
Understanding Pesticides



Pesticides are an Integral Part of our World

Pesticides...

- ...keep harmful insects and pests out of homes and businesses
- ...remove weeds from yards, gardens
- ...prevent diseases from infecting household plants and gardens
- ...are found in household cleaning agents



85% of all U.S. households have at least one pesticide in use at their home.



Why Do Farmers Need Crop Protection Tools?



Crop protection tools are vital for an abundant and reliable food supply. Without crop protection tools such as pesticides, up to 40% of the world's food production would be lost to insects, weeds and plant disease.



Pesticides Play a Key Role in Crop Protection

Farmers use pesticides along with other tools to protect their crops and preserve their fields

- Safely
- Precisely
- Responsibly



**Right Place, Right Time,
Right Instruction, Right Amount**



Types of Pesticides Used in Agriculture

Herbicides – Protect crops against weed competition

Insecticides – Reduce crop losses from insect feedings

Fungicides – Promote healthy plants and keep them free of diseases

Pesticides can be organic or synthetic



Give it a Minute: How Do Farmers Use Pesticides?



https://www.youtube.com/watch?v=u58pfCru73E&index=3&list=PLpdE5MN_yg6gTyZuagDpA41qDplH3b08D



Herbicides Eliminate Weeds That Compete With a Crop for Light, Moisture and Nutrients



Weeds can reduce a crop by as much as 50%



Glyphosate is the Most Thoroughly Evaluated Herbicide in the World

- Works by stopping an enzyme that exists in plants – not humans or animals
- Approved by regulatory agencies in over 160 countries globally
- Is categorized in U.S. EPA's most favorable category (IV) for acute toxicity
- Breaks down in the soil into naturally occurring elements such as carbon dioxide and phosphate



Give it a Minute: Glyphosate



<https://www.youtube.com/watch?v=bS4iVa3SaIY>



Precision is An Important Part of Insecticide Use

Farmers have many choices to manage insects and may use one or a combination of tools depending on the insect, crop and other factors.

