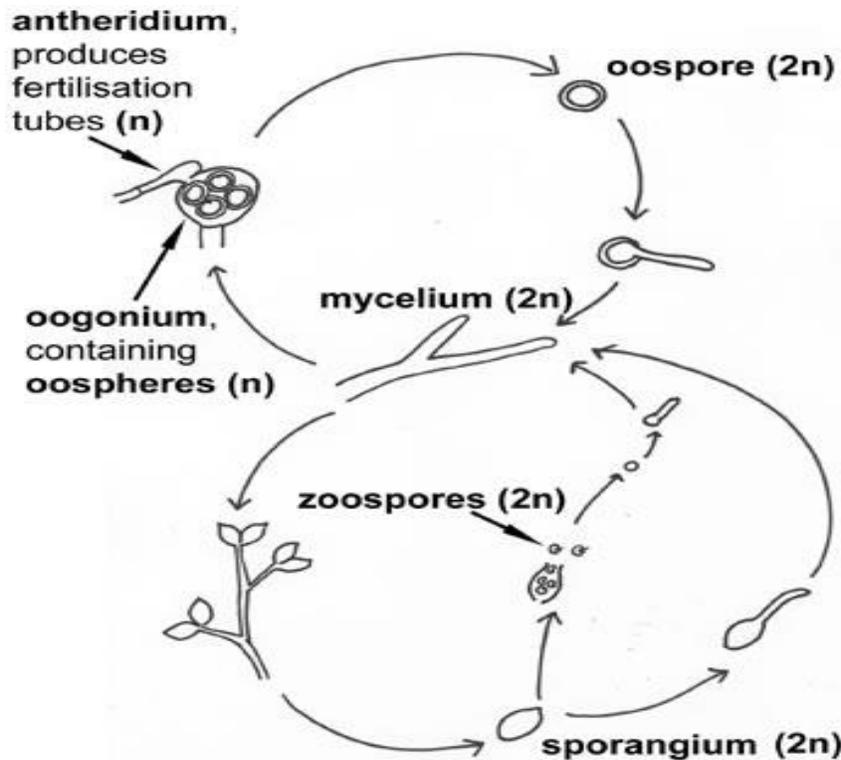
### **Methods of control**

- ✦ It is possible to remove all tubers from the soil as blighted tubers in the ground over the winter will act as a source of infection for the next growing year.
- ✦ Earthing up (piling up if soil around the base of a plant) prevent spores and conidia (young blight) infecting tubers near the surface of the soil.

### **Potato blight continued**

- ✦ Leaves, stalks are killed before harvesting to prevent tuber infestations.
- ✦ Using fungicides such as Bordeaux mixture (copper sulphate + lime) & ditmane before blight season.
- ✦ Try use some blight resistant potato varieties if possible.

### **Life cycle of potato blight**



**Stages of life cycle:**

- + The fungus (blight) strikes the leaves and tubers.
- + A group of **hyphae** called the **mycellium** grow between the tissues and cells of the leaves.
- + Swellings called **Haustoria** absorb nutrients from leaf.
- + The leaf cells then die and this when the **black appearance** is seen.
- + **Hyphae begin to grow through the stomata of the leaf**, this is where transpiration and gaseous exchange of the plant should take place.
- + **Sporangiophore** (outside hyphae) form on outside and the end of it is called the sporangium.
- + **Zoospores & conidium** then germinate if allowed in necessary conditions from the sporangium. Now a germ tube forms.

**Zoospores & conidium are formed as follows:**

Humid & lower temps 12 – 15°C	Humid & higher temps 20 + °C.
<ul style="list-style-type: none"> <li>+ 6 motile zoospores with 2 tails are formed.</li> <li>+ These can swim in water, they are dispersed by water</li> </ul>	<ul style="list-style-type: none"> <li>+ A single spore called a conidium develops.</li> </ul>

- + The zoospores & conidium attack a new leaf by the stomata or from the soil and affect the tuber then.

✚ The hyphae now start to spread through the cells of the leaf and cycle starts again.

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