Thriving in the Summer Heat

Casey Hentges
Associate Extension Specialist
Oklahoma Gardening Host


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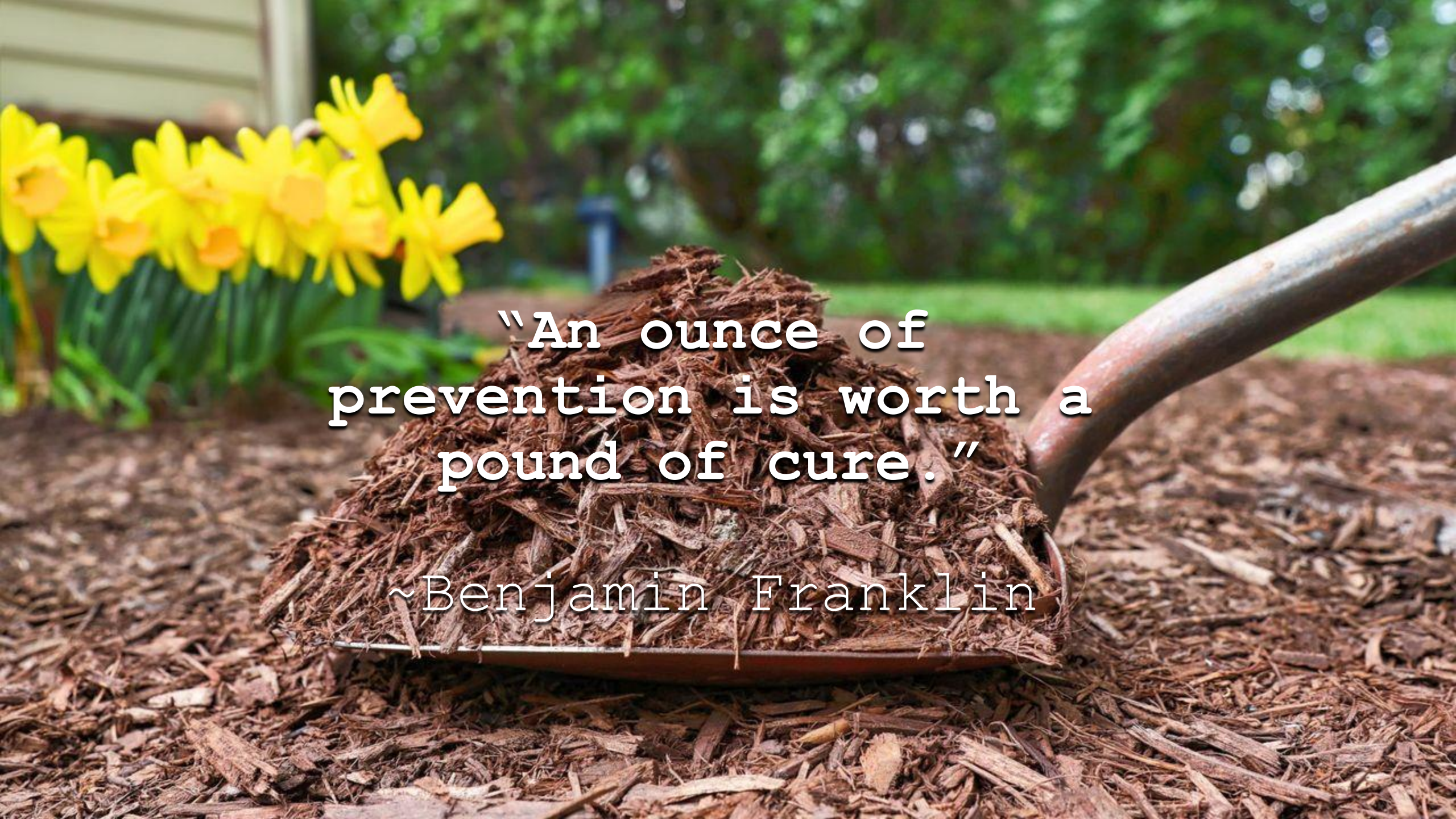
3 Reasons
TO BE
A Teacher:
JUNE,
JULY,
AUGUST


"An ounce of prevention is worth a pound of cure."
~Benjamin Franklin

June - Garden

Cultivate and mulch. Mulching will reduce about 70% of the summer yard maintenance.

Remain alert for insect damage. Add spider mites to the list. Foliage of most plants becomes pale and speckled; juniper foliage turns a pale yellowish color. Shake a branch over white paper and watch for tiny specks that crawl. Watch for 1st generation fall webworm. (EPP-7306)

Pine needle disease treatments are needed again in mid-June. (EPP-7618)

Softwood cuttings from new growth of many shrubs will root if propagated in a moist shady spot.

