

YUKON GOLD

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This profile was developed for production in the San Luis Valley. While some guidelines may be appropriate regardless of growing area, fine-tuning for specific production locales is recommended.

Yukon Gold is an early maturing cultivar, released in 1980 by Agriculture Canada, University of Guelph and the Ontario Ministry of Agriculture (American Potato Journal 58:241-244, 1981). Yukon Gold was tested as G666-4Y. It is the result of a cross between Norgleam and W5279-4. Yukon Gold is an attractive, yellow-fleshed, potato cultivar. Primary use is for the fresh market. It is particularly suited for baking, salad and soup. Yukon Gold may process if fried directly from the field, but not following cold storage. It is widely adapted in North America and performs very well in the San Luis Valley.

Plant/roots: Plants emerge quickly with a medium, upright vine, and a slight tendency to spread as maturity approaches. Vines exhibit a purplish pigmentation, particularly in lower foliage. Flowers are pale, red-purple and not overly abundant. Yukon Gold has a determinate growth habit. The root system is somewhat compact.

Tubers: Tubers have light yellow flesh, are round to oval, smooth and slightly flattened, with pale yellow skin. Eyes are shallow, pink and tend to be distributed near the bud end. Specific gravity levels are medium (1.080).

Yield potential: Yield potential is medium, with a range of about 380 to 400 cwt. per acre, with proper management. A very high percentage of marketable tubers are produced if high plant density and low nitrogen rates are utilized.

GROWING SEASON MANAGEMENT

Pre-plant considerations: Tubers have medium dormancy. Yukon Gold characteristically produces few stems and tuber set tends to be low. Whole or cut seed is acceptable, however, cut seed may increase stem numbers, aiding in limiting oversized tubers late in the season. Eyes tend to be most prevalent on the bud end and often one side of the stem end has no eyes. Eye distribution is light (about 8 per tuber), thus avoid large seed, which may result in blind seed pieces or few stems per plant. Tuber size is also controlled through closer within-row seed spacing. Avoid prolonged warming of seed to minimize excessive sprouting and physiological aging (no more than two weeks at 60 F). Precutting may age seed physiologically, as well, but research in Colorado indicates this may not be a significant problem if proper storage conditions after cutting are utilized. Avoid planting seed in cool soils, since delayed emergence may aggravate *Rhizoctonia* stem canker and result in reduced fertilizer uptake. Plant 4 inches deep in a broad, well-shaped hill to minimize late season greening.

Fertility: Apply total fertilizer in the range: N(120-180#), P(100-200#), K(0-60#). Pre-plant N applications are critical for early vine growth necessary to support maximum yields. This should be in a range of 70-120#, do not exceed 80# on lighter soils. Sprinkler applied N should be in the range of 60-70#. Do not exceed 20# per application.

Irrigation: The interval at the maximum ET is approximately 2.5 to 3 days. Drought tolerance is low. Mid season this cultivar wilts easily. Producers should closely monitor late season irrigation, to prevent creating ideal conditions for expression of diseases such as blackleg, pink rot and leak.

Pest Control

Weeds: Weed competition is moderate for Yukon Gold. It is not sensitive to major potato herbicides.

Insects: Standard insect control measures are suitable, however timing and rotation of pesticides is important due to preference by aphids and virus spread.

Fungicides: Three to five fungicide applications may be necessary to control foliar early blight.

Tuberization/bulking: Tuber set is light to medium (about 7 tubers per plant) and high in the hill. Greening may be a problem without proper hill conformation. Tuber bulking occurs in a short interval during early to mid-season at an extremely rapid rate.

Vine Kill: Average days from planting to vine senescence is 90 to 100. Adequate skin set occurs in 14 to 21 days. Tubers may become excessively large late in the season, so close monitoring of size is warranted by 90 days from planting.

STORAGE MANAGEMENT

Yukon Gold stores well and generally develops few problems early. However, leak, pink rot, soft rot and silver scurf may become serious when proper field and storage management are not practiced. Rough handling may increase the potential for *Fusarium* dry rot infections. Yukon Gold has traditionally not been considered a long-term storage cultivar.

DISEASE REACTION

Potato early dying, caused by *Verticillium dahliae* is a problem in some years, but can be easily confused with natural vine senescence. Bacterial ring rot symptom expression is adequate with symptoms showing within 90 days after planting. Yukon Gold is susceptible to PVY infection and infected plants are easy to detect. However, virus spread is rarely a major problem.

