# Rhubarb - Horticulture

Major update by Ben Phillips – Apr 2022
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## *Crop Description*

Rhubarb (*Rheum x rhabarbarum*) is a perennial plant in the Buckwheat family, Polygonaceae. The cultivated species is of unknown European origin, but most commercial varieties were probably hybridized at some point and cloned from root cuttings for generations. Variety names have been lost, confused, and rebranded over the years. There are only a handful of varieties that can be sourced in the United States, and the varieties commonly grown commercially in the Midwest are Canada Red, Crimson, MacDonald, Ruby, Sutton, Valentine, and Victoria – all red-stalked varieties. All varieties produce more green stalks later in summer, and some varieties only produce green stalks. But, pink and red-stalked varieties picked at peak color are more popular at market.

A combination of breeding efforts in the early 1900's to reduce flower stalk production and a naturally sporadic flowering period, has resulted in a bottleneck of reliable seed-production and an industry focused more on cloning through dormant root crown division. Seeds that are replanted will have a mixture of characteristics. However, Victoria flowers readily, is commonly available from seed, and produces a similar mixture of green and red-stalked plants from seed in subsequent generations.

After 2 years of unharvested growth, plants can begin to be annually harvested in the field for 3 to 8 productive years. Alternatively, after 3 years of unharvested growth, plants can be dug in late fall or early winter and stored in dark indoor facilities where they are sprouted early for a lucrative late winter and early spring harvest, after which the roots are exhausted and discarded. Victoria is the most reliable forcing variety, and the most widely available in the United States, although several other forcing varieties are maintained commercially in England.

New root cuttings can be purchased, or old plantings can be dug and split into 5 to 10 individual crowns with 2 to 3 buds each for replanting in a new area. This digging and splitting process is commonly performed in the winter when root crowns are dormant.

The split crowns are a marketable product themselves during spring plant sale season with flowers and other vegetable transplants. The crowns can be stored in refrigerated crates with high humidity like other edible root crops and asparagus crowns, or planted in pots for vegetative plant sale.

## *Planting and Spacing*

For commercial crown production, seeds of rhubarb may be planted in field plantings or in pots, grown for one year before selling. However, this is uncommon due to the unreliable characteristics of rhubarb seeds, and the slow growth of plants in their first year.

For commercial stalk production, we recommend using only healthy root crowns having preferably 2 or 3 buds. Plant in rows 5 to 6 feet apart. Set crowns 3 feet apart in shallow furrows so crowns will be 2 inches below surface. Infertile soil, extreme heat or cold, drought, or long days that expose plants to too much light may cause bolting, and older plants bolt more. Break off flower stalks to maintain a strong root system year after year. A productive planting can be maintained for 3 to 8 years.

For forcing, crowns are placed in a dark room with about 1 square foot per crown on an open dirt floor, or in apple crates, and a few inches of soil is piled around each crown. Plants can be held dormant with temperatures below 40 F.

Some growers are experimenting with plasticulture production of rhubarb in the field for an early market that overlaps with indoor forced production in early spring. Rhubarb is frost tolerant down to 25 F.

## *Fertilizing*

**pH:** Maintain a soil pH of 6.2 to 6.8.

**New plantings:** Before planting, apply 50 pounds N per acre, 0 to 150 pounds $P_2O_5$ per acre, and 0 to 200 pounds $K_2O$ per acre based on soil test results and recommendations from your state. Apply an additional 25 pounds $P_2O_5$ per acre directly in furrows when setting crowns. Sidedress with 50 pounds N per acre after growth starts in the spring.

**Established plantings:** Each year before emergence, apply 50 pounds N per acre by broadcasting and incorporate by lightly tilling. After harvests conclude, apply 30 pounds N per acre. The total amount of N from fertilizer should be 80 pounds N per acre. No $P_2O_5$ is necessary if adequate fertilization was achieved prior to planting. Every fourth year apply up to 120 pounds $K_2O$ per acre if a soil test recommends it.

## *Harvesting*

By year 3, one can begin harvesting in the spring, or wait until the late fall to dig and force over the winter. Harvest field rhubarb for no longer than 4 weeks in year 3. Harvest for about 8 to 10 weeks after year 3. Do not remove more than 2/3 of the developed stalks from any plant at one time.

