

The background of the slide features a large, faint watermark of the Rutgers University seal, which is a circular emblem with a sunburst design and the text 'RUTGERS UNIVERSITY' around the perimeter.

RUTGERS

New Jersey Agricultural
Experiment Station

Organic Weed and Pest Management

Amy Rowe

Environmental and Resource Management Agent

Rutgers Cooperative Extension of Essex/Passaic Counties

rowe@njaes.rutgers.edu

973-287-6360

What is a weed?



- A plant that you don't want in your landscape
- Competing with the plants you DO want
- Indicative of soil problems
- Opportunists
- Weeds vs. invasives

Offense is the best defense



- Healthy soil
- Healthy plants
- Right plant, right place

AVOID



- Compacted soils
- Overtillage
- Overwatering
- Excessive or poorly-timed nitrogen applications

Timing is everything



tywkiwdbi.blogspot.com



foxhavenjournal.com

- Observe weed populations
- Monitor seedling emergence after disturbance
- Life cycle control



[flickr.com](https://www.flickr.com/photos/14911472@N00/10244444444/)

- Smart plant selection
- Proper soil amendments
- Improve soil aeration
- Correct watering techniques



[deere.com](https://www.deere.com/)



flameengineering.com



creepypasta.wikia.com

- Nozzle that connects to a propane tank
- More effective at controlling weeds than many organic herbicides with 80% control 21 days after treatment (Chase, et al., 2004)

DOWNSIDE

- DANGEROUS
- Fire is not selective



terriermandotcom.blogspot.com

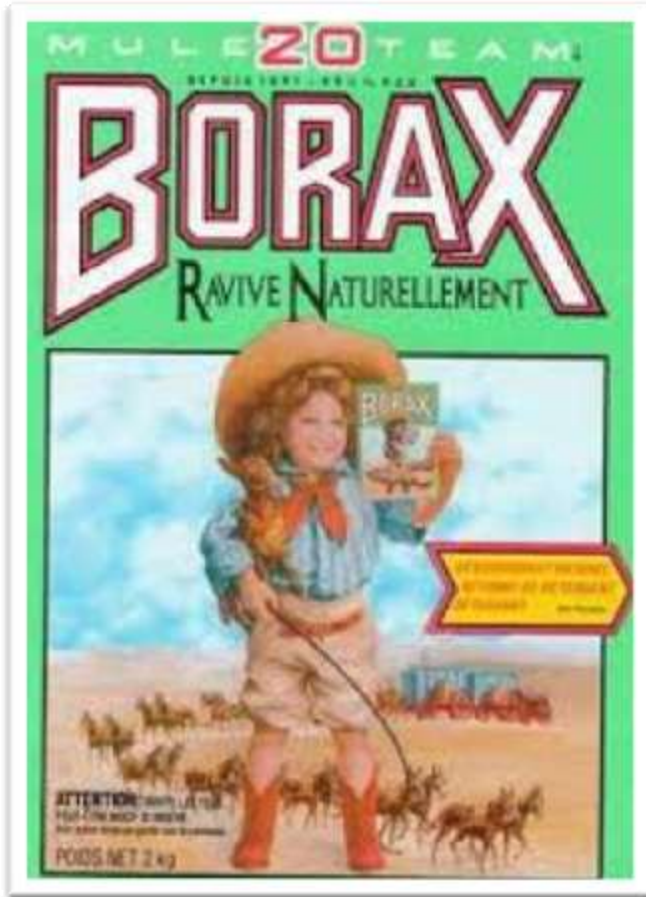
- Get as much of the root as possible – tools can help
- Regular pulling prevents the weed from developing long root systems
- Satisfying?!?



kimmisgarden.blogspot.com

DOWNSIDE

- Time-intensive
- Hard on the body



sodahead.com

- Garlic oil, clove oil, vinegar, borax, salt
- Effective at killing young plants
- Much less toxic than other herbicides
- Cheap

DOWNSIDE

- Won't kill roots of established plants
- Not selective



gardeningktsa.com

- Plastic (non-PVC) sheeting over ground
- Put on ground during hot part of the year for several weeks
- Thinner plastic is best

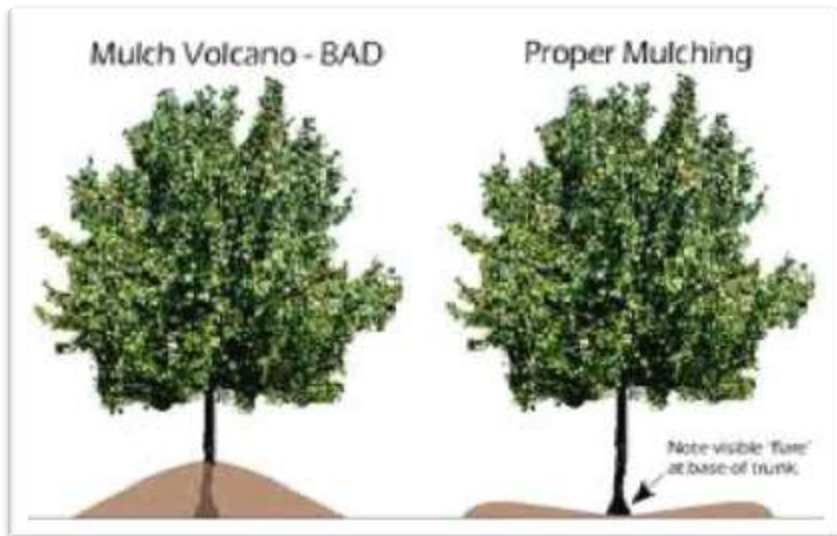
DOWNSIDE

- Works best during growing season
- Not selective



stmarylancaster.com

- Wood chips, bark, pine needles, compost
- Proper application is important
- Weed barrier is prohibited



mtcandl.com

DOWNSIDE

- Can tie up nitrogen after application
- Improper application can lead to problems



