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Growing Strawberries in Utah

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Strawberry - The Name?

- English name ‘Strebere” from “running stems strawed over the ground…”
- Children threaded berries on grass straws to sell
- Straw mulch
- Old English noun = stre “straw” and verb = “to straw” = strew, scatter, spread, disperse

Strawberries are the most popular berries raised in Utah home gardens

Grow them in containers, in small gardens or as ornamental plants

They are short-lived perennials

- The best production for most strawberry varieties comes in the first through fifth year

There are hundreds of strawberry cultivars

- Not all are adapted to Utah's growing conditions
- Each cultivar has advantages and disadvantages
- Selecting the right variety insures the desired results

The three types of strawberries that grow in Utah

- They are June-bearing
- Ever-bearing
- Day-neutral

All three types grow and produce abundantly in Utah

June-bearing plants need the short fall days to initiate (set) flower buds

The flowers that blossom the following summer are set in the fall

They produce one early summer crop beginning in early June

Plant these types for a larger but more concentrated harvest

- Because the flower buds are produced in the fall, some cultivars need extra protection during the winter to protect the set flower buds
- Cover the plants with organic mulch, such as straw
- Once the weather warms in the spring and growth begins, remove the mulch

Ever-bearing strawberries set fall flowers that produce the next summer

- They also initiate flowers during the summer months
- This allows them to produce a second crop in late summer
- During cooler periods in the summer, they also produce occasional berries
- Most true ever-bearing plants are being replaced with day-neutral varieties

Day-neutral strawberries are different

- They do not require a short day (long night) to initiate flowers and fruit production
- They start to produce once they reach a determined maturity level, normally during the late summer of their first year

They produce a larger crop in the early summer and late fall

- They grow a sporadic crop throughout the summer
- Cooler temperatures increase production during the summer months

Day Neutral Strawberries

Site Selection

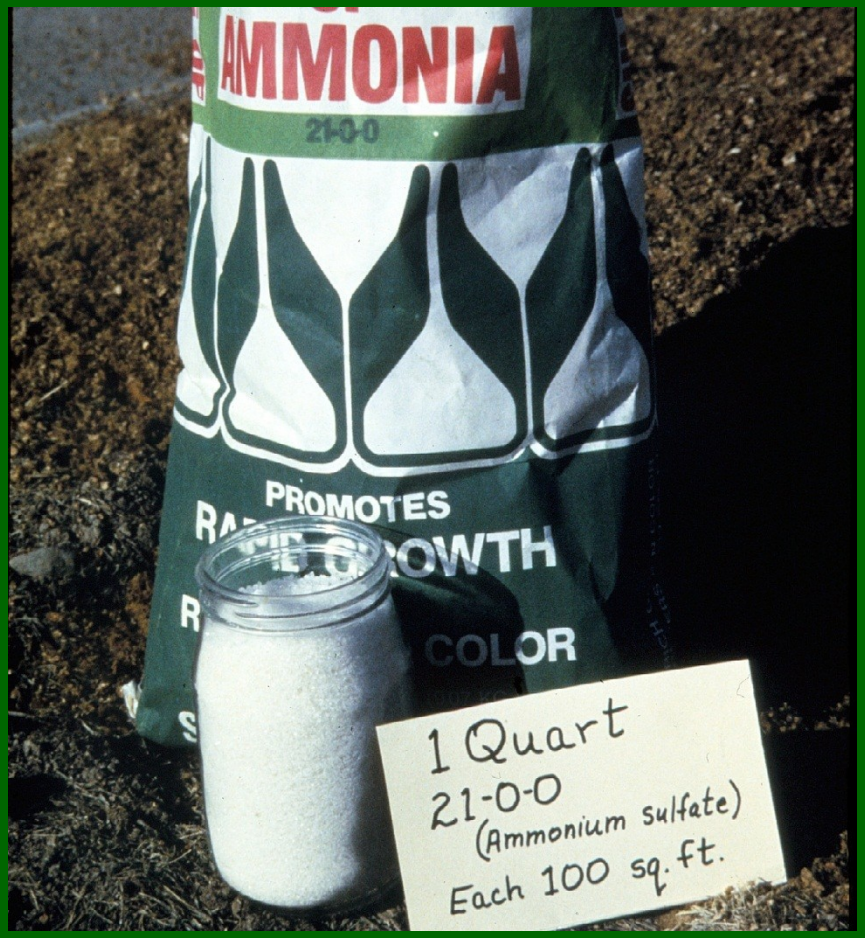
Strawberries require at least 8 hours of sunlight to produce a good crop