Rhubarb that is placed indoors for forcing is sprouted by wetting the soil around the crowns and maintaining a temperature between 50 and 65 F. The plants then produce many bright pink stalks for about 1 month and are usually picked 2 times per week. Forced plants produce about half as many stalks as field plants.

After forcing, crowns are generally too weak to produce well again in the following year, and are usually discarded for new, smaller root crown cuttings that are easier to transport and plant than the large 3-year old forced crowns. But, the forced crowns can also be split into smaller crowns and replanted to build strength for another 3 years.

# Rhubarb - Diseases

### Leaf Spot of Rhubarb - Ascochyta Fungus

#### Non-Pesticide

Fertilize in the fall for growth in the spring. Improves rapid, strong plant growth and uniform establishment, and enhances competitiveness. Remove older yellowed leaves or leaves with lesions in the fall.

### Phytophthora Blight of Multiple Crops - Phytophthora Oomycete

#### Non-Pesticide

Use disease-free plants. Plant only on well-drained soil.

# Rhubarb - Insects

### Aphids

#### Pesticide

**Actara (thiamethoxam)** | 1.5-3.0 fl. oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Admire Pro (imidacloprid)** | 4.4-10.5 fl. oz. per acre. Applied at soil as band or chemigation through drip. REI: 12-hour. PHI: 45-day. IRAC 04A.

**Assail 30SG (acetamiprid)** | Use 30SG formulations at 2.0-4.0 oz. per acre. Use 70WP formulations at 0.8-1.7 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Belay (clothianidin)** | *Soil applications*: 9-12 fl. oz. per acre of 2.13SC formulation. 4.8-6.4 oz. per acre of 50WDG formulation. *Foliar applications*: 3-4 fl. oz. per acre of 2.13SC formulation. 1.6-2.1 oz. per acre of 50WDG formulation. See bee warning on label. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Beleaf (flonicamid)** | 2-2.8 oz. per acre. REI: 12-hour. PHI: 0-day. IRAC 29.

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Fulfill (pymetrozine)** | 2.75 oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 09B.

**Perm-Up 25DF (permethrin)** | 3.2-12.8 oz. per acre. Use 25W, 25WP or 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 2-8 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

**Platinum 2SC (thiamethoxam)** | Use 2SC formulations as a soil treatment at 5-11 fl. oz. per acre. Use 75SG formulations as a soil treatment at 1.66-3.67 oz. per acre. REI: 12-hour. PHI: 30-day. IRAC 04A.

**Pyganic EC 5.0 II (pyrethrins)** | 4.5-15.6 fl. oz. per acre foliar application, or 0.375 fl. oz. per 1,000 sq. ft. growing media for soil drench application (in greenhouse). REI: 12-hour. PHI: 0-day. IRAC 03A. *OMRI-listed.*

**Sivanto 200 (flupyradifurone)** | 7.0-14.0 fl. oz. per acre. Use Sivanto 200SL and Sivanto Prime at 7-14 fl. oz. per acre. REI: 4-hour. PHI: 1-day. IRAC 04D.

## Caterpillars

There are many minor caterpillar pests of rhubarb, including corn earworm/tomato fruitworm, tomato hornworm, European corn borer, cutworms, loopers, and armyworms. Always check the label for the specific list of caterpillars that the product can be used on.

#### Non-Pesticide

Remove curly dock weeds from fields and field edges. Curly dock is the normal host for common stalk borer caterpillars that feed on rhubarb.

#### Pesticide

**Baythroid XL (beta-cyfluthrin)** | 1.6-3.2 fl. oz. per acre. For armyworms, cutworms, loopers, corn earworm, and European corn borer. REI: 12-hour. PHI: 0-day. IRAC 03A. *RUP.*

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Caterpillars include armyworms, cutworms and loopers. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Coragen (chlorantraniliprole)** | 3.5-7.5 fl. oz. per acre. For armyworms and loopers. Can be applied through soil or foliar applications. REI: 4-hour. PHI: 1-day. IRAC 28.

**Entrust SC (spinosad)** | For armyworms and loopers. Use 2SC formulations at 3.0-8.0 fl. oz. per acre. Use 80WP formulations at 0.5-2.5 oz. per acre. REI: 4-hour. PHI: 1-day. IRAC 05. *OMRI-listed.*

**Exirel (cyantraniliprole)** | 7-17 fl. oz. per acre. For armyworms, corn earworm, and loopers. REI: 12-hour. PHI: 1-day. IRAC 28.