June - Turfgrass

Fertilize warm season grasses. Fertilized 3-5 times per season using one pound of actual nitrogen per 1,000 sq. ft. in each application. Apply one pound in April, May, June, August and September for a high-quality lawn. Water in nitrate fertilizers. (HLA-6420)

Dollar spot disease of lawns can first become visible in mid-May. Make certain fertilizer applications have been adequate before applying a fungicide. (EPP-7658)

Seeding of warm-season grasses should be completed by the end of June to reduce winter kill losses. (HLA-6419)

Brown patch disease of cool-season grasses can be a problem. (HLA-6420)

Post-emergent control of crabgrass and summer annual grasses is best performed on young plants. (HLA-6421)

Continue to water deeply as needed. Apply at least one inch of water each time.

July - Garden

Divide and replant crowded hybrid iris (bearded iris) after flowering until August.

Expect some leaf fall, a normal reaction to drought. Water young plantings well.

The hotter and drier it gets, the larger the spider mite populations become! Spraying plant foliage will provide partial relief of this pest.

Begin to monitor water level in water gardens due to evaporation.

July - Turfgrass

- Apply preventative white grub treatments—late-June to mid-July.
- Mowing heights for cool-season turf grasses should be 3” during hot, dry summer months. Gradually raise mowing height of bermudagrass lawns from 1 1/2 to 2 inches.
- Vegetative establishment of warm-season grasses should be completed by the end of July to ensure the least risk of winter kill. (HLA-6419)
- Brown patch disease of cool-season grasses can be a problem. (HLA-6420)
- Meet water requirements of turf. (HLA-6420)
- Fertilization of warm-season grasses can continue if water is present for growth. (HLA-6420)

August - Garden

Water all plantings thoroughly unless rainfall has been adequate.
The fall vegetable garden is planted now. (HLA-6009)
Divide and replant spring blooming perennials.
Young trees and shrubs may be fertilized again.
Discontinue dead-heading roses by mid-August to help initiate winter hardiness.
Watch for a second generation of fall webworm in late August/early-September.

August - Turfgrass

- For areas being converted to tall fescue this fall, begin spraying bermudagrass with glyphosate products in early-August. (HLA-6419 & HLA-6421)
- White grub damage can become visible this month. Apply appropriate soil insecticide if white grubs are a problem. Water product into soil. (EPP-7306)
- Pre-emergent herbicides for winter-annual weed control in warm-season grasses can be applied in late-August. Water in the product after application. (HLA-6421)
- Don’t apply pre-emergent herbicides where you plan to sow cool season grasses.
- Irrigated warm-season lawns may be fertilized again. (HLA-6420)
- Brown patch disease of cool-season grasses can be a problem. (HLA-6420)

