INSECT UPDATES

False Chinch Bugs overwinter on wild mustards in alfalfa fields. The first cutting of alfalfa is underway and according to past experience false chinch bugs will move from these alfalfa fields to nearby potatoes. So, be on the alert. If the potatoes are in early to mid bulking, they may have to be treated. Recently Diazinon has been reported to work great. Other possibilities are Dimethoate and Thiodan.

Potato Psyllids have been a problem the last two years. They overwinter in the Rio Grande River Valley. Their appearance in Colorado have not been reported yet and they would not be expected in Nebraska until mid to late July, if or when they show up in Colorado or Kansas, I'll issue an alert. The best is to treat fields before they show up since they settle on the underside of leaves and are difficult to hit with insecticides there. Coverage is the problem.

There are several insecticides that can be used such as Thiodan/Phaser, Admire/Provado, pyrethroids such as Asana. New from Novaric is Actara. For early season control, not usually applicable to Nebraska, is Thimet. Be aware that the carabamates such as Furadan tend to increase psyllid population by killing off predators; this is not as much of a problem with Fulfill, Monitor or Thiodan.

European Corn Borer's first adult generation is in flight in mid-June. Check with the local entomologist at the Research & Extension Center (Concord, Clay Center and North Platte) to determine their population and stage. Traps are usually set up in corn fields.

INSECT PRODUCT UPDATES

Actara (thiamethoxam) for psyllids, potato beetles and leaf hoppers, and Fulfill (pyrithione), fast-acting systemic, for aphids, both from Novaric's. Baythroid (cyfluthrin) for beetles, psyllids, corn borer, and leaf hopper from Bayer. Vydate (oxamyl) for nematodes, beetles and aphids from DuPont.

Yukon Gold

CHARACTERISTICS

Yukon Gold was crossed and developed at the University of Guelph, Ontario, Canada in the 1960s and 70s, and released in 1980 by Agriculture Canada at the University of Guelph (Johnston and Rowberry, 1981. Amer Potato Jour 58:241-244). As a yellow-fleshed cultivar, it was considered a specialty or gourmet variety and didn't gain popularity until the past few years. Last year, over 160 acres of Yukon Gold were grown for seed in Nebraska and over 1,800 seed acres nationwide. It has become a popular supermarket sale commodity, a premium price from shippers.

Due to Yukon Gold's new found popularity and since several Nebraska growers are producing this variety, it is time to review its characteristics and present information known for managing its production.

Summary of Plant Characteristics

Purpose — fresh market - boil and bake, possible for French frying
Maturity — early to mid season similar to Superior; determinate
Vine — medium, very erect, some tendency to spread
Flowers — violet to light violet; low frequency
Leaves — olive green, moderately shiny
Stem — 1 to 3 per plant
Root — moderately compact
Emergence — rapid
Set — few tubers set high
Bulking — early and very rapid
Dormancy — medium to long
Eyes — shallow, pinkish; few and not well distributed
Tuber Color — light yellow flesh
Tuber Skin — yellowish white, smooth
Tuber Shape — slightly oval and flattened, width to length = 88
Yield — medium
Specific Gravity — medium-high, 1.080s
Storage — well, dry rot with rough handling, soft rot due to large lenticles
Glycoalkaloids — low-medium (4.6 mg/100g fresh weight)
Cooking Quality — good with dry texture after boiling or baking; chips dark
Internal Defects — hollow heart in larger tubers
Disease Reactions — moderately susceptible to common scab; FVY, early blight, dry rot, silver scurf and black scar; susceptible to soft rot in storage
Pollution Sensitivity — susceptible to ozone damage (can induce early dying)
Herbicide Sensitivity — none to metribuzin

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Yukon Gold

Conclusions and Comments

Yukon Gold is primarily for the fresh market where it is gaining popularity. Light yellow coloring of the flesh gives the illusion that it is pre-buttered. Performance data in Ontario shows higher yields compared to Superior at some locations but not others (Table 1 summarizes). In Nebraska, Yukon Gold was included in trials conducted at Imperial, O'Neill and Scottsbluff over the past three years. Tables 2 through 4 summarize the data from the nine site-years and compares Yukon Gold to Russet Burbank and Russet Norkotah. Yukon Gold had less small-sized tubers resulting in significantly higher yields of tubers greater than 1 inch (Table 2). Its specific gravity was higher than the two russets and it fried slightly lighter. Table 3 shows that, in the Nebraska trials, Yukon Gold was more susceptible to common scab than the two russets but less susceptible to black scurf than Russet Burbank. It had less off-shaped tubers than Russet Burbank as well (Table 4). There was slightly more hollow heart and heat sprouting (5%) occurred at Imperial in 1997. In taste tests conducted in Canada, Yukon Gold was rated good with a dry texture for both boiling and baking.

Yukon Gold is establishing a key market niche in Nebraska's potato industry and is regarded as more promising for grower evaluations. Note, however, that Yukon Gold has some special characteristics that cause problems with stands and marketing size. To overcome these, some key production practices need to be employed.

