



Applied Pest Controls for Organic and Certified Naturally Grown Agriculture Production

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Offered by:

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DoAg Demonstration Farm

- For over 8 years the Guam Department of Agriculture: Agriculture Development Services (ADS) has run a demonstration farm managed under organic practices in Mangilao.
- This farm has grown many fruits and vegetables successfully
 - Each May we hold a field day with lunch and open the farm to the public.
- Over the years we have encountered many pest problems and have work with many control options.
- Today we will discuss some of these controls with an applied focus

Weed Control

- For weed control a whole range of practices have been utilized on the farm.
- Mulching (especially with shredded paper) has been a front line method of weed suppression.
 - *This is especially important in new plantings.*
- We have also utilized cover crops, green manures and living mulches like; sun hemp, red velvet bean and sweet potato to both build the soil and fill an ecological niche so weed
- Mowing and maintenance of natural plant covers
- Use of plastic mulch
 - Note that the plastic mulch must be removed annually.

Insect Control

- Monitoring to know what insect pest and beneficial insects you have is critical.
 - We do visual inspections of our crops regularly and we utilize sticky traps (yellow cups covered with sticky glue)
- When a pest is found, we do not always apply a control. In small numbers it is better to just let the natural systems control the pest, only when we see a large outbreak do we apply a control.
- As part of the visual inspect, on a small scale we will simply apply the mechanical control of crushing the pest as we find them.
- Another mechanical control we often use is floating row covers to protect crops from insects that can transmit diseases.
 - These are used both in the nursery to protect seedlings and in the field with crops like watermelon.

Insect Control continued

- For soft bodied insects (aphids & mealy bugs) we utilize insecticidal soaps like Safer soap and horticultural oils.
 - Soap/Oil Spray
<https://oklahoman.com/article/2388013/soap-sprays-help-control-many-plant-pests>
- For certain Lepidoptera and other pests we will use a bacterial control *Bacillus thuringiensis* (Dipel).
- Less frequently we will use Neam oil spray which is a more broad spectrum spray (it can kill your beneficial insects)
- Of course we start the crop right by selecting the best adapted variety for our island. These well adapted plants are better able to resist pests

Disease Control

- Disease control starts with selecting appropriate variety for disease resistance.
- We utilize windbreaks on our farm to minimize physical damage (which provides entry point to diseases) to our plants, by winds.
- We also try to maintain open air flow throughout our production areas by not planting plants too close.
- We practice crop rotations to reduce the buildup of disease associated with a particular plant family.
- We utilize mulch to prevent rain water splashing soil particles carrying disease onto the plants.
- We also maintain crop sanitation by composting crop residues.