**Intrepid 2F (methoxyfenozide)** | 4-10 fl. oz. per acre. For armyworms, and loopers. REI: 4-hour. PHI: 1-day. IRAC 18.

**Mustang Maxx (zeta-cypermethrin)** | 2.24-4.0 fl. oz. per acre Caterpillars include armyworm, cutworm, cabbageworm and loopers. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

**Perm-Up 25DF (permethrin)** | 3.2-12.8 oz. per acre. For armyworms, cutworms, corn earworm, and loopers. Use 25W, 25WP or 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 2-8 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

**Radiant 1SC (spinetoram)** | 5-10 fl. oz. per acre. For armyworms, corn earworm, and loopers. REI: 4-hour. PHI: 1-day. IRAC 05.

**Sevin XLR Plus (carbaryl)** | 1-2 qts. per acre. For armyworms. REI: 12-hour. PHI: 14-day. IRAC 01A.

### Flea Beetles

#### Pesticide

**Belay (clothianidin)** | *Soil applications*: 9-12 fl. oz. per acre of 2.13SC formulation. 4.8-6.4 oz. per acre of 50WDG formulation. *Foliar applications*: 3-4 fl. oz. per acre of 2.13SC formulation. 1.6-2.1 oz. per acre of 50WDG formulation. See bee warning on label. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Mustang Maxx (zeta-cypermethrin)** | 2.24-4.0 fl. oz. per acre REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

**Platinum 2SC (thiamethoxam)** | Use 2SC formulations as a soil treatment at 5-11 fl. oz. per acre. Use 75SG formulations as a soil treatment at 1.66-3.67 oz. per acre. REI: 12-hour. PHI: 30-day. IRAC 04A.

### Leafhoppers

#### Pesticide

**Actara (thiamethoxam)** | 1.5-3.0 fl. oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Admire Pro (imidacloprid)** | 4.4-10.5 fl. oz. per acre. Applied at soil as band or chemigation through drip. REI: 12-hour. PHI: 45-day. IRAC 04A.

**Belay (clothianidin)** | *Soil applications*: 9-12 fl. oz. per acre of 2.13SC formulation. 4.8-6.4 oz. per acre of 50WDG formulation. *Foliar applications*: 3-4 fl. oz. per acre of 2.13SC formulation. 1.6-2.1 oz. per acre of 50WDG formulation. See bee warning on label. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Mustang Maxx (zeta-cypermethrin)** | 2.24-4.0 fl. oz. per acre REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

**Platinum 2SC (thiamethoxam)** | Use 2SC formulations as a soil treatment at 5-11 fl. oz. per acre. Use 75SG formulations as a soil treatment at 1.66-3.67 oz. per acre. REI: 12-hour. PHI: 30-day. IRAC 04A.

**Sivanto 200 (flupyradifurone)** | 7.0-14.0 fl. oz. per acre. Use Sivanto 200SL and Sivanto Prime at 7-14 fl. oz. per acre. REI: 4-hour. PHI: 1-day. IRAC 04D.

### Rhubarb Curculio Beetle

The adult weevils overwinter in margins near the rhubarb planting. They emerge in spring and can be easily picked off of the leaves they are resting on, due to their large size. Weevil populations survive on weed hosts dock, thistle and sunflower. Managing these plants in relation to the rhubarb crop is especially important. Eggs laid in rhubarb do not survive, they are crushed by the growing plant tissue.

There are no registered insecticides that will give adequate control.

#### Non-Pesticide

Remove weed hosts (dock, thistle, and sunflower) from fields and field edges.

### Stink Bugs

#### Pesticide

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Pyganic EC 5.0 II (pyrethrins)** | 4.5-15.6 fl. oz. per acre foliar application, or 0.375 fl. oz. per 1,000 sq. ft. growing media for soil drench application (in greenhouse). REI: 12-hour. PHI: 0-day. IRAC 03A. *OMRI-listed.*

### Whiteflies

#### Pesticide

**Actara (thiamethoxam)** | 3.0-5.5 fl. oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Admire Pro (imidacloprid)** | 4.4-10.5 fl. oz. per acre. Applied at soil as band or chemigation through drip. REI: 12-hour. PHI: 45-day. IRAC 04A.