Watering Strategies

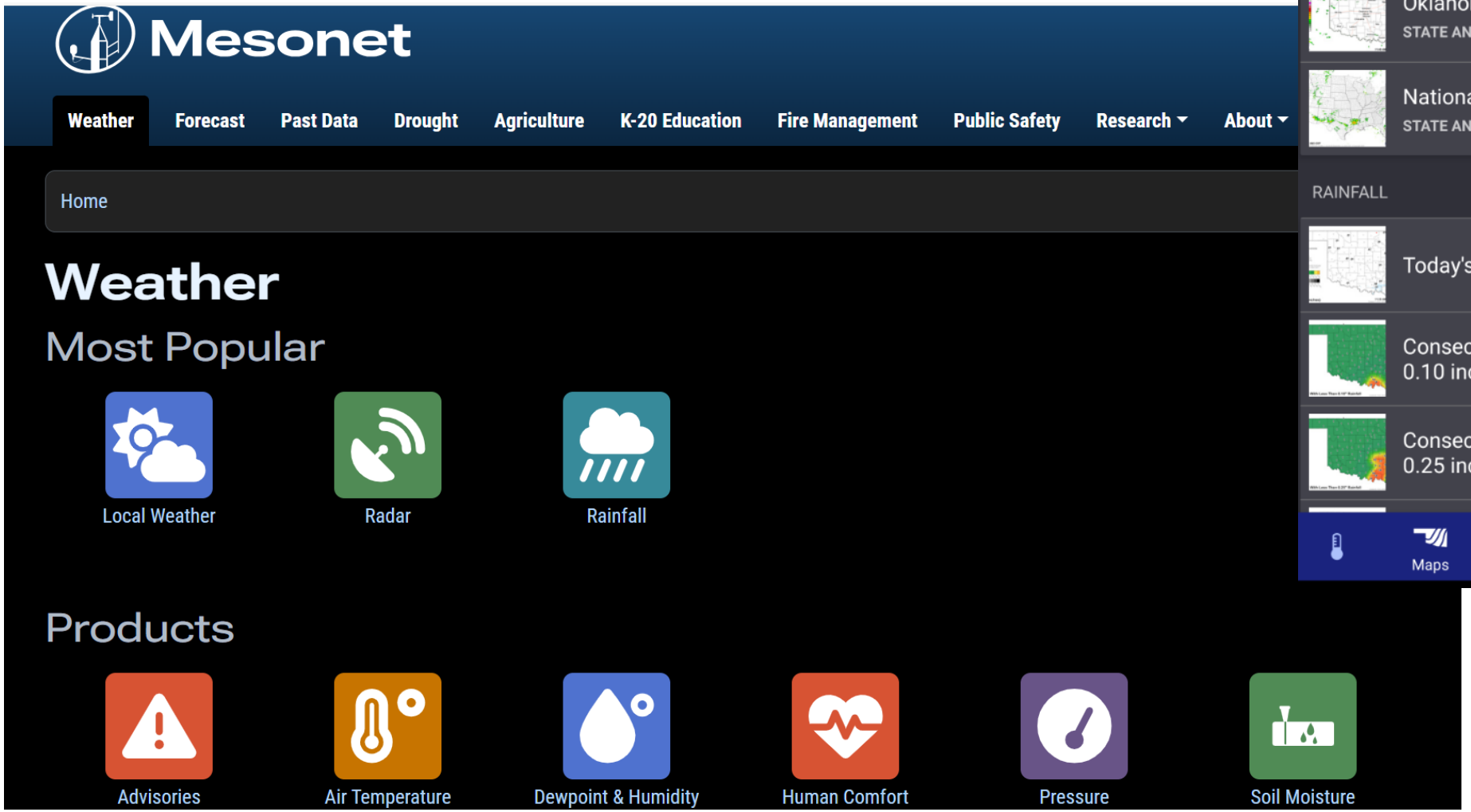
- **Water Deeply and Early:**
  - Water in the early morning to reduce evaporation and fungal growth.
  - Aim for deep watering (1-2 inches weekly) rather than frequent shallow watering.
- **Drip Irrigation or Soaker Hoses:**
  - These systems deliver water directly to roots, reducing waste and keeping foliage dry to prevent disease.
- **Mulching:**
  - Apply a thick layer (2-3 inches) of mulch (pine straw, bark, or grass clippings) to retain soil moisture and regulate temperature.

Container Gardening

- Larger containers will not dry out as fast.
- Consider where you are placing the containers.
- Use water-retaining crystals or gel.
- Group containers together.

Leon Sloan's Wicking Tubs

Mesonet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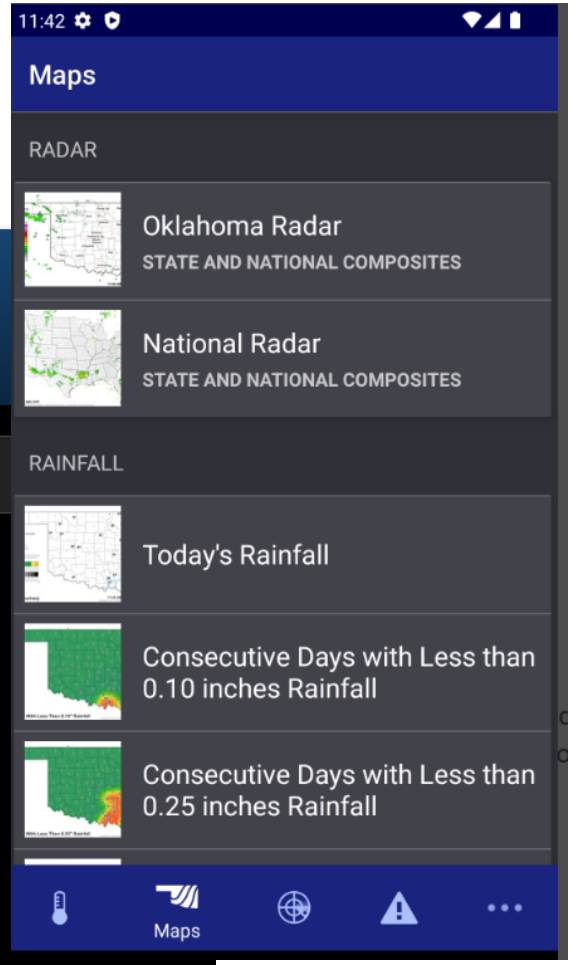
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Consecutive Days with Less than 0.10 inches Rainfall
Consecutive Days with Less than 0.25 inches Rainfall
Maps