21food.com



safelawns.org

- Preemergence
- Provides nitrogen
- One application per year
- Very safe

DOWNSIDE

- Expensive
- May take reapplication for several years



saferbrand.com



planetnatural.com

- Potassium salts of fatty acids (Safer)
- Pelargonic acid (Scythe)





bhg.com

- Iron HEDTA (Ortho Elementals Lawn Weed Killer)
- Citrus oil and citric acids (Ground Force Organic Herbicide)



Extension.umn.edu



The background of the slide features a large, semi-transparent watermark of the Rutgers University seal. The seal is circular and contains the text "RUTGERS UNIVERSITY" around the perimeter and "THE STATE UNIVERSITY OF NEW JERSEY" in the center. The seal is rendered in a light red color, matching the background.

RUTGERS

New Jersey Agricultural
Experiment Station

Pest Management



message.snopes.com

- Pest management plan that includes monitoring
- Life cycle timing
- Seek the most specific control for the target pest
- Habitat modification
- Pesticide applicator license is required for commercial application of materials for pest management

Offense is the best defense



- Healthy soil
- Healthy plants
- Right plant, right place



- Observe pest populations
- Monitor conditions during outbreaks
- Life cycle control



Clemson.edu



- Smart plant selection
- Careful inspection of purchased plants
- Avoid monocultures
- Improve habitat of beneficial insects
- Habitat modification
- Proper disposal of infested plants
- Maintain cleanliness
- Handpicking/hosing



Arbordoctor.net



Learn2grow.com

- Pheromones
- Attractive structures
- Baits
- Sticky cards/paste

DOWNSIDE

- Can attract more pests to the area
- Won't control large infestations

Adding predatory insects



fcps.edu



myrmecos.net



pbase.com

- Lacewings
- Ladybugs
- Praying mantis
- Minute pirate bug and big-eyed bug
- Parasitic wasps

DOWNSIDE

- May fly away
- Susceptible to insecticides



soutlandorganics.com



biconet.com

- Small worms in the soil that eat insects
- Reproduction = longer lasting results
- Tolerance of insecticides

DOWNSIDE

- Activity is weather dependent
- Only eats pests with some part of life cycle in soil



[Lowes.com](https://www.lowes.com)

- Milky Spore – bacterial pathogen
- Beetles seem to be building resistance





- Spinosad – bacteria
- Caterpillars, borers, ants,

thegardenerseden.com

OMRI™
L i s t e d
Organic Materials Review Institute

OMRI
L I S T E D
For Organic Use



sunshinehopa

sunshinegardensfl.com

- Bacillus thuringiensis - Bt
- Caterpillars, mosquitoes
- Generally not as toxic to beneficials
- Mosquito dunks

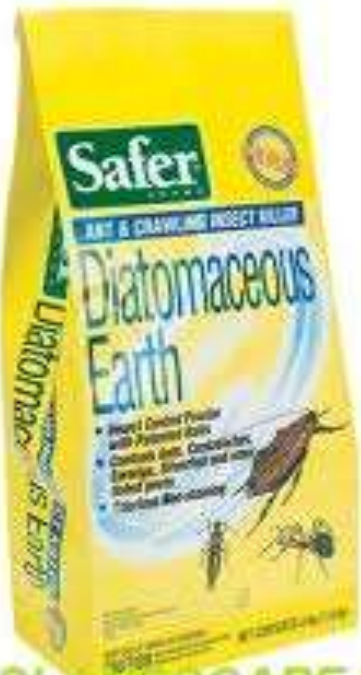




[Amazon.com](https://www.amazon.com)

- Neem – extract from tree
- Mites, aphids, whiteflies
- Also controls some fungal diseases
- Toxic to aquatic organisms





MATTSLANDSCAPE.COM

mattslandscape.com

- Diatomaceous earth
- Ants, earwigs, cockroaches, silverfish, crickets, fleas, millipedes, centipedes
- Be careful to avoid inhalation





[amazon.com](https://www.amazon.com)

- Pyrethrum – from a chrysanthemum species
- Fire ants, box elder bugs, squash bugs, sawfly larva
- Breaks down quickly in the environment
- Toxic to beneficials



Offense is the best defense



outsidepride.com

- Healthy soil
- Healthy plants
- Right plant, right place
- Patience!

Amy Rowe

Rutgers Cooperative Extension of Essex/Passaic Counties

rowe@njaes.rutgers.edu

(973)287-6360