YUKON GOLD: MANAGEMENT PROFILE

Market Characteristics

Yukon Gold matures in 80 to 95 days after planting, so may be harvested as an early season crop. Tubers are set early and bulk quickly. Summer yields under good conditions range between 300 and 400 cwt/acre and, in the autumn (full season), yields may get over 500 cwt/acre. Specific gravity is usually between 1.080 to 1.085 (about 20-21% dry matter). Sugars are in the medium range and the variety can fly like a russet fitter. Tuber shape is 'cylindrical' and reported as slightly oval and flattened. Highest market recommendation is for the 'count-on' baking market. One of its drawbacks is a strong tendency for tubers to over-ripen due to setting few tubers and to green due to high levels of close to the surface because of these set characteristics, some more unusual management strategies are needed for high marketable yield.

Seed (KEY practices)

For best stand, small, whole seed (“single-drops”) should be used due to uneven distribution of eyes which are mostly at the bud end. For cutting to seed pieces, small to medium size tubers need to be used to avoid “bind” pieces. Cutting and then planting immediately is very strongly discouraged, clearly not a recommended practice which results in poor stands, uneven emergence and seed decay by bacterial soft rot (Erwinia carotovora). Cut pieces need to be warmed, treated with a fungicide dust, and allowed to heal: 7-10 days at 65°F or two weeks at 50°F before planting are recommended.

Table 1: Early and full season harvest of Yukon Gold versus Superior in Ontario, 1999 (5 locations each).

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Marketable Yield, cwt/acre</th>
<th>Early Harvest</th>
<th>Late Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon Gold</td>
<td>162 *</td>
<td>316 *</td>
<td></td>
</tr>
<tr>
<td>Superior</td>
<td>161</td>
<td>340</td>
<td></td>
</tr>
</tbody>
</table>

* No significant difference between the two cultivars.

Table 2: Nebraska trials: Yield data from 1997, 1998 and 1999; locations were Imperial, O’Neill and Scottsbluff each year.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Total Yield</th>
<th>Specific Fry</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cwt/acre</td>
<td></td>
<td>cwt/acre</td>
</tr>
<tr>
<td>Yukon Gold</td>
<td>390</td>
<td>402 A</td>
<td>1.080 A</td>
</tr>
<tr>
<td>Rus Burbank</td>
<td>369</td>
<td>326 B</td>
<td>1.074 B</td>
</tr>
<tr>
<td>Rus Norkotah</td>
<td>362</td>
<td>333 B</td>
<td>1.074 B</td>
</tr>
<tr>
<td>Site mean</td>
<td>356</td>
<td>327 B</td>
<td>1.075 B</td>
</tr>
</tbody>
</table>

* SFA Chart: 1-lightest, 5-darkest

* Percent of Tubers Harvested

* When columns are followed by letters, numbers followed by the same upper-case letter are not different at 95% confidence level.

Table 3: Nebraska trials: Disease data from 1997, 1998 and 1999; locations were Imperial, O’Neill and Scottsbluff each year.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Common Scab</th>
<th>Black Scurf</th>
<th>Vascular Discolor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon Gold</td>
<td>3.7 A</td>
<td>4.7 B</td>
<td>1.7</td>
</tr>
<tr>
<td>Rus Burbank</td>
<td>0.3 B</td>
<td>12.8 A</td>
<td>1.8</td>
</tr>
<tr>
<td>Rus Norkotah</td>
<td>0 B</td>
<td>1.1 B</td>
<td>0.5</td>
</tr>
</tbody>
</table>

* Percent of Tubers Harvested

* When columns are followed by letters, numbers followed by the same upper-case letter are not different at 95% confidence level.

Table 4: Nebraska trials: Defects data from 1997, 1998 and 1999; locations were Imperial, O’Neill and Scottsbluff each year.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Off Shape</th>
<th>Hollow Heart</th>
<th>Sprouting (1997 only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon Gold</td>
<td>3.0 B</td>
<td>0.7 a</td>
<td>1.7</td>
</tr>
<tr>
<td>Rus Burbank</td>
<td>12.0 A</td>
<td>0.1 ab</td>
<td>0</td>
</tr>
<tr>
<td>Rus Norkotah</td>
<td>4.9 B</td>
<td>0 b</td>
<td>0</td>
</tr>
</tbody>
</table>

* Percent of Tubers Harvested

* When columns are followed by letters, numbers followed by the same upper-case letter are not different at 95% confidence level.

Continued on page 3
Yukon Gold

Planting (KEY practices)

Yukon Gold sprouts slowly, therefore, sprouts are susceptible to Rhizoctonia stem canker and planting in cool soils needs to be avoided. Because few tubers are set and they grow rapidly, whole or cut seed tubers must be planted close, 6-10 inches apart in the row are recommended for fresh market production. Else, tubers will oversize out of the market range and many may develop hollow heart. Seed pieces or tubers need to be planted deep, about 6 inches below row top. If not, due to the high set, many tubers will just out of the ground near harvest and greening will be a grade-out problem. Avoid alkaline soils. The vine grows fast and tubers set quickly; therefore, late planting has little effect on yield potential.