- Sprays
- GMOs
- Seed Treatments
- Crop Rotation
- And more



**Corn
Rootworm
Damage**



**Corn Earworm
Damage &
Secondary
Disease**

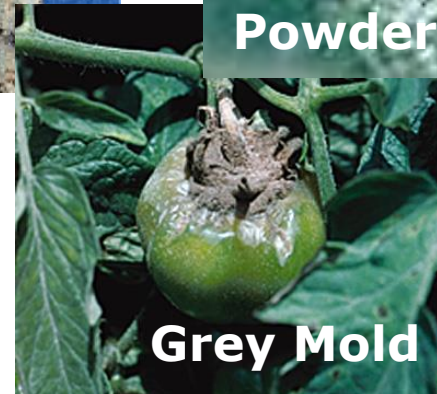


**European Corn
Borer Damage**

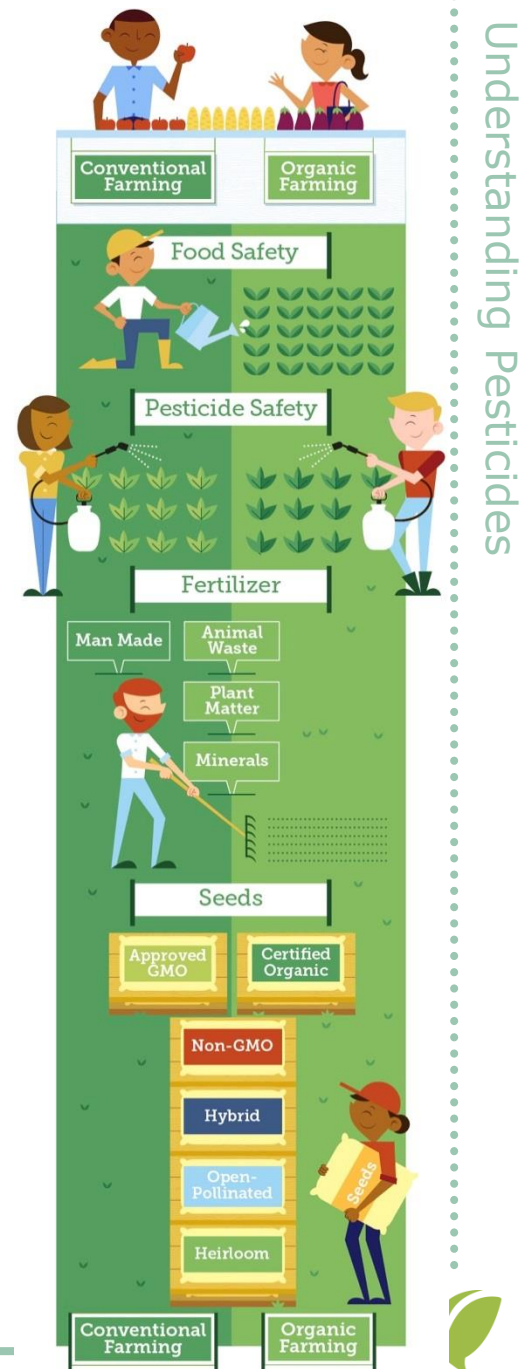
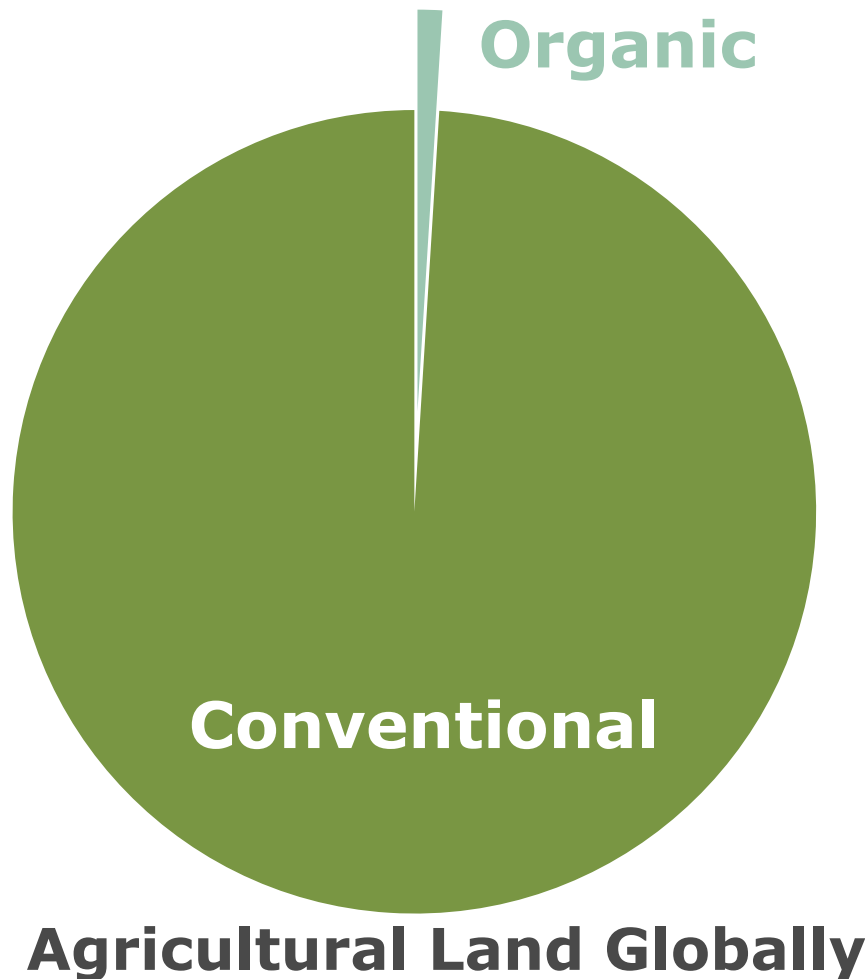


Plant Diseases Caused By Fungi May be Controlled Using A Fungicide

Fungicides vary
depending on the
disease
compromising the
plant and timing
of infection