Protecting Plants from Heat Stress

- **Hydrate Plants:**
  - Keep plants hydrated during heat waves, especially in raised beds or containers that dry out quickly.
- **Shade Cloth or Row Covers:**
  - Protect sensitive plants with shade cloth during peak heat.
- **Resilient Plant Choices:**
  - Native plants are better suited to Southern summers.

Warm-Season Crops:

- Okra
- Sweet potatoes
- Peppers
- Eggplants
- Southern peas (e.g., black-eyed peas)

Summer Harvest Tips

- Harvest crops like tomatoes, cucumbers, and squash regularly to encourage continued production.

- Pick crops early in the morning when temperatures are cooler to maintain freshness.

Summer Perennials and Ornamentals

- Plant heat-loving perennials
- Add heat-tolerant blooms
- Low maintenance plants
- Tolerant of less than perfect soil

Common Summer Pollinators

Bees:

Honeybees, bumblebees, carpenter bees, and native bees are highly active in summer.

Butterflies:

Monarchs, swallowtails, and painted ladies thrive in warm weather.

Hummingbirds:

Essential pollinators for tubular flowers, they are highly active during summer migration and nesting.

Beetles and Flies:

Less noticeable but important, these insects contribute to pollination.

Moths:

Night-active pollinators like hawk moths feed on evening-blooming flowers.

Challenges Pollinators Face in Summer

Heat Stress: Prolonged heat can dehydrate pollinators and reduce nectar availability.

Limited Foraging Resources: As spring blooms fade, some areas may lack diverse flowering plants in summer.

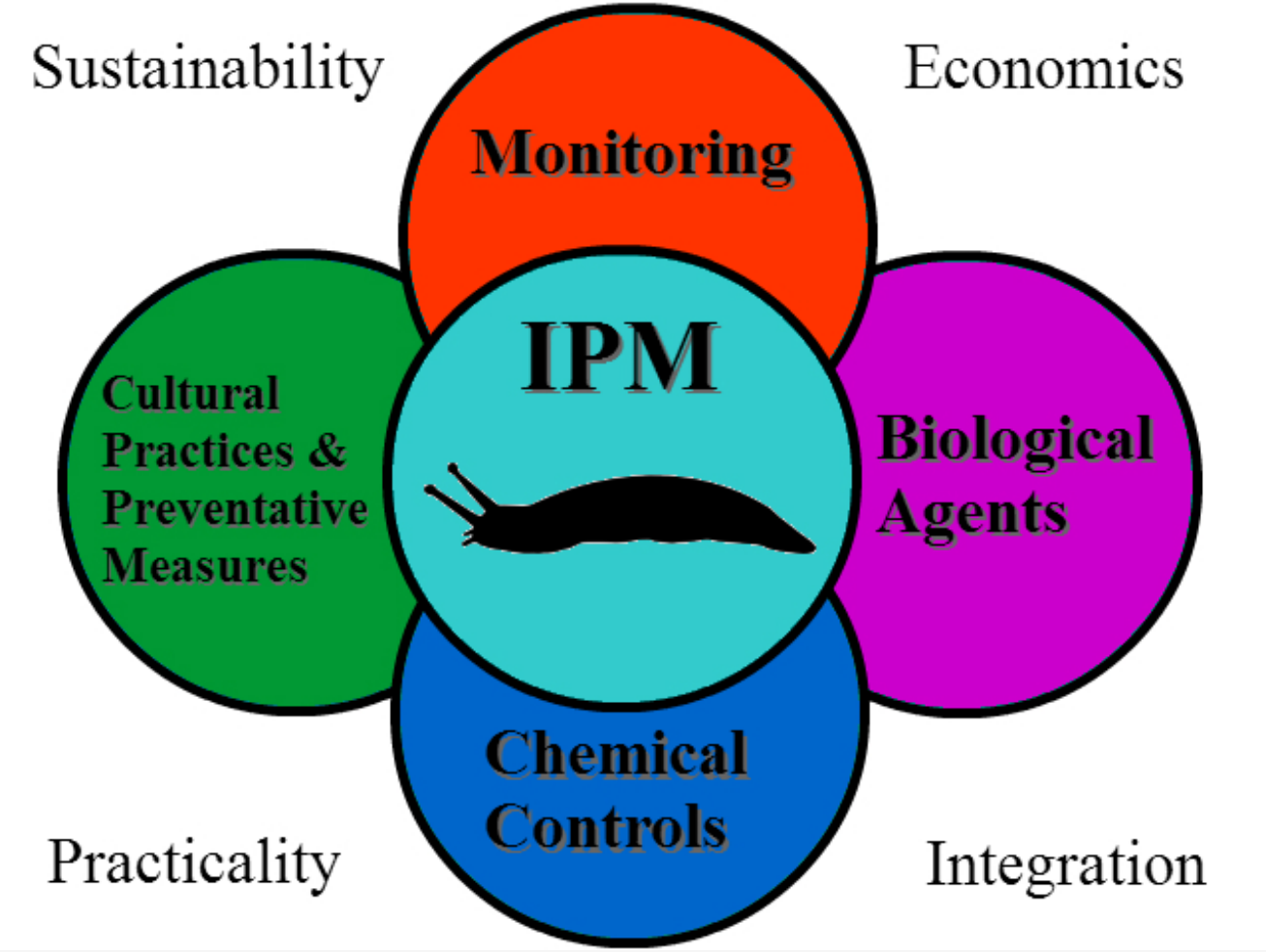
Pesticides: The use of chemical pesticides peaks during the growing season, which can harm pollinators directly or indirectly.

