Cropping Practices that Influence Weed Management

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Two goals:

1. Don't let weeds emerge.
2. Don't let escaped weeds produce seeds.
Crop Rotation

Changing crop sequences to create an unstable and inhospitable environment for weed establishment and survival –

resource availability
allelopathic effects
soil disturbance
soil fertility
mechanical damage

X time
Grass crop

- Easy to cultivate
- Fibrous roots
- Competitive cultivar
- Fast seedling growth
- Dense canopy

Legume

vegetable

Small grain

Cover crop
Grass crop

Vegetable

Legume

Mustard

Forage

Small grain

Cover crop

Smother seedlings

Allelopathy

Mixed root structure
Crop Rotation Impacts:

UNSTABLE CONDITIONS

Crop type – canopy shape, shading etc

Chemical environment –
  fertility, allelopathy

Physical environment –
  temperature, light, moisture

Timing of all field operations –
  planting, tillage, cultivation, harvest etc.
Crop Competition

~ 50% of weed control

variety selection

resources – fertility, water

row spacing, seeding rate

soil management
Allelopathy
Cover Crops – physical & chemical suppression

Rye

Hairy vetch

Grass-legume
Cover Crops -
- killed, mowed
- incorporated
- surface residue

Buckwheat

Mustard

Crimson clover
Smother Crops

Sorghum-sudangrass

Red clover

Winter-pea

Oats
Mustard smother crops

Corn

Soybean
Prevent weed emergence:
  physical suppression
  shade
  allelopathy

Prevent weed seed production:
  shade
Prevent weed emergence:
cover & smother crops
crop competition

Prevent weed seed production:
crop competition