- They grow in shady locations but fruit production and plant vigor are reduced
- Strawberries prefer well-drained soil with abundant organic matter
- They are susceptible to root rot in heavy, wet soils

Soil Preparation

Incorporate 2-6 inches of organic material 2-4 weeks before planting

Apply nitrogen fertilizer to insure organic matter decomposition



Raised beds and grow boxes

- Improve drainage
- Raise soil temperatures
- Make picking easier

Raise the soil 8-12 inches and keep the beds 18 to 36 inches wide

Determine the distance between the rows

- By the cultivating equipment
- Desired working space
- Keep a minimum of 18 inches between rows

Plant Selection

Buy strawberries as bare-root plants in the spring

Purchase them at reputable garden centers or from catalogs

They are normally sold in bundles of 25

Make sure the plants have been kept moist and the roots are still healthy

Strawberries are available later in the season as potted plants

These are more expensive and no more productive than bare root plants

Establishment

Planting and Spacing

Strawberry plants need space to produce the most berries

- Plant them a minimum of eight inches apart in a single row
- Offset the plants by six inches in an off-set row
- This gives each plant room to grow and still have sufficient light, water, and nutrients

STRAWBERRY TRAINING SYSTEMS

Matted Row	Hedge Row	Double Hedge Row	Hills Single Row	Hills Double Row	Hills Double Alternate
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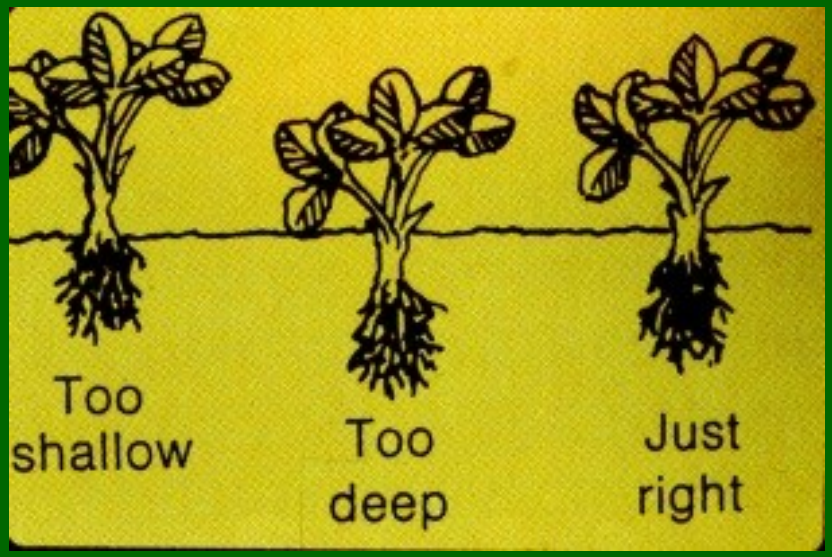
O = mother plant
o = daughter plant

Strawberry culture

- Raised beds
- Spaced matted rows
- Matted rows
- Single Hill
- Double Hill
- Multiple Hill
- Spacing from 5” to 5’

