



Weeds

Proper identification is key to effective management

- Grass
- Broadleaf
- Annual
- Winter Annual
- Biennial
- Perennial





Weed Management

Pre-plant weed control is the cornerstone of a successful weed management program

- Should begin 1-3 years pre-planting
- Site selection
- Soil amendments
- Cover Crops
- Crop Rotation



Soil Amendments

- Animal Manures
 - Often contain weed seed
- Compost
 - May contain weed seed
 - Should be "finished"
 - Hot enough to destroy seeds
 - Cover piles to prevent weed seed contamination







Cover crops

- Improve soil structure
- Reduce weed pressure?
 - Shade out some species
 - Use allelopathic species
 - Inhibit weed seed growth
 - Sorghum/Sudan grass





Cover Crop Options

- Summer
 - Grasses, legumes, buckwheat,
 - Cash crops (pumpkins, corn, greens)
- Winter
 - Rye, Mustards









Fallowing

- Repeated tillage throughout growing season
 - Deplete annual weed seed bank
 - Deplete perennial plant reserves
- Problems
 - Energy intensive
 - Soil structure
 - Erosion





Planting Year

Delayed Planting/Stale Seedbed

- Plant in mid-late June
 - Prepare ground in fall or early spring
 - Allow weed seeds to germinate 2-4 wks
 - Spray or flame or lightly till,
 - Disturb soil as little as possible
- Advantages:
 - weed control, labor distribution
- Disadvantages:
 - Plant quality, availability, irrigation





Tarping

- Prepare ground in fall or early spring
- Place plastic tarps over soil surface
 - Kills germinating weeds
- Remove tarps late spring



- Prevents new weed seeds from surfacing
- Slows new weeds by days-weeks



Weeds

Management strategies

Strip Tillage

- Prepare ground in early fall, seed cover crop
 - Winter rye, annual rye, oats
- Kill cover crop in spring (oats winter-kill)
- Till narrow (8-16") strips through dead cover
 - Requires specialized equipment
- Plant crop into strips
- Dead vegetation inhibits weed growth

Weeds



Management Strategies

Cultivation

- Tines, blades, etc.
- Disturb weed roots
- Best when weeds very small
- Disturb soil as little as possible

Some hand weeding will be needed





Cultivation

"Finger" Cultivators



Buddingh



Regi

Chemical Options

Herbicides

- Pre-Emergent
- Post-Emergent
- Must know your weeds
- Costly
- Won't control all weeds
- May injure crop plants
- Requires specialized equipment
- Follow all label directions and precautions



Pre-Planting

Herbicides

- Glyphosate
 - Apply fall prior to planting
- Goal 2XL (oxyflourfen, 1-2 pt)
 - Must apply 30 days prior to planting
 - Must be tilled 2.5" before planting
- Aim EC (carfentrazone, 2 oz)
 - Burndown, allow 24 hours before planting
 - May be tank mixed with other herbicides

Pre-Planting

Herbicides

- Prowl H₂O (pendimethalin, 1.5-3 pt)
 - Irrigate in at least one day before planting
 - Good on annual grasses, some broadleaves
 - Don't use if plastic mulch is to be applied



Planting Year Herbicides

Transplanting

- Spartan 4F (sulfentrazone, 4-8 oz)
 - Apply prior to or just after planting but before new growth appears.
 - Broadleaf weeds, field pansy, groundsel, nutsedge
- Sinbar (terbacil)
 - Light rate (2 oz) prior to leaf emergence or wash off
 - May cause Injury



Planting Year Herbicides

Summer

Pre-emergent

- Devrinol (napropamide, 2-4 lb)
 - After plants established, water in
 - Late summer control of winter annuals, grasses
- Sinbar (terbacil, 2-4 oz)
 - Late summer for winter annuals



Planting Year Herbicides

Summer

Post-emergent - Grasses

- Poast (sethoxydim, 1-2 pt)
 - Must add crop oil
 - Don't use when hot
- Select (clethodim, 6-8 oz)
 - Must add crop oil
 - Repeat application for perennial grasses



Fall-Dormant Herbicides

Dormancy

- Post-Emergent
- Formula 40 (2, 4-D; 2-3 pt)
 - Apply after strawberries dormant
 - Control of broadleaves, winter annuals



