
Is that a Weed or a Plant?

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Weed Definition

Any plant growing successfully
where you don't want it

Remember



Weeds are defined personally.

One man's weed
is another man's flower or food.

Weeds are Location Specific

- Bermuda grass
 - In a lawn is fine
 - In the flower bed is not fine



Weeds Are Survivor Plants



- Grow rapidly and are competitive
- Adapt easily to multiple environments
- Change because of previous management
 - Herbicides result in resistant weeds
- Generate seeds prolifically
 - Delayed, opportunistic germination
 - Seeds have long viability
- Easily and rapidly disperse seeds
 - Lightweight seeds, parachutes, cannons...
 - Note: wind pollinated often cause allergies

Weeds Are Survivors 2

- Have anti-browse mechanisms
 - Prickles, milky sap, toxicity
- Propagate in multiple ways, not just seeds
- Establish populations rapidly
- Ability to thrive in disturbed sites



There are approximately 250,000 species of plants worldwide.

About 3% or 8000 species behave as weeds.

But There Are Positives

- Weeds are pioneer plants
 - Ground breaking
 - Mineral mining
 - Nitrogen fixing
 - Erosion reducing
 - Compaction reducing
- Useful
 - Dyes, medicines, insect repellent, food (for insects, man, and birds), attract beneficials



You Know the Ones You See

- Weeds are local to soil type, climate
 - I don't "know" some of the weeds I'm presenting
 - They're not my weeds



Seed Bank Concept

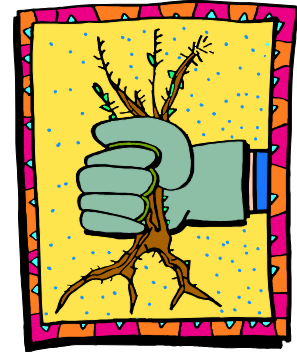
- Bank contains
 - Historical seeds
 - Plus new seeds from this year
- Objective: almost empty bank
 - Reduce the number of historical seeds
 - Keep new seeds from germinating



It's about
Management **not** Eradication

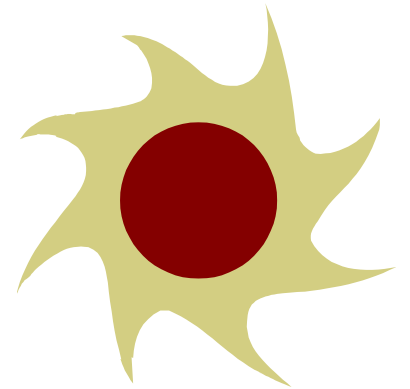
Before Managing You Need to Know:

- Weed ID
- Worth effort to manage?
- Annual or perennial
- How weed propagates
- What environment it prefers
- Best stage for management intervention



Germination Requirements

1. Moisture (irrigation, rain, snow)
2. Light
3. Oxygen
4. Right temperature
 - ❑ Cold (winter weeds) or warm (spring/summer)



Suggests management strategies

- ❑ Remove moisture/light to prevent germination
 - ❑ Change the environment
-

General Management Strategies

■ Before germination (pre-emergent)

- ❑ Avoid disturbing the soil
- ❑ Use mulch or ground covers
- ❑ Shade out with nearby plants
- ❑ Remove water



■ After germination (post-emergent)

- ❑ Keep the population down
- ❑ **Treat when small - learn to recognize this stage**
- ❑ Hand pull when soil is moist e.g. after a rain

Annual Weeds

Objective:

Keep them from setting seed.

Management Strategies - Annuals

- Before germination
 - Mulch, shade out with plants, use fibrous weed block material
 - Solarize with clear plastic
 - Pre-emergent herbicides (weed specific, if used)
 - Note: reseeding of desirable plants won't occur in the area treated.
- After germination, before setting seed
 - Hand pull
 - Mow or cut down
 - Torch
 - Watch out for weeds that like fire
 - Post-emergent herbicides
 - Beware broadleaf plant killers especially weed-n-feed fertilizers



Solarize



1. Wet the soil
Let seeds germinate
2. Wet soil again after germination
3. Cover the area with clear medium mil plastic
4. Use bricks to hold down edges
5. Keep in place for 2-3 months during hottest part of summer

Kills weed seeds/weeds in top 3-4 inches of soil, not deeply rooted weeds like field bindweed.