The planting depth is very critical to a young plant



- If too deep, the crown will rot
- If too shallow, the roots will dry

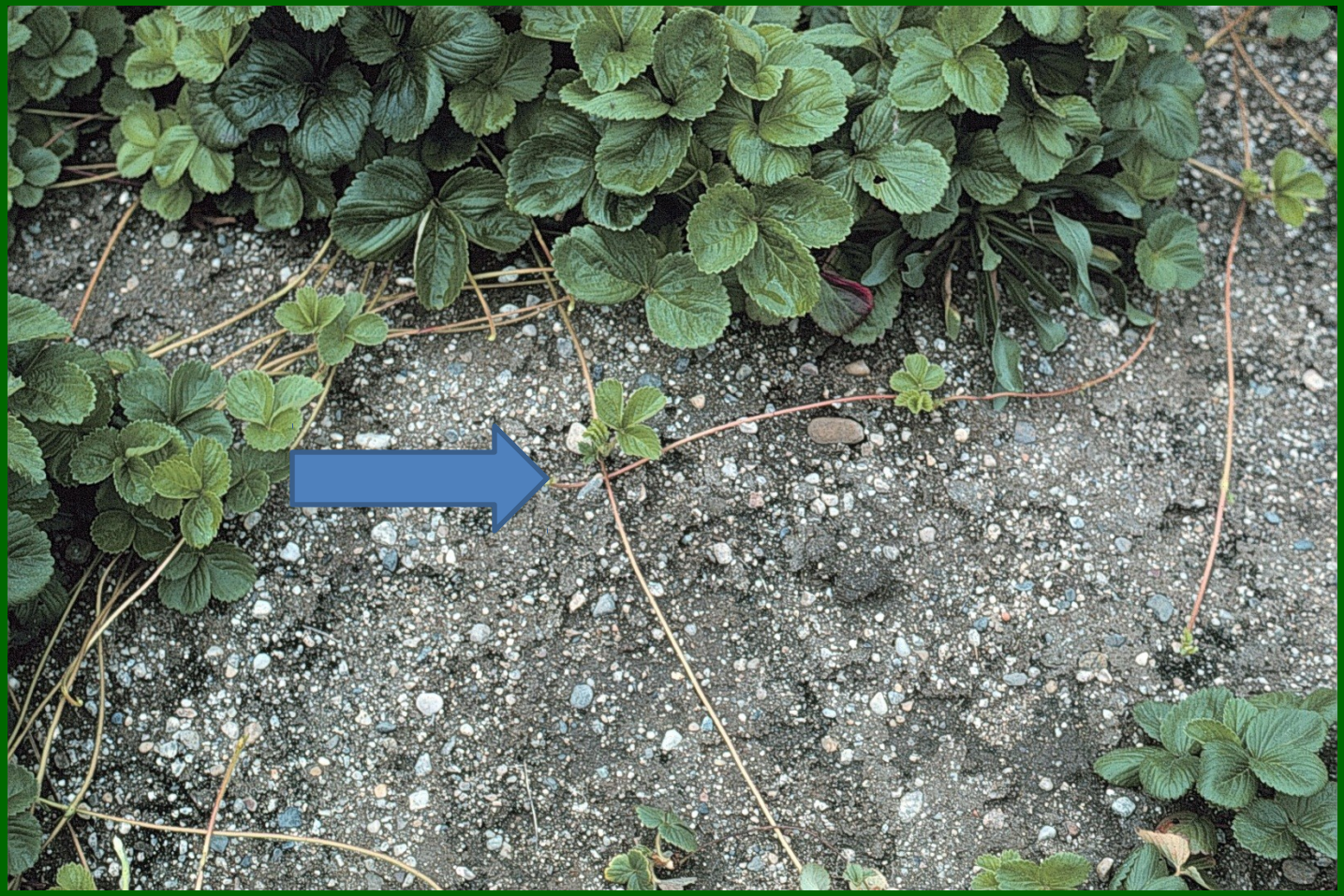
The soil level should be in the area between the crown and roots