Fertilization

Recommendations run 150 lb. N/acre, 100-150 lb. P.O./acre, and 100-150 lb. K.O./acre for fresh market. [Recommendations from the San Luis Valley, Colo., are 120-180 lb N, 100-200 lb P and 60-80 lb K/acre with a 70-120 lb N/acre applied pre-plant and 60-70 lb N/acre applied through sprinklers at 20 in. N per application]. All N may be applied pre-plant or N may be split with half as starter and half at emergence. Recommendations for seed production are not available. No petiole nitrate-N levels have been reported.

Irrigation

Sprinkler irrigation at maximum ET (evapotranspiration) should be every 2½ to 3 days. Yukon Gold has a low to moderate tolerance to drought stress. In the middle of the season, it may wilt easily. But, water use drops off quickly when vines begin to senescence. Late season monitoring is essential to avoid over-watering and the development of black leg and soft rot, pink rot and leak.

Vine Desiccation (KEY practice)

Yukon Gold is a determinate variety and senescence occurs 70-90 days after emergence (about 100 days after planting); natural die-off is mid to late August with an early May planting.

Since tuber set is light, 5/8/plant, and tubers grow rapidly, there is a strong tendency to oversize and, therefore, tuber size needs to be closely monitored 9-10 weeks after emergence, beginning of August. Vine desiccation is recommended and Yukon Gold is quite responsive in August. Because tuber set is high and tubers may be close to the surface, chemical desiccation is preferred over mechanical. Skin set takes 2 to 3 weeks.

Storage

Tubers are resistant to bruising and store very well when cured wet. Sprouting is minimal due to dormancy. When properly stored, tubers lose less moisture than many varieties. Humidity of 90-95% is desirable. If lentilcots are swollen or skin is bruised, tubers are susceptible to storage rot - soft rot, black and pink rot. With rough handling, dry rot may occur. Silver scurf and early blight on tubers can be problems.

Pest and Defect Reactions

Vines are sensitive to air pollution (ozone) Injury. Yukon Gold competes well against weeds. There is a low aphid preference for Yukon Gold, so spread of viral problems are not common. Seed is susceptible to Fusarium decay and a fungal dust treatment is recommended. Yukon Gold is susceptible to PVY and tolerant of leaf roll (PLRV); symptoms are easily discerned. The vine is very susceptible to both early and late blights. The tuber is prone to common scab: oo/so to dry rot at harvest, and tolerant to nematodes. Soft rot problems in storage have been associated with high field incidence of black leg. Leek has been associated with high late-season watering. Tubers are prone to hollow heart and heat necrosis when oversized. They are slow to green but set high in the hill.

A disease reaction summary is:

Very Susceptible to: seed decay, black leg, early blight (foliar & tuber), late blight, early dying (V, wilt) PVY, soft rot, dry rot, leak, pink rot, silver scurf, black scurf.

Susceptible to: common scab.

Moderately Tolerant to: leaf roll and leaf roll net necrosis.

Tolerant to: PVX.

Key Management Points for Yukon Gold

| vine maturity | 90-100 days from planting |
| seed | whole or large cut pieces, warm, treat and heal |
| planting | in warm soil, close-in-row spacing, deep in hill |
| fertility | ~ 150 lb N, ~ 60 lb P, ~ 100 lb K |
| irrigation | avoid late over-watering |
| tuber growth | early initiation and rapid bulking |
| senescence | monitor for oversizing, chemically desiccate |
| storage | medium to long term possible late dormancy break |
| market defects | over-sizing, greening, hollow heart |
| diseases | susceptible to most, tolerant to leaf roll, tolerant to mild mosaic |
| insects | disliked by aphids |
| weeds | competes well, tolerant to herbicides |

GARLICKY YUKON GOLD
(old Czech recipe - taken from the Denver Post)

Ingredients:
1¼ tablespoon butter, margarine or olive oil
2 medium garlic cloves, minced
2 medium, unpeeled Yukon Gold tubers
sliced 1/8 inch thick
½ teaspoon dried rosemary
Salt and pepper to taste

Preparation:
Place butter/margarine/oil and garlic on a 9-inch pie plate and place into a pre-heated oven 450F, until butter/margarine melts or oil is hot, usually about one minute.
Remove from oven and pour off most of the liquid into a small dish and save. Place potato slices into pan, slightly overlapping them in a circular pattern. Sprinkle with rosemary, salt and pepper. Pour saved garlic liquid over the potato slices. Bake at 450F for about 40 minutes or until bottom potato slices are crisp and tender. Serves two people.
YUKON GOLD Acknowledgements

Information presented in the Yukon Gold article were obtained from Ontario and New Brunswick (Agriculture Canada), and from Colorado, Maine, and Michigan, and from several commercial websites.


Photos were obtained from Agriculture Canada, Scottish Agricultural Science Agency and University of Wyoming.

Check out the Nebraska Potato Eyes on the WWW at: http://www.panhandle.unl.edu/peyes.htm