Fall-Dormant Herbicides

Dormancy

- Devrinol (napropamide, 4-8 lb)
 - Annual grasses, volunteer grains
- Sinbar (terbacil, 2-8 oz)
 - Do not apply more than 6-8 oz/year



Fall-Dormant Herbicides

Dormancy

- Satellite Hydrocap (pendimethalin, 1.5-3 pt)
 - Annual grasses, purslane
- Chateau (flumioxazin, 3 oz)
 - Good on shepherds purse, chickweed, dandelion
 - Some pre-emergent control



Dormant Mulching

Mulch straw can be a weed bank

- Use clean straw (not hay)
 - Know your source

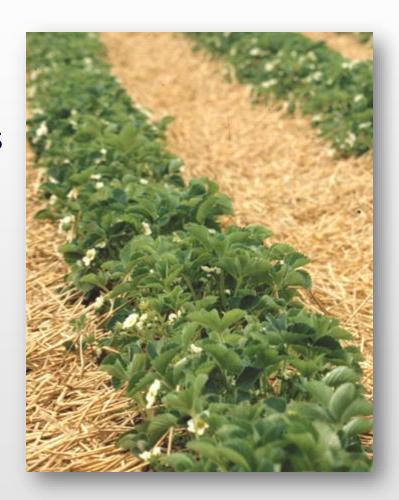




Spring Herbicides

Established Beds

- Remove mulch late March-April
 - place under & around plants
 - Provides control of some annual weeds
 - Supplement mulch to get good coverage
- Don't over-fertilize
 - 10-20 lbs N/A maximum



Spring Herbicides

Established Beds

- Pre-emergent if not applied in fall...
- Devrinol (napropamide, 4-8 lb)
 - Must be watered in
- Sinbar (terbacil, 2-4 oz)
 - Water to rinse off foliage



Post-Emergent

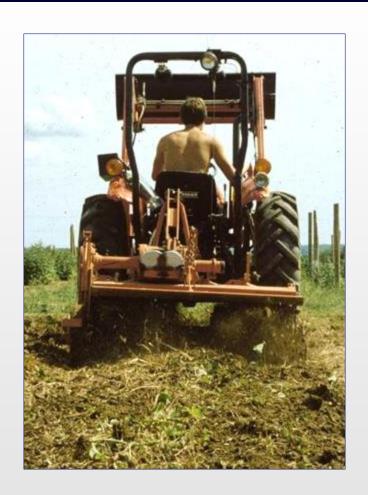
- Formula 40 (2,4-D; 2-3 pt)
 - Annual, perennial broadleaves
 - Apply 3-5 days before mowing



Renovation

Tillage

- Mow leaves above crowns
 - Remove weed seed heads
- Till to narrow rows
 - Kill weeds between rows
- BUT disturbing soil= û weed seeds



Renovation

"No-Tilling" Approach

- Reduce weed pressure
- Mow & fertilize as usual
- No tilling to narrow row
 - Apply contact herbicide or flame to narrow rows
- Plant cover crop?





Pre-Emergent

- Sinbar (terbacil, 2-6 oz)
 - Many broadleaves and annual grasses
 - Some post-emergent control
 - Water in
 - 8 oz maximum per season
 - Split applications (fall) common
 - Over application will cause injury



Pre-Emergent

- Satellite Hydrocap (pendimethalin, 1.5-3 pt)
 - Annual grasses and some broadleaves
 - Purslane
 - Water in
 - 6 pt maximum per season



Pre-Emergent / Some Post-Emergent

- Spur (clopyralid, 2/3 pt)
 - Many broadleaves and annual grasses
 - Clover, dandelion, thistle
 - Some post-emergent control
 - Use minimum 10 gals water
 - 1 application per year
 - Do not tank mix
 - Perennial plantings only



Post Renovation

Herbicides - Between Rows

Pre-emergent

- Chateau (flumioxazin)
- Prowl H₂O (pendimethalin)

Post-Emergent

- Gramoxone (paraquat)
- Scythe (pelargonic acid)
- Aim (carfentrazone)



Weed Management Resources

