FIELD PUMPKIN

by Iwan Horde

In 2014, the Dutch grower, Iwan Horde broke the European record for field pumpkin at 164.7 lbs, though the record only held for a short time. A year later he did finish first in Europe.

To be honest, I'm not an expert on growing field pumpkins, even if I did grow the Dutch record. Of course it begins with the right seeds. In 2014 I grew the 103 MacKinnon, 181 MacKinnon and 128 Lyons.

Soil preparation

In 2014 I offered up a piece of grassland to make room for a number of field pumpkins. The grass was dug in with a backhoe and disappeared about 50cm under the ground. After that I added a bit of magnesium (because my plants always seem to have a deficiency) and bone meal to stimulate root growth. After the soil was tilled, I planted out the plants I had germinated in the greenhouse.

Plant size

The plants were slow to start (possibly because of the new soil, or just too cold?) but later on they picked up speed. Each plant was given a space of 15 feet long by 10 feet wide.

Growth

A field pumpkin produces fruit quite easily. My plants had nice big fruit already early on. What I did notice is that not all fruit have the same shape. It is best to select the right fruit according to shape. This means letting the pumpkin grow for a while before deciding which one to keep. In contrast to Atlantic Giants, it is possible to have more than one fruit per plant.

During the growth period I shaded the fruit from the sun to even out temperatures and prevent splitting. During the growing season I was only able to water little and infrequently.

At the end of the season the 103 MacKinnon weighed in at 164.7 lbs, which was almost a doubling of the Dutch record and for a short time the new European record. The 181 MacKinnon weighed in at 124.8 lbs, which placed second. The rest of the field pumpkins were in the 60-80 lb range.

Changes

It might be better to grow larger plants (15x15 ft). In any case, the largest pumpkins seem to grow far out on the main vine and should be selected according to shape with the preference for elongated ones.

Fertilizer

Apart from magnesium and bone meal I used dried manure which is a lot easier to use than the real stuff and is free from diseases and weed seeds.

Water

Like with all giant vegetables, pumpkins need a constant and even supply of water. Use walking boards to prevent soil compaction.

Field Pumpkin Diseases

Field pumpkins are subject to all kinds of diseases, some of them depending on where you live. The five most important diseases for most of Canada and the more northern states are sclerotinia rot, phytophthora blight, powdery mildew, fusarium and virus diseases. Less common diseases, which we won't go into, include bacterial wilt (very rare, and sometimes confused with fusarium which also causes wilting), microdochium blight (only in the middle and southern states), black rot (gummy stem blight) and downy mildew (mostly southern states).

Sclerotinia Rot

The Sclerotinia fungus affects a wide variety of crop plants. Many vegetables including tomatoes, beans, and carrots, as well as cucurbits, are susceptible. The pathogen produces resilient structures, called sclerotia, that survive in our soils indefinitely. Therefore, once an outbreak occurs in a field, the potential for future outbreaks will remain high.

Sclerotinia rot is a cool season disease, hence its appearance on pumpkins in years when summer temperatures are below normal. The most obvious symptoms of Sclerotinia rot occur on pumpkin vines (stems) and fruit. During periods of cool temperature and high relative humidity, a white, cottony mold develops around water soaked infection sites.

Pathogen survival: Fungal structures (sclerotia) in soil and infested crop residue.
Pathogen spread: Wind dispersed spores produced on sclerotia and mechanical movement of sclerotia.
Important environmental factor: Infection tends to occur in dead tendrils or through withered flowers still attached to developing fruit. Therefore, the disease is more likely to occur when extended periods of below normal temperatures and wet weather occur while flowering is abundant.
Disease resistance: None.
Cultural control: Rotations with non-host crops (cereal grains) will limit the potential for damage to subsequent vegetable crops.
Chemical control: Fungicides may be effective if applied to young plants that could be threatened during cool, wet summers

Phytophthora Blight

Phytophthora blight has become one of the most serious threats to pumpkin production in midwestern states. Severe losses have been reported throughout the northeastern quarter of the U.S. during the last decade.

The disease is caused by a fungal pathogen that infects many different vegetable hosts, survives

in our soils indefinitely, and spreads quickly within and among fields in seasons with typical midwestern temperatures and rainfall patterns. Symptoms on pumpkins often are discovered first on the surface of mature fruit, but vines of infected plants eventually collapse and die. The soft rot associated with a rapidly expanding area of white, cottony mold on any part of the fruit is a very characteristic symptom of the disease.