**Assail 30SG (acetamiprid)** | Use 30SG formulations at 3.0-4.0 oz. per acre. Use 70WP formulations at 1.1-1.7 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

**Brigade 2EC (bifenthrin)** | 2.1-6.4 fl. oz. per acre. Use 2EC formulations at 2.1-6.4 fl. oz. per acre. Use 10DF, 10WP, or 10WSB formulations at 5.3-16 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A. *RUP.*

**Platinum 2SC (thiamethoxam)** | Use 2SC formulations as a soil treatment at 5-11 fl. oz. per acre. Use 75SG formulations as a soil treatment at 1.66-3.67 oz. per acre. REI: 12-hour. PHI: 30-day. IRAC 04A.

**Pyganic EC 5.0 II (pyrethrins)** | 4.5-15.6 fl. oz. per acre foliar application, or 0.375 fl. oz. per 1,000 sq. ft. growing media for soil drench application (in greenhouse). REI: 12-hour. PHI: 0-day. IRAC 03A. *OMRI-listed.*

**Sivanto 200 (flupyradifurone)** | 7.0-14.0 fl. oz. per acre. Use Sivanto 200SL and Sivanto Prime at 7-14 fl. oz. per acre. REI: 4-hour. PHI: 1-day. IRAC 04D.

# Rhubarb - Weeds

### All Weeds

Before establishing a rhubarb planting, reduce perennial weeds in the area to be planted with systemic broad-spectrum herbicides.

Herbicides that control broadleaves must be applied while rhubarb is dormant or with shielded equipment between the row, as stated on the label. Herbicides that kill only emerged grasses may be applied over the top of rhubarb plants.

For specific weeds controlled by each herbicide, check the Relative Effectiveness of Herbicides for Vegetable Crops table.

Rates provided in the recommendations below are given for overall coverage. For a banded treatment, reduce amounts according to the portion of acre treated.

#### Non-Pesticide

Good weed control in the planting year is especially important. Multivators, tines, rolling cultivators, flame weeders work well before emergence of rhubarb, but it is important to avoid damaging crowns when cultivating. Cultivate row-middles and hand-hoe after emergence. Once established and before spring growth, harrow bed thoroughly but carefully to avoid injuring the crowns. During the growing season, cultivate row-middles and hand hoe to keep the planting clean. Following the first light freeze in fall, mulch with 3-4 inches of straw around plants, but

not on crowns. If additional mulch is needed in the spring, apply before hot, dry weather. Add more mulch during summer (if needed) to control weeds and retain moisture.

**Pesticide**

**Aim EC (carfentrazone)** POST | 0.5-2.0 fl. oz. per acre. Apply a minimum of 1 day prior to transplanting, or apply between crop rows with hooded sprayer. Do not allow spray to contact crop. Add 1 qt. COC (1% v/v) or 0.5 pt. NIS per 25 gal. of spray solution (0.25% v/v). Weeds must be actively growing and less than 4 in. tall. Do not exceed 6.1 fl. oz. per acre per season. REI: 12-hour. HRAC 14.

**Callisto (mesotrione)** PRE | 6 fl. oz. per acre. Apply to dormant, established rhubarb. Applying after growth begins will cause crop stunting and bleaching. If weeds are emerged, add 1qt. COC (1% v/v) or 0.5 pt. NIS per 25 gal. of spray solution (0.25% v/v). Has residual activity to control weeds that have not emerged. Do not exceed 6 fl. oz. per acre per year, or 1 application per year. REI: 12-hour. PHI: 21-day. HRAC 27.

**Caparol 4L (prometryn)** POST | PRE | 2-4 pts. per acre. Apply to dormant, established rhubarb before leaves emerge in spring. Use low rate on light soils. If weeds are present, add 1 qt. COC (1% v/v) or 0.5 pt. NIS per 25 gal. of spray solution (0.25% v/v). REI: 12-hour. PHI: 40-day. HRAC 05.

**Casoron 4G (dichlobenil)** PRE | 50 lb. per acre. Apply before rhubarb emerges in early spring. Broadcast on soil, and thoroughly incorporate granules by watering in. REI: 12-hour. HRAC 29.