Advantages/Disadvantages Solarization

Advantages

- Fast for small areas
- Minimal cost
- No chemicals

Disadvantages

- Hard to use with acres of land
 - Sterilizes soil – removes “life”
 - Doesn't kill deep rooted weeds
-

Gallery of Weeds

Annuals

- Black medic
- Cheat grass
- Common mallow
- Common purslane
- Crabgrass
- Goathead
- Groundsel
- Hare barley grass
- Kochia
- London rocket
- Pigweed
- Sandbur
- Spurge
- Tumbleweed



Black Medic

- Annual, biennial, short lived perennial
- Yellow flower, 3 part compound leaves slightly closed, in clover family
- Propagates from seed
- Nitrogen fixer



Cheat Grass

- Winter annual
- Germinates at low fall temperatures, roots grow during winter
- Drooping seed heads
- Dry by mid-June
- Propagates from seed
- Prolific seed producer



Common Mallow

- Winter annual or biennial, germinates Nov-April
- Heart shaped leaf, lavender striped flowers, low spreading
- Propagates from seed



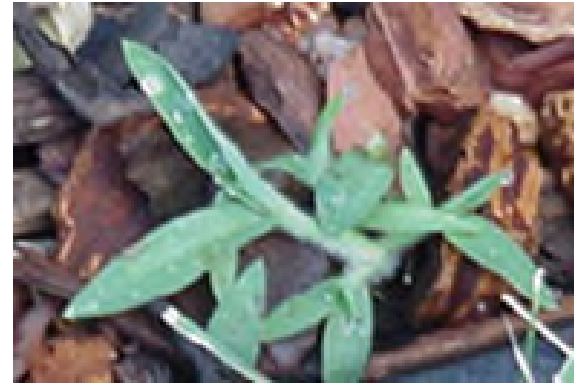
Common Purslane

- Summer annual
- Smooth reddish colored stems, succulent leaves, small yellow flowers late summer, low spreading
- Propagates from seed and stem fragments which root in **damp** soil



Crabgrass

- Summer annual
- Reddish purple stems, soft leaves, clumping grass, roots at nodes
- Propagates from seed, roots formed at joints, and root pieces
- Favors closely mown lawns and compacted areas.
- Prefers hot, dry weather



Goathead (Puncture Vine)

- Summer annual
- Mat forming, extensive root system, yellow flowers, unique seed head
- Propagates from seed which punctures shoes, pet paws, and bike tires
- Green seedhead used in Chinese medicine



Groundsel, Common

- Early season annual, biennial from a taproot
- Basal leaves, coarsely toothed, yellow disk flowers
- Propagates from seed in moist soil
- Improve drainage to manage



Hare Barley Grass

- Summer annual, 10 “
- Lighter green than blue grass, dense spikes, clumps
- Propagates from seed
- Awns, which look like foxtails form in July-Sept
- Awns can cause injury to animals



Kochia

- Summer annual, 1-6' tall
- Soft hairy leaves, soft stem
- Propagates from seed
- Grazed by livestock, but if high in nitrate levels, it's toxic
- Herbicide resistant



London Rocket (Mustard)

- Winter annual, especially after wet fall
- Small yellow flowers in spring, deeply lobed leaves
- Propagates from seed
- Alternate host for beet leaf hopper (curly top virus spreader)
- Edible form is arugula



Pigweed

- Summer annual, 2-4'
- Red stem, stalked leaves, prominent veins
- Propagates from seed
- Amaranth family



Sandbur

- Warm season annual grass
- Burs on grass spikes form July to September
- Propagates from seed
- Burs catch on clothes, pet fur and paws



Spurge (Euphorbia)

- Summer annual
- Prostrate mat forming, milky stems, purple mark on leaf
- Propagates from seed
- Prefers moist locations



Tumbleweed or Russian Thistle

- In spring or summer, after rain
- Propagates by seed (250,000), dropped from dried, tumbling body of plant
- Spiny bracts, purple stripes in stem, bites if hand pulled in later stages



Perennial Weeds

Objective:

Keep from setting seed AND

get all the stem/root pieces

Management Strategies - Perennials

- Before germination (pre-emergent)
 - Mulch, shade out with plants, fibrous weed block material
 - Solarize with clear plastic (not as effective with deep rooted ones)
 - Pre-emergent herbicides (weed specific, if used)
 - Note: reseeding of desirable plants won't occur in the area treated.
- After germination (post-emergent)
 - Hand pull or cultivate
 - Beware if they propagate from rhizomes, nutlets, or root pieces. **YOU MUST GET ALL OF THE ROOT PARTS.**
 - Hoeing creates more plants from root parts.
 - Mow or cut down to keep from seeding
 - Torch
 - Watch out for weeds that need fire to germinate (e.g. fireweed)
 - Post-emergent herbicides (**many kill broadleaf plants**)
 - Beneficial mites or other biologics

Perennials

- Bermudagrass
- Curly dock
- Dandelion
- Field bindweed
- Johnsongrass
- Nutsedge
- Silverleaf nightshade
- Wood sorrel (oxalis)



Bermudagrass

- Warm season grass, fairly drought tolerant
- Spreading branching stolons that root at the node
- Propagates from seed, rhizome, and stolon
- Difficult to eradicate



Curly Dock

- Spring tap-rooted perennial
- Elongated basal leaves have curly edges, reddish spots
- Propagates from seed, and pieces of crown and taproot
- Flowers attractive for dried arrangements, leaves edible



Dandelion

- Tap-rooted upright perennial
- Yellow aster-like flower Mar-Nov, fluffy seed head, lobed leaves in rosette, milky substance when cut
- Propagates from seed, sprouting root crowns, and pieces of taproot
- Special tools to remove all of root



Field Bindweed

- Spreading with extensive, deep root system
- Shovel-like leaves, sharp pointed lobes, white funnel shaped flowers
- Propagates from seed and rhizomes
- Likes clay and loam soils
- Bindweed mite works!



