

# Issue 7 – August 21, 2024

## Fruit Crop Report



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### Provincial Overview

Raspberry harvest was completed the last week of July / first week of August. In raspberry fields with control applications for spotted wing drosophila (SWD) yields were average. In fields without control applications for SWD, only 10-30% of the berries were harvested. Strawberry yields were above average with harvesting lasting 2-3 weeks for producers. Dwarf sour cherry fields experienced 50-60% yield loss due to SWD, unless berries were harvested before fully ripe. Renovation of strawberry fields is complete. Management practices at renovation include weed control, narrowing rows and renewing leaf canopy by mowing off older leaves (see [renovation of strawberries after harvest](#)). Saskatoon yields were average to below average as there was higher levels of *Entomosporium* leaf and berry spot disease in orchards due to wet weather, especially during bloom. Haskap yields were average with a later harvest period than normal due to a cooler May and June. Early season apple harvesting will start later next week in some orchards. Apple set for many orchards are below average likely due to a combination of factors such as drought stress from the past couple of seasons and pest stress primarily by potato leafhopper in 2023 (see [leafhopper foliar activity on fruit crops](#)).

### Commercial Fruit Crops- Timely Topics

#### Apple Disease: Black Rot / Frog-eye Leaf Spot Disease



Photo A. Mintenko  
Figure 1: Black rot on apple

Reports of black rot (also known as Frog-eye Leaf Spot disease) in apple trees this summer (Figure 1). This may be due to a combination of favourable weather conditions for the disease and drought / insect stress in 2023. The name “frog eye” refers to the concentric rings that form from secondary pathogens around the initial infection, which appear like frog’s eyes (Figure 2). **As long as infections are restricted to the leaves and have not infected branches or fruit, this disease should be of minor concern.**

#### Symptoms



Photo A. Mintenko  
Figure 2: Frog's Eye' on apple leaf.

First leaf spots usually appear within a few weeks after petal fall. Spots first appear as small purplish flecks, which enlarge. Centers of the spots become tan to brown and usually retain a purplish border. Heavily infected leaves turn yellow and drop. The spots are often invaded by secondary pathogens which can enlarge the spots and often give a concentric ring like pattern. Apple varieties are variable in their expression of the leaf spot symptoms. Fruit infections can begin as soon as the bud scales open and at this stage usually begin on the sepals. Infected sepals result in blossom end rot of fruit later

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in the season. After petal drop infections on developing fruit begin as reddish flecks which turn into purple pimples which develop slowly until fruit matures, at which time the spots enlarge rapidly. As the lesions expand, they form a concentric ring pattern on the fruit, usually alternating between brown and black with the rotted tissue remaining firm in texture. Branch cankers appear as slightly sunken reddish brown areas on the bark. Branches can be girdled and killed. These branches will have a dense pattern of black spots just under the peeling bark.

## Disease Cycle

The fungus survives from season to season on mummified fruits remaining on the tree and on dead twigs and branch cankers. Spores are released from infected tissues during wet weather beginning in the spring and continuing through the growing season. Fortunately, the spots on leaves do not release fungal spores that start new infections on fruit or branches. Trees damaged by winter injury are often attacked. Also fireblighted twigs are rapidly colonized by the fungus as well. Optimum temperature for leaf infection is 26°C and optimum temperature for fruit infection is 20 - 24°C.

## Cultural Controls

- Remove pruning debris from the orchard completely.
- Remove apple mummies and prune out dead wood.
- Control fireblight and prune out fireblighted shoots.
- Remember to disinfect cutting tools between cuts with 10% bleach or alcohol solution.
- Prune out overwintering cankers during the dormant season when temperatures are below freezing.

*Edited from the Guide to Fruit Crop Production (Manitoba Agriculture, 2007).*

## Chemical Control

Common controls include fungicides Supra Captan 80, Maestro 80, and Pristine. For a full fungicide list search [OMAFRA Crop Protection Hub](#), confirm on label that product is registered for use in Manitoba (i.e. not listed for Eastern Canada use only).

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## High Tunnel Strawberry Trial Update

Bulk of Cabot strawberry harvesting in the high tunnel at Portage la Prairie (Figures 3 and 4) was completed the 2<sup>nd</sup> week of July.

### Summary of Early Season Strawberry Production in High Tunnel: 2024 Results

**Objective-** evaluate potential of early season strawberry production in the high tunnel with the target harvest period of the month of June before field strawberries are harvested in late June/July.

### Planting Infrastructure

- Wooden A-frame with 10 foot standard house eavestroughs, 10 per frame
- Non-soil potting mix- peat/ perlite/ vermiculite
- 50 L potting mix used per A-frame- Sungro Sunshine Mix#1 or Pro-mix BX

- Cabot June-bearing strawberry cultivar with 40-50 plants per trough and Dynamik Day-neutral strawberry cultivar with 30-40 plants per trough.
- Fertilized weekly at half rate with water soluble 10-52-10. Once established a weekly half rate with water soluble 20-20-20 was applied.
- No insecticides or fungicides were needed.
- Drip-tape watering system on a daily timer.

### Planting methods

June-bearing cultivar **Cabot**-Bare-root plants started in the high tunnel early May- showed the most potential with great plant vigour, high yields starting in mid-June until mid-July, good berry size and flavour comparable to Manitoba field strawberries. Was covered with frost fabric/tarp when risk of frost was high. Next year will plant end of April/ first week of May for an anticipated earlier harvest starting early June and lasting until the first week of July.

### Potential Markets

Quart sized sales to maximize price/ lbs to:

- 1) On-farm Pre-pick
- 2) Farmer Markets
- 3) Local Produce Stores
- 4) Local grocery stores/ restaurants quart sales

### Profitability

If a 100 foot high tunnel planted to strawberries using this method (very conservative rough estimates)...

High Tunnel Option A	40 plants per tough 10 troughs per ten feet <b>3600 plants</b> (= ~1/2 acre field planting)	<b>Gross revenue-</b> Cabot 340lbs = 85 4L baskets (4lbs/basket) \$30 pre-picked basket = <b>\$2500</b>
High Tunnel Option B	40 plants per tough 20 troughs per ten feet <b>7200 plants</b> (= ~1 acre field planting)	<b>Gross revenue-</b> Cabot 680lbs = 170 4L baskets (4lbs/basket) \$30 pre-picked basket = <b>\$5100</b>
Compared to a Strawberry Field Planting	~1 acre field planting- 7200 plants	Gross Revenue-Field low yield 2,500lbs/ac= 625 4L baskets \$20 U-pick basket= \$12,500

High Tunnel Strawberries Pros	High Tunnel Strawberries Cons
High quality large berries with good flavour	Infrastructure costs
Early market premium prices- early season cash flow before moving into field harvesting	Late frosts/ cool spring can delay plant growth requiring frost protection measures
No disease issues/ no fungicide sprays- very long cooler shelf life	Less gross revenue and yield per acre than field strawberries
No insect issues/ SWD not an issue as harvesting is early before SWD populations increase	Labour for pre-pick



Photo A.Mintenko

Figure 3: High tunnel planting of 'Cabot' June-bearing strawberries.



Photo A.Mintenko

Figure 4: High tunnel at the Research Orchard, Portage la Prairie AAFC Station.