How to Support Pollinators in Summer

Offer Water Sources:

Pollinators need water, especially in the heat. Provide:

- A shallow dish with fresh water and pebbles for bees and butterflies to perch on.
- A clean birdbath or dripping water source for hummingbirds.



Practice IPM – Integrated Pest Management

- An approach to controlling pests that combines tactics based on scientific knowledge of a pest including its biology, behavior, and environmental context.
- Includes methods such as removing the food source that attracts the pest, using physical barriers to exclude the pest, and using beneficial organisms that feed on the pest.

Be responsible.

- Choose the least toxic, less persistent pesticide.
- Always read the pesticide label carefully.
- Make targeted applications.
- Avoid applying pesticides to plants during flowering.

Tip:

While turfgrass is not attractive to bees, many flowering weeds found in lawns do attract bees, such as clover and dandelion. Mow the lawn to remove the flowers prior to treating a lawn with pesticides.

Create Shelter:

- Include native shrubs, trees, and grasses to provide shade and nesting sites.
- Leave areas of bare soil for ground-nesting bees.

Quick Tips for a Pollinator-Friendly Garden

Choose single-petal varieties over double-petal ones, which are harder for pollinators to access.

Allow some herbs like basil, thyme, and dill to flower—they're favorites for bees and butterflies.

Group flowers in clusters to make foraging easier.

Provide a mix of flower shapes and sizes to attract different species.

Plant Native Species:

Native plants are adapted to local climates and are more attractive to native pollinators.

Leadplant (*Amorpha canescens*)

- 1-3’ shrub
- Purple flower spikes that blooms spring-summer
- Can tolerate range of soil pH and some salinity
- Native from Canada to TX

Purple Coneflower (*Echinacea purpurea*)

- Hardy perennial
- Purple petals and a central cone from late spring to early fall
- Attracting bees and butterflies
- Thrives in full sun and well-drained soil.

Black-Eyed Susan (*Rudbeckia hirta*)

- Bright yellow petals surrounding a dark brown center from summer to early fall.
- Popular among various pollinators.
- Prefers full sun and tolerates a range of soil types.

Butterfly Milkweed (*Asclepias tuberosa*)

- Vibrant orange flowers in early to mid-summer
- Crucial nectar source for monarch butterflies and other pollinators.
- Requires full sun and well-drained soil.

Passion Vine (*Passiflora incarnata*)

- Vining perennial
- Summer bloomer
- Full sun to part shade
- Dry to moist soils
- Host plant for Gulf Fritillary, Red-banded Hairstreak, Banded Hairstreak

Frogfruit (*Phyla nodiflora*)

Mexican hat (*Ratibida columnifera*)

- Blooms June-August
- Nectar source for butterflies and many bees.
- Full Sun
- Tough plant that can handle most soils
- Drought tolerant

Indian Blanket (*Gaillardia pulchella*)

- Also known as Firewheel, this plant features red and yellow blooms that attract bees and butterflies.
- Blooms from late spring through summer.
- Thrives in full sun and sandy or well-drained soils.

Compassplant (*Silphium laciniatum*)

- Blooms May-August
- Often found in disturbed soils
- Tolerant of clay or caliche soils
- Produces a 3-10 ft flower spikes.