Johnsongrass

- Tough, spreading upright roadside grass
- Coarse leafy appearance, segmented fleshy roots
- Propagates from seed and rhizomes
- Rototilling roots causes more plants



Nutsedge, Yellow

- Upright
- Triangular stem (sedge), 3 green leaves, flowering stem
- Propagates from seed, rhizomes, and nutlets
- Lives in **moist** conditions but tolerates drought
- Get the nutlet!!



Silverleaf Nightshade

- Short lived upright perennial
- Wavy edged silver leaves, hairy stem, toxic alkaloids, blue flower, yellow berry
- Propagates from seed



Wood Sorrel (Oxalis)

- Shamrock-like foliage, bright yellow flowers.
- Propagates through seeds and by stems that root where the joints touch ground. Tap rooted.
- Seed pod holds from 10 to 5,000 seeds
- Seeds are expelled forcefully away from mother
- Use a non-selective herbicide in flower beds

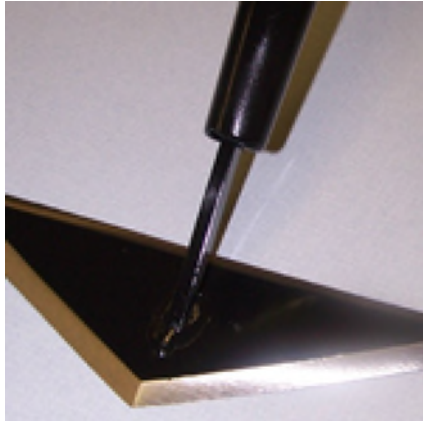


Presence Can Identify Soil Conditions

- Moist soil
 - Spurge
 - Purslane
- Dry soil
 - Kochia
 - Tumbleweed
- Management Strategy
 - Change the environment



Weeding Tools



Weeder Issues

- Scuffle hoe disturbs soil, increases weed germination, fast
- Hori-hori knife good for deep rooted weeds and grasses, slow
- Circle hoe good for under shrubs, less soil disturbance, slow
- Ho-Mi and Yankee weeder good for weeds in cracks
- Torch isn't good for fire-resistant seeds



Herbicides

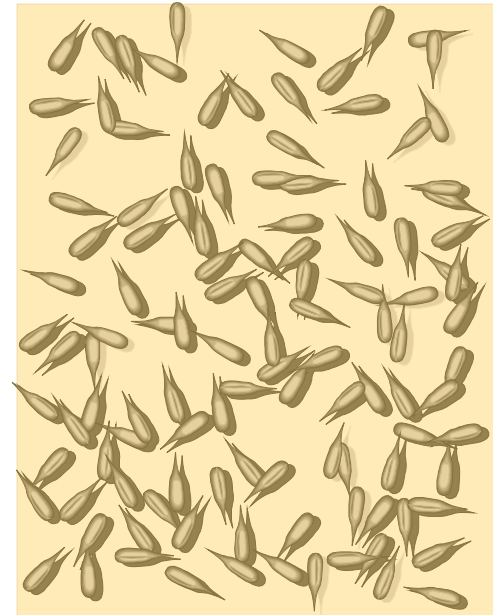
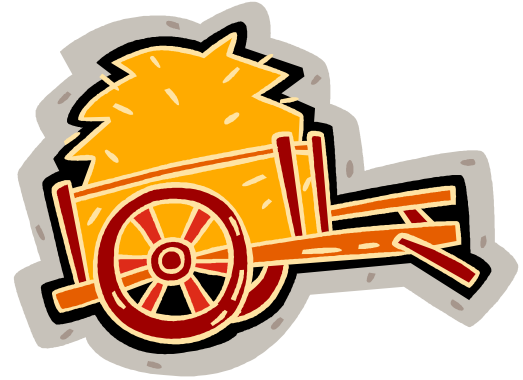
- Pre-emergent
 - Corn gluten
- Post-emergent



- Selective
 - Grass killers
 - Broadleaf plant killers (2-4D)
- Non-selective
 - Glyphosate

Preventing Weeds

- Wash equipment after use
- Use weed free inputs
 - Hay, straw
 - Gravel
 - Fill, top soil, and compost
 - Seed mix
- **Mulch or ground cover**
- **Healthy plants to shade out**



Sources

- Joran Viers, Bernalillo County Horticulture Agent for photos and review
 - Websites
 - Colorado State coopext.colostate.edu (search for weeds)
 - UC Davis ipm.ucdavis.edu
 - NMSU weeds.nmsu.edu
 - Books
 - Weeds of the West
 - Sunset Western Garden Problem Solver
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The End