Organic & Conventional Farming



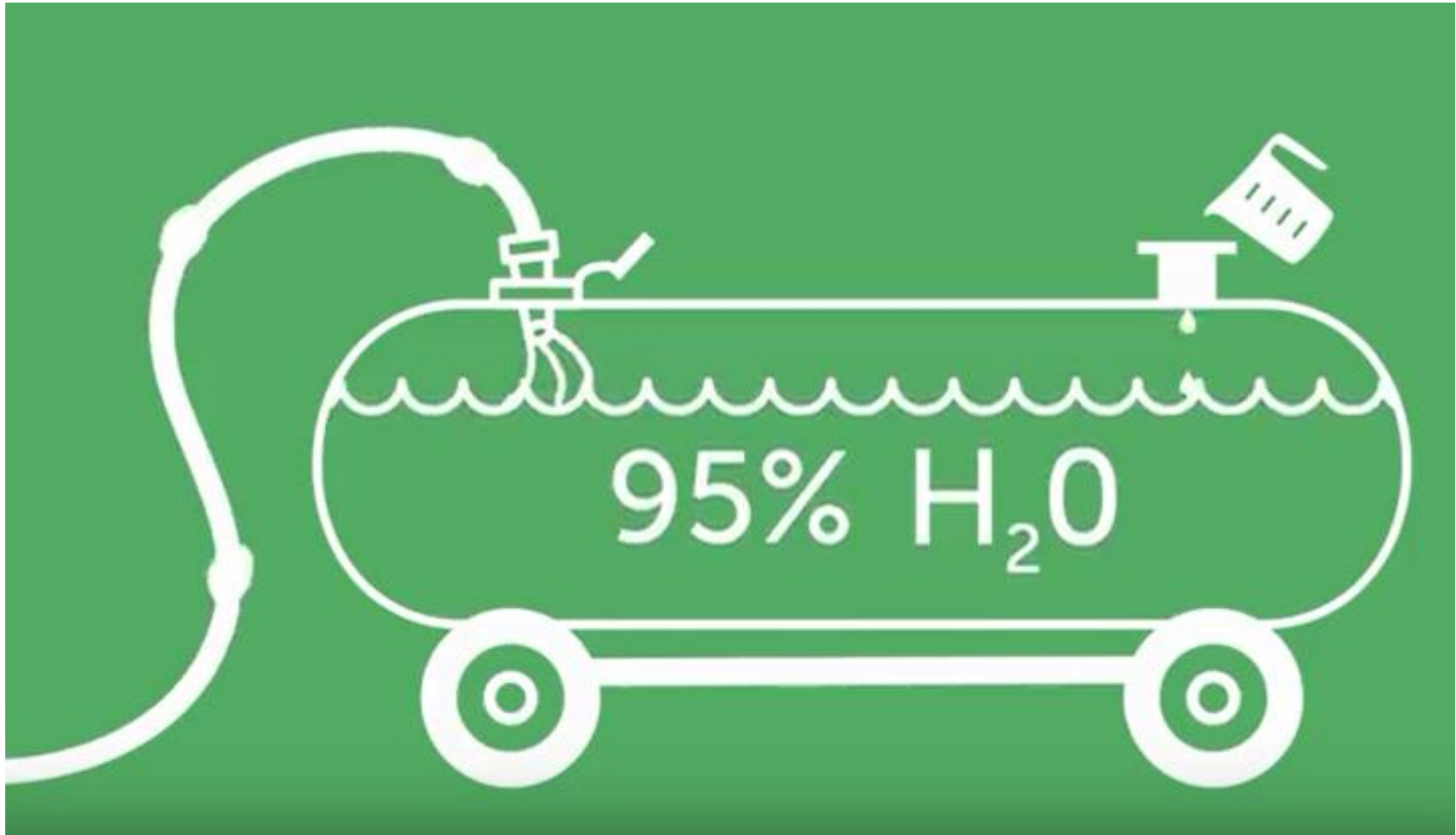
Give it a Minute: Organic and Conventional Farming



<https://www.youtube.com/watch?v=ndxLkWhQBbE>



What is in a Tank?



Pesticide Safety



What pesticides can be detected on which foods and at what levels?



Are the detectable residues approved for use in the U.S.?



Are the allowed uses safe for human health and the environment? Are detectable residues below levels that would raise a safety concern?

Farmers receive training and certification as required by their state



Assessing Pesticide Safety



Everything, including water, can be hazardous at some level.

It is the exposure (dose) that matters



Precision Plays an Important Role When Applying Pesticides



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