Partridge pea (*Chamaecrista fasciculata*)

- Blooms Summer-Fall
- Larval host for butterfly & moth
- Attracts beneficial insects and bees
- Deer resistant
- Dry to moist soil conditions
- Will reseed

Plains Coreopsis (*Coreopsis tinctoria*)

- Blooms spring-summer
- Tolerant of dry to moist conditions
- Grows well in poor sandy or rocky soil and disturbed sites.

Blazing Star (*Liatris* sp.)

- Tall spikes of purple flowers that are highly attractive to butterflies and bees.
- Blooms from mid-summer to early fall.
- Prefers full sun and moist, well-drained soils.

Goldenrod (*Solidago*

- Bright yellow flowers that provide late-season nectar for pollinators.
- Blooms in late summer to fall
- Thrives in full sun and a variety of soil conditions.

Solidago shortii 'Solar Cascade'

Turk's Cap (*Malvaviscus drummondii*)

- 2-5' perennial shrub
- Blooms May-Oct with hibiscus like flowers that hummingbirds love.
- Comes in red, pink, and white.

Little Bluestem (*Schizachyrium scoparium*)

- A native grass with blue-green foliage that turns reddish-orange in the fall. It tolerates drought and poor soils, making it ideal for full sun

Switchgrass (*Panicum virgatum*)

- This warm-season grass is adaptable to various soil types and provides excellent erosion control. It prefers full sun and is drought-tolerant once established.

KERR CENTER GUIDE

Native Plants *for* Native Pollinators in Oklahoma

DAVID REDHAGE
MAURA MCDERMOTT

KERR CENTER FOR SUSTAINABLE AGRICULTURE | 2015

Native Plants for Pollinators & Beneficial Insects:
Southern Plains

LEFT—Native bee covered in pollen inside a *Callirhoe involucrata* flower. RIGHT—*Melissodes desponsus*, a thistle specialist bee, collects pollen from *Cirsium altissimum*.

Plant Selection

These plants are attractive to a diversity of pollinators, providing pollen and nectar to bees, butterflies, flies, beetles, wasps, and moths. Some plants provide additional resources as caterpillar host plants or nesting sites and nesting materials for above-ground nesting bees. Many support specialist bees that require pollen from specific plants to survive and supplement beneficial insects that can help control pests of ornamental and crop plants. These plants are native to this region—determine if a species is native in your area at plants.usda.gov—and can be used to create or enhance pollinator habitat across rural and urban landscapes.

When purchasing plants, let your local garden center or nursery know you want plant material free of pesticides that may harm pollinators.

Resources

- Pollinator Conservation Resource Center: xerces.org/pollinator-resource-center
- Bring Back The Pollinators: BringBackthePollinators.org
- Reducing Pesticide Use & Impacts: xerces.org/pesticides

SCIENTIFIC NAME	COMMON NAME	BLOOM	LIFE	FORM	SUN	SOIL	ADDITIONAL DETAILS
Acacia angustissima	Prairie acacia	Jun–Oct	P			D	
Amorpha canescens	Leadplant	Mar–Aug	P			D	
***Asclepias tuberosa*★**	Butterfly milkweed	Jun–Aug	P			D	
Asclepias viridis	Green antelopehorn milkweed	Mar–Aug	P			D–M	
Baptisia sphaerocarpa	Yellow wild indigo	Mar–Aug	P			D–M	
Bouteloua curtipendula	Sideoats grama	Jun–Oct	P			D	
Callirhoe involucrata	Purple poppymallow	Mar–Aug	P			D	
Carex brevior	Shortbeak sedge	Mar–Aug	P			D–W	
Ceanothus americanus	New Jersey tea	Mar–May	P			D	
***Cephalanthus occidentalis*★**	Buttonbush	Jun–Aug	P			M–W	
Cercis canadensis	Eastern redbud	Mar–May	P			D–M	[No Title]
***Chamaecrista fasciculata*★**	Partridge pea	Jun–Oct	A			D–M	

KEY — Life: Annual, Biennial, Perennial · Soil: Dry, Moist, Wet · ★ *Staff favorite* · Form: Forb, Cactus, Grass, Sedge, Shrub, Tree, Vine · Sun: Full sun, Partial sun, Full shade · Add'l. Details: Larval host (butterfly, moth), Supports specialist bee, Attracts beneficial insects, Bumble bee plant, Nest site, Nest materials, Nest thatch, Deer resistant