**clethodim products (clethodim)** POST | Use 2EC formulations at 6-8 fl. oz. per acre with 1 qt. COC per 25 gals. of spray solution (1% v/v). Do not exceed 32 fl. oz. of 2EC formulations per acre per season. Use Select Max at 9-16 fl. oz. per acre with 8 fl. oz. NIS per 25 gals. of spray solution (0.25% v/v). Do not exceed 64 fl. oz. of Select Max per acre per season. Use low rates for annual grasses and high rates for perennial grasses. Spray on actively growing grass. Wait at least 14 days between applications. REI: 24-hour. PHI: 30-day. HRAC 01.

**Command 3ME (clomazone)** PRE | 2 qt. per acre. Apply to dormant rhubarb prior to leaf emergence. Do not make more than one application per crop per year. REI: 12-hour. HRAC 13.

**Dual Magnum (s-metolachlor)** PRE | 0.67-1.33 pts. per acre. Apply in spring before rhubarb and weeds emerge. Do not exceed one application and 1.33 pts. per acre per year. REI: 24-hour. PHI: 62-day. HRAC 15.

**Fusilade DX (fluazifop-P)** POST | 10-16 fl. oz. per acre. Add 1 qt. COC (1% v/v) or 0.5 NIS per 25 gal. of spray solution (0.25% v/v). Apply to small actively growing grass. Do not exceed 32 fl. oz. per acre per year. REI: 12-hour. PHI: 14-day. HRAC 01.

**glyphosate products (glyphosate)** POST | 0.75-3.75 lbs. acid equivalent (ae) per acre. Use formulations containing 3 lbs. ae per gal. (4 lbs. isopropylamine salt per gal.) at 1-5 qt. per acre, or formulations containing 4.5 lb ae per gal. (5 lb. potassium salt per gal.) at 0.66-3.3 qt. per acre. Broadcast before plants emerge, or apply between rows with wipers or hooded or shielded sprayers. Use low rate for annuals and higher rates for perennials. See label for suggested application volume and adjuvants. REI: 4-hour to 12-hour. PHI: 14-day. HRAC 9.

**Kerb SC (pronamide)** POST PRE | 2.5-5 pt. per acre. *Michigan 24c label only:* apply to dormant plants after frost has killed leaves in fall. Suppresses quackgrass. Do not apply to rhubarb the year of planting. Include glyphosate with application for better weed control. REI: 24-hour. PHI: 38-day. HRAC 03. *RUP.*

**Lorox DF (linuron)** POST PRE | 2-3 lbs. per acre. Apply broadcast to dormant rhubarb in the spring before leaves emerge. REI: 24-hour to 8-day. HRAC 05.

**paraquat products (paraquat)** POST | 2.5-4 pt. per acre of 2 lb. per gal. formulation or 1.7-2.7 pt. per acre of 3 lb. per gal. formulation. Add 1 qt. COC (1% v/v) or 0.5 pt. NIS (0.25%) to 25 gal. of solution. Apply during the dormant season before buds begin to grow. Do not exceed 2 applications per year. Certified applicators must successfully complete an EPA-approved training program before mixing, loading, and/or applying paraquat. REI: 12 to 24-hour. HRAC 22. *RUP.*

**Poast (sethoxydim)** POST | 1-1.5 pts. per acre. Add 1 qt. COC per 25 gal. of spray solution (1% v/v). Spray on actively growing grass. Do not exceed 3 pt. per acre per growing season. REI: 12-hour. PHI: 15-day in Illinois, Indiana, Michigan, and Minnesota; 30-day in other states. HRAC 01.

**QuinStar 4L (quinclorac)** POST | 12.6 fl. oz. per acre. Apply as a foliar spray to control Canada thistle and field bindweed. Can make a second application 30 days after the first. Do not exceed 25.2 fl. oz. per acre per year. REI: 12-hour. PHI: 30-day. HRAC 04.

**Sandea (halosulfuron)** POST PRE | 0.5-1.0 oz. per acre. Apply to dormant rhubarb in the spring. If weeds are present, add 0.5 pt. NIS per 25 gal. of solution (0.25% v/v). May cause

crop stunting. Use low rate to determine crop safety under field conditions. Controls yellow nutsedge. Does not control grass. REI: 12-hour. PHI: 60-day. HRAC 02.