Plant Characteristics

The original bare root plant is called the mother, or first generation plant

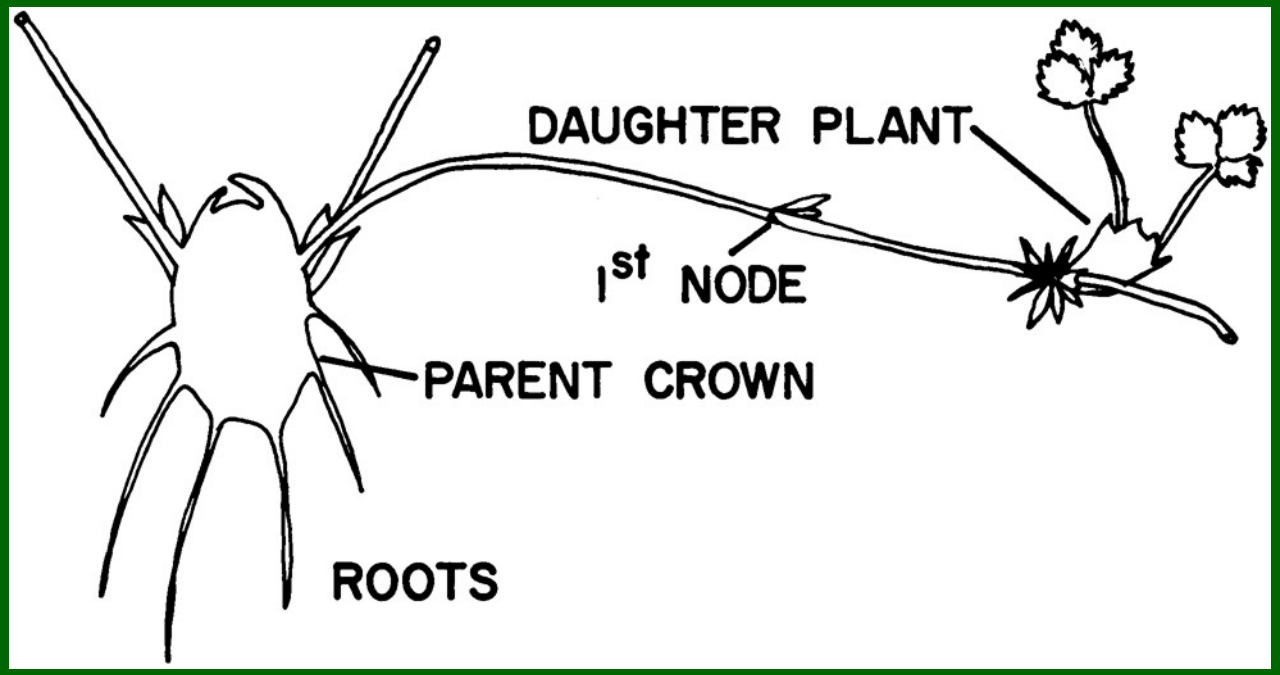
It has one crown, roots, and top growth

The established mother plant grows runners that root at every other node



Once the runners root, they are called daughter plants

Daughter plants are generally less productive than mother plants



These daughter plants propagate new plants

- The further removed from the mother plant (in generations) daughter plants are, the less productive the plants will be

Strawberry plants also reproduce by growing additional crowns

Propagate these by dividing the mother plant every couple of years

The original crown produces 4 to 20 new mother plants annually

Divisions are more desirable than daughter plants and yield better

- Dividing the crowns each spring reduces competition and develops healthier, more productive plants
- As the mother plants divide and increase the number of crowns, they compete for water, light and nutrients

This reduces production and reduces plant health

Thin the crowns to five to ten crowns per plant

Early Care

Remove runners and developing daughter plants

- These take energy away from the mother plant during the first year
- Removing them encourages strong crown and root growth for better future yields
- Keep them evenly moist but not too wet