Field

Foliar early blight	Susceptible*
<i>Verticillium</i> wilt	Susceptible
Blackleg	Susceptible
Seedpiece decay	Susceptible
Leafroll virus	Moderately Resistant
Leafroll net necrosis	Moderately Resistant
PVY	Susceptible
PVX	Tolerant/Resistant to mild mosaic
Common scab	Moderately Susceptible
Powdery scab	Susceptible
Bacterial ring rot	Susceptible
Late blight	Susceptible

Storage

Tuber early blight	Susceptible
Bacterial soft rot	Susceptible
<i>Fusarium</i> dry rot	Susceptible
<i>Pythium</i> leak	Susceptible
Pink rot (<i>P. erythroseptica</i>)	Susceptible
Silver scurf	Susceptible
<i>Rhizoctonia</i> scurf	Susceptible

**Disease reaction ratings = susceptible, moderately susceptible, moderate, moderately resistant and resistant.*

KEYSTONE RUSSET

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This profile was developed for production in the San Luis Valley. While some guidelines may be appropriate regardless of growing area, fine-tuning for specific production locales is recommended.

Keystone Russet is a very high yielding, medium russet-skinned, fresh market cultivar. Release is scheduled for 1999, by the Colorado and Idaho Agricultural Experiment Stations and the USDA. Keystone was tested as AC83064-1 and is the result of a cross between CalWhite (A76147-2) x A7875-5. It has low specific gravity and attractive tuber type. Plant variety protection is being pursued.

Plants/roots: Emergence is uniform, with a medium-sized, somewhat spreading vine and white flowers. It has a determinate growth habit and a moderate to shallow root system. Tuber initiation and bulking rate are medium.

Tubers: Tubers have white flesh, are oblong to long, with medium russet skin. Eyes are shallow and most prevalent on the bud end. Specific gravity is low (1.078).

Yield potential: Yield potential may exceed 500 cwt. per acre, with a high percentage of US No. 1 tubers produced.

GROWING SEASON MANAGEMENT

Pre-planting considerations: Tubers have a medium dormancy. Whole or cut seed is acceptable. Monitor size of seed, as sparse eye distribution on larger seed may result in "blind" seed pieces and stand problems. A seed spacing of 10 to 12 inches may optimize yield and desired tuber size for the commercial market. Plant this cultivar at about a 5-5.5 inch depth, which will reduce the potential for green tubers.

Fertility: Apply total fertilizer in the following range N(120-140#), P(80-190#), K (0-100#). Fertility needs are very minimal compared to other major russet cultivars. Pre-plant N applications should be in the range of 60-80#. Timing of tuberization is not affected by N applications. Spoon-feed remaining N at the rate of 7-10# per application (do not exceed 20# per application). Skin set may be difficult to achieve if nitrogen levels are high prior to vine desiccation. This may perpetuate skinning and tuber early blight problems in storage. Keystone's performance on alkali soils has been diminished.

Irrigation: Interval at the maximum ET is 3 days. Drought tolerance is moderate.

Pest Control

Weeds: Keystone Russet competes well with weeds. It is sensitive to metribuzin (Sencor, Lexone) applications.

Insects: Standard insect control measures generally are effective but timing and rotation of appropriate control is important due to high aphid preference and virus spread.

Fungicides: Begin application of appropriate fungicides for foliar early blight control when plants are 8 to 10 inches tall, and/or growing degree thresholds are met. This will result in 2 to 5 applications per season. Keystone is susceptible to late blight, thus if the pathogen is present, utilize an appropriately timed preventative program.

Tuberization/bulking: Keystone sets about 7 tubers per plant, and tubers are set in the middle of the hill. Tuber initiation and bulking rate are medium. Heat sprouts may occur when growing temperatures are high. Tubers are moderately resistant to blackspot bruise. Few internal or external defects have been noted during evaluation of this cultivar.

Vine Kill: Average days from planting to vine kill are 115 to 120. Vine killing is required, particularly if nitrogen applications have exceeded requirements. Adequate skin set occurs within 21 to 28 days.

STORAGE MANAGEMENT

Keystone Russet stores well with few problems, however, if tubers are immature or bruised during harvest and handling operations, *Fusarium* dry rot and early blight tuber decay may quickly become problems in storage.

DISEASE REACTION

Overall, disease problems are minimal. Bacterial ring rot foliar expression is adequate with typical symptoms and occurs within 90 days after planting.