XERCES SOCIETY for Invertebrate Conservation

Native Plants for Pollinators & Beneficial Insects: Southern Plains *continued*

SCIENTIFIC NAME	COMMON NAME	BLOOM	LIFE	FORM	SUN	SOIL	ADDITIONAL DETAILS
***Cirsium altissimum*★**	Tall thistle	Jun–Oct	B / P			D–M	
Coreopsis tinctoria	Plains coreopsis	Mar–Aug	A / P			D–M	
Dalea candida	White prairie clover	Mar–Aug	P			D–M	
***Echinacea angustifolia*★**	Narrow-leaved coneflower	Mar–Aug	P			D	
Eryngium leavenworthii	Leavenworth's eryngo	Jun–Oct	A			D	
Eryngium yuccifolium	Rattlesnake master	Jun–Aug	P			D–W	
Gaillardia pulchella	Indian blanket	Mar–Aug	A / B / P			D–M	
Glandularia bipinnatifida	Dakota mock vervain	Mar–Oct	A / P			D	
Helianthus petiolaris	Prairie sunflower	Jun–Oct	A			D–M	
Liatris punctata	Dotted blazing star	Jun–Oct	P			D	
Lupinus texensis	Texas bluebonnet	Mar–May	A			D–M	
Mentzelia decapetala	Tenpetal blazing star	Jun–Aug	B / P			D	
***Monarda citriodora*★**	Lemon beebalm	Jun–Aug	A			D–M	
Oenothera macrocarpa	Missouri evening primrose	Mar–Aug	P			D	
Opuntia macrorhiza	Twistspine prickly pear	Mar–Aug	P			D	
Passiflora incarnata	Purple passionflower	Jun–Oct	P			D–M	
Penstemon tubiflorus	White wand beardtongue	Mar–Aug	P			D	
Phlox pilosa	Prairie phlox	Mar–May	P			D–M	
Prunus angustifolia	Sand plum	Mar–May	P			D–M	
***Pycnanthemum tenuifolium*★**	Narrowleaf mountainmint	Jun–Aug	P			M	
Ratibida columnifera	Upright prairie coneflower	Jun–Aug	P			D–M	
Rhus aromatica	Fragrant sumac	Mar–Aug	P			D	
Ribes aureum	Golden currant	Mar–May	P			D–M	
Salvia azurea	Blue sage	Sep–Oct	P			D–M	
Schizachyrium scoparium	Little bluestem	Jun–Oct	P			D–M	
Silphium laciniatum	Compass plant	Jun–Aug	P			D–M	
Simsia calva	Awnless bushsunflower	Mar–Oct	P			D	
Solidago nemoralis	Gray goldenrod	Jun–Oct	P			D	
Sorghastrum nutans	Indiangrass	Jun–Oct	P			D	
Sphaeralcea coccinea	Scarlet globemallow	Mar–Aug	P			D–M	
***Symphyotrichum oblongifolium*★**	Aromatic aster	Jun–Oct	P			D	
Tradescantia occidentalis	Prairie spiderwort	Mar–Aug	P			D–M	
Verbena stricta	Hoary verbena	Jun–Oct	A / P			D	
***Verbesina encelioides*★**	Golden crownbeard	Mar–Oct	A			D–M	
Verbesina virginica	Frostweed	Jun–Oct	B / P			M–W	
Vernonia baldwinii	Baldwin's ironweed	Jun–Oct	P			D–M	
Yucca glauca	Soapweed yucca	Mar–Aug	P			D	
***Zizia aurea*★**	Golden Alexanders	Mar–Aug	P			D–W	

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Acknowledgments

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22-030_01

The success of your fall garden begins in summer.

Table 1. Tender Vegetables - (harvest before frost).* Many varieties will do well. Select varieties that are early maturing and disease resistant.

Kind	*Time to plant*	*Method of Planting*	*Between Rows (inches)*	*In the Row (inches)*	*Depth to Cover Seed (inches)*	*Days From Planting to Harvest*
Beans, Bush	Aug 10-20	Seed	18-24	3-6	1	50-60
Beans, Cowpea	July 15-Aug 1	Seed	18-48	6-12	1.5	75
Beans, Pole	July 15-30	Seed	24-36	12-18	1	60-70
Beans, Lima	Aug 10-20	Seed	18-24	4-8	1	70-80
Cilantro	July 15-Aug 1	Seed	9	4	.5	When plant is 4-6 in. tall
Corn, Sweet[3]	July 15	Seed	36	12-18	1	80-100
Cucumber	Aug 10-20	Seed or Plants[2]	36-32	12-30	.5 to .75	60-70
Eggplant	July 15	Plants	36	18	-	80-90
Pepper	July 15	Plants	36	24	-	90-110
Pumpkin	July 15-30	Seed or Plants[2]	36-60	30-48	1	100-120
Summer Squash	July 15-Sept 1	Seed or Plants[2]	36	24-36	1	40-50
Winter Squash	July 15-30	Seed or Plants[2]	36-48	30-48	1	100-120
Tomatillo	July 15	Plants	48	24-36	-	90-100
Tomatoes	July 1-15	Plants	48	24-36	-	70-90