Pathogen survival: Resilient spores that survive in soils indefinitely; infested crop residue.
Pathogen spread: Mechanical spread with soil on farm implements and dispersal from plant to plant via splashing water and wind.
Important environmental factor: Phytophthora blight can be especially severe when late summer weather is cool and wet.
Disease resistance: None.
Cultural control: Cultural practices such as long crop rotations may reduce severity for future crops. Avoiding fields that are poorly drained and have a history of the disease will serve as a deterrent to severe outbreaks. Practices aimed at avoiding standing water in fields will improve efficiency of fungicide applications by reducing disease pressure.
Chemical control: Protective fungicides such as chlorothalonil, mancozeb, and fixed copper may reduce yield losses caused by Phytophthora blight.

Powdery Mildew

Powdery mildew can result in serious losses on squash and pumpkins. The pathogen is believed to overwinter locally. It produces airborne spores that enable new infections to increase rapidly throughout an unprotected field. Powdery mildew is one of the simplest diseases to diagnose. The white, powdery mold first appears on lower stems and petioles. As the disease continues to develop, the white moldy spots occur on the underside of leaves. Symptoms on the upper leaf surfaces usually signal a severe outbreak. The pathogen does not infect pumpkin fruit, but may weaken pumpkin stems.

Pathogen survival: Spores that survive locally among soil and crop residue.
Pathogen spread: Spores are wind-dispersed to neighboring plants and fields. They may be carried in wind currents for miles over large geographic areas.
Important environmental factor: Unlike many other infectious diseases, powdery mildew may become severe during extended periods of dry weather.
Disease resistance: Most jack-o'-lantern pumpkins appear to be quite susceptible. "Big Max" types of pumpkins are less susceptible.
Cultural control: Normal rotations with non-cucurbit crops will help prevent serious early season epidemics.
Chemical control: Several fungicides are effective against powdery mildew. Systemic fungicides can be effective if applied at appropriate times during the season, even if symptoms are not obvious. A mix of 1 part 2% milk and 9 parts water sprayed on and under the leaves can be used preventively but will not help once the disease has spread.

Fusarium Crown & Fruit Rots

Fusarium crown rot is caused by different Fusarium pathogens than those that cause Fusarium wilt diseases, even though wilting is

part of the disease syndrome. Some crown rot fungi also are responsible for a characteristic fruit rot that occurs on pumpkins. Initial symptoms on pumpkins include a general yellowing of the entire plant; over the subsequent 2-4 weeks, the entire plant will wilt, collapse, and decay. Close inspection of stems of affected plants will reveal a water soaked or necrotic area at or just below the soil line. Fruit symptoms vary dependent upon the specific Fusarium pathogen involved. Lesions may be small, dry, and pitted, or larger sunken areas covered with gray or white mold.

Pathogen survival: Resilient spores that survive in soils for indefinite periods of time.
Pathogen spread: Mechanical spread with soil on farm implements from year to year.
Important environmental factor: Conditions responsible for outbreaks of these diseases are largely unknown.
Disease resistance: None reported.
Cultural control: Long rotations of non-cucurbit crops will help to slowly reduce Fusarium populations in soil. Substantial losses will occur if fields with a history of the disease are planted in successive seasons. However, the disease can occur in fields with no history of disease or pumpkin production.
Chemical control: None.

Virus Diseases

Virus diseases of pumpkins (and squash) may be caused by any of several different pathogens including types of the mosaic virus. Leaves of virus-infected plants often appear mottled and distorted. The extent of crop loss due to virus disease is highly correlated with the crop growth stage at which the virus becomes established in the field. Pumpkin plants infected early in their development (near or before the time of flowering) are severely affected and produce few fruit, and most of the pumpkins that are produced are likely to be misshapen or off-color. However, plants infected after fruit reach full size may not show any effect on yield or quality. Late-season pumpkins are especially prone to losses associated with virus diseases.

Pathogen Survival: Viruses survive in infected weed hosts in fence rows, wooded acres, and non-cultivated fields. Some are seed-borne.
Pathogen spread: Insect vectors (especially aphids) and mechanical operations that disturb plants and bruise leaves and vines.
Important environmental factor: Aphids appear in fields during periods of hot, dry weather, but do not necessarily remain in fields for days or weeks.
Disease resistance: None.
Cultural control: Early planted fields tend to have less damage than those that are planted later. Control weeds within and around fields.
Chemical control: Attempts to control insects for virus disease control may be futile, because insects may transmit the virus before insecticides are effective.

Adapted from an article published by Purdue University in Indiana.