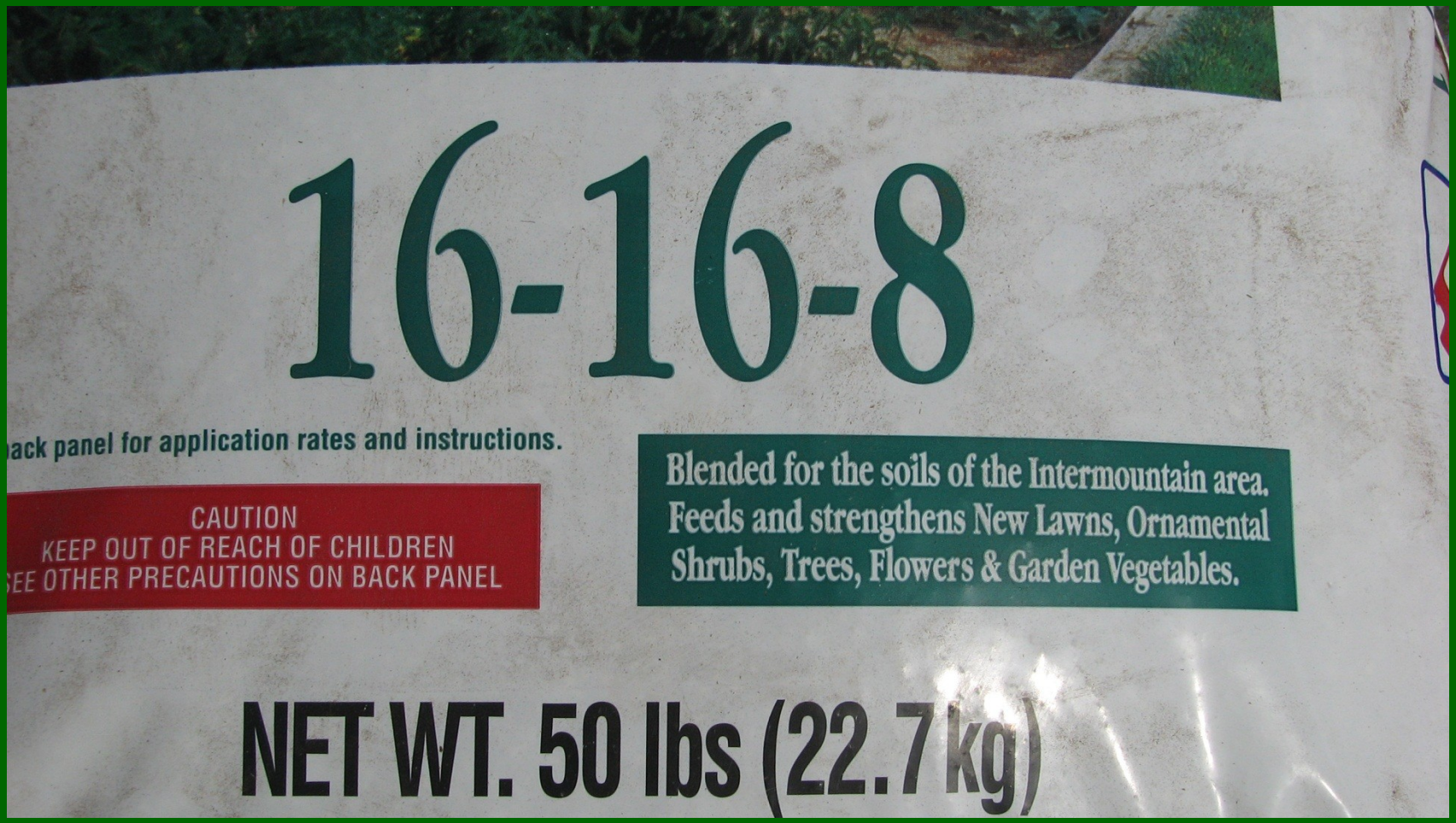
Annual Maintenance

Fertilization

- Plants do not need fertilizer the first year if planted in very fertile soil
- Add 1 cup ammonium sulfate per 10 feet of row after fruiting is finished

Strawberries normally require minimal amounts of nitrogen

Add complete fertilizer every 3-4 years if soil tests or symptoms if needed



Irrigation

Drip irrigation under plastic

Strawberries are sensitive to overwatering

- They have a shallow root system
- They require up to two inches of water per week during fruiting
- They are somewhat drought tolerant, but production drops with insufficient water

Mulches

Strawberries are not competitive and yields drop if weeds infest the planting

The best weed control method is using organic or synthetic mulches

Apply organic mulches in the late spring after the soil warms

These mulches break down and improve the soil

- Add extra nitrogen to break down the mulch

Plastic or weed barriers also help control weeds

- Mulches warm the soil in the spring
- Conserve moisture
- Keep daughter plants from developing and crowding the patch

Plastic Mulches

Plant Rotation

Remove and replace strawberry plantings every 4-6 years

Older plants yield less and have often developed disease and insect problems

If possible rotate to a new spot when replanting to reduce pest problems

- Remove existing plants in the fall and prepare the spring planting location

California Berry Production

- 75% of USA total
- 16% of USA acreage
- 40 to 50 tons/acre

- 60% of US crop
- 10,000 acres (US total 25,000 acres)
- New Cultivars (Breeding programs)
- Air freight
- In transit Controlled Atmosphere
- Annual planting
- Soil Fumigation

California Berry Production

- Clear plastic mulch
  - Soil heating (winter crop)
  - Clean (no dirty berries)
  - Larger fruit
  - Longer season
- White plastic mulch
  - Cools soil
  - Summer crop

Strawberry Fruit Uses

- Fresh
- Preserves
- Jams
- Jellies
- Frozen
- Juices
- Extracts
- Flavorings

Limits to productivity

- Spring freezes
- Wind
- Biological competition
  Weeds - especially grasses and
  Animals - birds, slugs, ants, rodents
  Parasites - nematodes, viruses, blights
  Insects – root weevils, mites, earwigs

F. vesca
Virus indicator plant

Virus infected plant

Strawberries in the home

- Rototilling
- Soil conditioning
- Full Sun Area
- Raised Bed
- Soaker hose
- Mulch
- Liquid fertilizer
- Net for fruit protection

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