1 = There may be advantages to planting earlier, if soil moisture and climatic conditions are favorable.
2 = Set plants into the garden 1 to 1 1/2 months after planting the seed.
3 = Be vigilant about scouting for fall armyworms in whorl of seedlings and young plants.
* Unless using a cold frame or row covers to extend the season.

Table 2. Semi-hardy vegetables - (may continue to grow and be harvested after several frosts). Many varieties will do well – select varieties that are early maturing and disease resistant.

Kind	*Time to Plant*	*Method of Planting*	*Between Rows (inches)*	*In the Row (inches)*	*Depth to Cover Seed (inches)*	*Days From Planting to Harvest*
Beet	Aug 1-15	Seed	12-18	3-4	.5-.75	60-70
Broccoli	July 15-Aug 15	Plants	18-30	16-20	-	70-80
Brussels Sprouts	July 15-Aug 15	Plants	18-30	16-20	-	90-100
Cabbage	Aug 1-25	Plants	18-24	16-20	-	75-90
Chinese Cabbage	Aug 1-25	Seed or Plants[1]	12-16	10-18	.5	75-90
Carrots	July 15-Aug 15	Seed	12-18	1-2	.25	70-80
Cauliflower	Aug 1-25	Plants	18-24	16-20	-	70-80
Collards	Aug 1-Sept 1	Seed or Plants[1]	30-36	18-24	.5	75-85
Garlic	Sept 1-Oct 15	Bulbs (cloves)	12	4	2	Early June the following year
Irish Potato	Aug 1-15	Seed potatoes	30-42	10-16	2	90-110
Kale	Sept 1	Plants	24-36	18	.25	50-65
Kohlrabi	Sept 1	Plants	18-24	4-6	-	50-70
Leaf Lettuce	Aug 1-15	Seed or Plants[1]	12-18	2-3	.25	60-70
Leek	Sept 1	Seed or Plants[1]	12-24	2-4	.5	Late spring the following year
Mustard	Sept 10-Oct 10	Seed	12-18	2-3	.5	40-50
Onions	Sept 1	Seed, Sets, or Plants[1]	12-18	4	.25	Late spring the following year
Parsnip	July 15-Aug 15	Seed or Plants[1]	12-18	4-6	.25	120
Peas, green	Aug 15-Sept 1	Seed	36	2	2	60-90
Radish	Aug 15-Oct 10	Seed	8-12	.75-1	.5	20-40
Rutabaga	Aug 15-Sept 15	Seed	24-36	3-4	.5	80-90
Spinach	Sept 5-25	Seed	8-12	1-2	.5	50-60
Swiss Chard	Aug 1-Sept 15	Seed	24-30	2-3	.5	50-60
Turnip	Aug 1-Sept 15	Seed	12-124	2-3	.5	50-60

1 = Set plants into the garden 1 to 1 1/2 months after planting the seed.

Note: If planting or sowing into cold frames, plant two weeks later than date indicated. With our abundant winter sunshine, be sure to allow for ventilation. Also, check frequently for pests, especially aphids.

Stay Safe While Gardening

Garden During Cooler Hours:

- Work in the early morning or late afternoon to avoid peak heat.

Stay Hydrated:

- Drink water frequently and take breaks in the shade.

Protect Yourself:

- Wear sunscreen, and lightweight, breathable clothing.

Protect Your Eyes:

- Wear wide-brimmed hats, or sunglasses

Summer Vacation

Visit gardens

Get inspiration

Take pictures

Resources:

- Landscape Maintenance Schedule, HLA-6408
  - https://extension.okstate.edu/fact-sheets/landscape-maintenance-schedule.html
- Protecting Pollinators While Using Pesticides
  - https://ohioline.osu.edu/factsheet/anr-68
- Native Plants for Native Pollinators from Oklahoma
  - https://kerrcenter.com/publication/native-plants-for-pollinators/
- Native Plants for Pollinators & Beneficial Insects – Southern Plains
  - Xerces Society
- Fall Gardening, Fact Sheet - HLA-6009
  - https://extension.okstate.edu/fact-sheets/fall-gardening.html

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