Field

Foliar early blight	Susceptible*
<i>Verticillium</i> wilt	Unknown
Blackleg	Susceptible
Seedpiece decay	Susceptible
Leafroll virus	Susceptible
Leafroll net necrosis	Unknown
PVY	Susceptible
PVX	Susceptible
Common scab	Unknown
Bacterial ring rot	Susceptible

Storage

Tuber early blight	Susceptible
Bacterial soft rot	Susceptible
<i>Fusarium</i> dry rot	Susceptible
<i>Pythium</i> leak	Unknown
Pink rot (<i>Phytophthora</i>)	Unknown
Silver scurf	Unknown
<i>Rhizoctonia</i> scurf	Unknown

*Disease reaction ratings = susceptible, moderately susceptible, moderate, moderately resistant and resistant.

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ALPHA

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This profile was developed for production in the San Luis Valley. While some guidelines may be appropriate regardless of growing area, fine-tuning for specific production locales is recommended.

Alpha is a late maturing cultivar released in 1925 by Professor Ir. J.C. Dorst of Leeuwarden, Holland. Primary use is for the fresh market, and it is particularly suited for boiling.

Plant/roots: Plants emerge uniformly and quickly, with a large, upright vine and light red-purple flowers. If dormant (seed tubers not warmed, eyes not peeping) tubers are used, emergence may be quite erratic. Alpha has a determinate growth habit, with a medium sized root system.

Tubers: Tubers have yellow flesh, are round to slightly oval, with a buff to pale yellow, slightly flaky skin. Eyes are shallow and well distributed. Specific gravity levels are medium (1.080).

Yield potential: Yield potential is medium (350 cwt./acre).

GROWING SEASON MANAGEMENT

Pre-planting considerations: Tuber dormancy is strong. Whole or cut seed is acceptable, however, pre-cut seed may be preferred, as the increased stem number aids in limiting oversized tubers late in the season. Chitting (green sprouting) may be advantageous if whole seed is utilized. A 6 to 8-inch within-row spacing maximizes production of small tubers desired by the tablestock industry. Plant 4 inches deep in a broad, well-shaped hill to minimize late season greening.

Fertility: Apply total fertilizer in the range: N(120#), P(80-190#), K(0-100#) for Alpha. Pre-plant N should be in a range of 60-80#. Sprinkler applied N should be in the range of 40-60#. There may be a benefit from applications at a rate of 7-10# per application, but not exceeding 20# per application. All nitrogen should be applied prior to July 31 in the San Luis Valley. Vines may become quite large if excessive nitrogen is used early in the season. Tuberization may also be delayed.

Irrigation: The interval at the maximum ET is approximately 3 days. Drought tolerance is moderate. Due to the large vine size, monitor moisture closely during extended periods of hot weather.

Pest Control

Weeds: Alpha competes well with weeds. It is not sensitive to common potato herbicides.

Insects: Standard insect control measures are suitable.

Fungicides: Apply first application in conjunction with the early blight degree-day model. Utilize a typical spray program for the San Luis Valley.

Tuberization/bulking: Tuber set is medium to high and in the middle of the hill. Greening may be a problem without proper hill conformation. Tuber bulking occurs rapidly mid to late season. Growth cracks, misshapen tubers and deeper eyes may result if plants are stressed during tuber bulking.

Vine Kill: The average number of days from planting to vine kill is about 110. Adequate skin set occurs in 14 days. Tubers may become excessively large late in the season; close monitoring is warranted by early August.

STORAGE MANAGEMENT

Alpha generally has few storage problems. Alpha is somewhat susceptible to blackspot bruise.

DISEASE REACTION

Overall, disease problems are minimal. Bacterial ring rot symptom expression is adequate. Symptoms appear later in the season, 90+ days after planting. Reaction to PVY infection is normal, and infected plants are easily detected.

Field

Foliar early blight	Moderate
<i>Verticillium</i> wilt	Unknown
Blackleg	Susceptible
Seedpiece decay	Susceptible
Leafroll virus	Moderate
Leafroll net necrosis	Unknown
PVA	Resistant
PVY	Susceptible
PVX	Susceptible
Tobacco Rattle Virus	Susceptible
Common scab	Moderately resistant
Powdery scab	Moderately susceptible
Bacterial ring rot	Susceptible
Late blight	Moderately resistant

Storage

Tuber early blight	Moderately resistant
Bacterial soft rot	Unknown
<i>Fusarium</i> dry rot	Unknown
<i>Pythium</i> leak	Moderate
Pink rot (<i>P. erythroseptica</i>)	Moderate
Silver scurf	Susceptible
<i>Rhizoctonia</i> scurf	Susceptible

Disease reaction ratings = susceptible, moderately susceptible, moderate, moderately resistant and resistant.

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