

The Impact of Climatic Change on Pests and Pesticide use.

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THE CLIMATIC FACTORS OF CONCERN

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- **TEMPERATURE**
- **FLOOD AND DROUGHT**
- **AIR CURRENT**

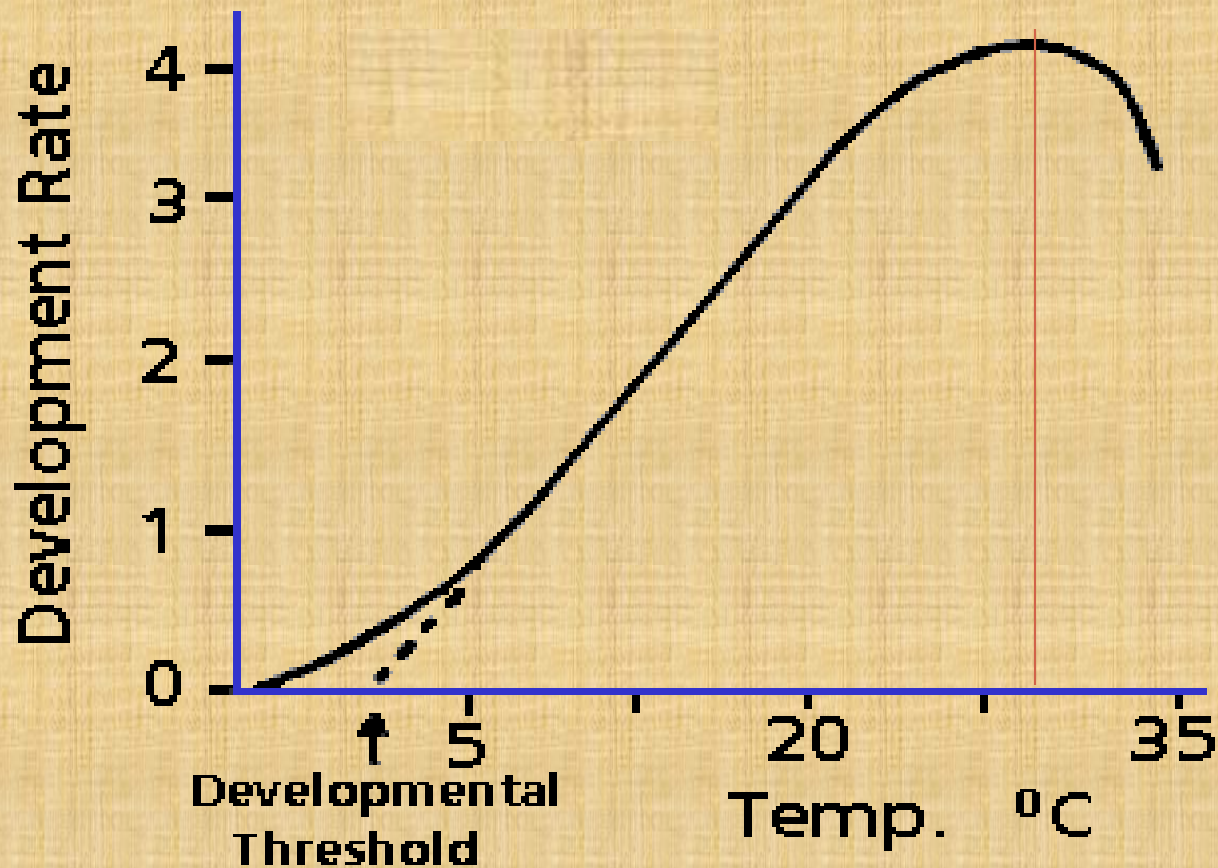
Temperature and pests

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- Increase in temperature may increase the number of insect generations possible each year
- Insect pest will generally become more abundant with increase temperature

Temperature and pests

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Flood and Drought

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- Extreme weather conditions usually triggers insect outbreaks
- Drought usually changes the physiology of host species, leading to changes in the insects that feed on them
- Drought may also reduce populations of friendly/beneficial insects
- Water stress diminishes plant vigor and alters C/N lowering plant resistance to pests

Air Current

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- Air currents affect the dispersion of:
 - Flying insects
 - Plant seeds
 - Spores of fungi

The Response

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- The likely response may be an increase in pesticide use
- The more appropriate response would be a shift towards climate smart pest management

Effect on pesticide use

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- The higher the temperature the less effective the pesticide
- The intensity and timing of rainfall influence pesticide persistence and efficiency
- Lower efficacy may result in more frequent use at higher concentrations
- Higher concentrations more frequently will increase the **pesticide load**

Environmental Backlashes

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- ✓ Residues in the environment
- ✓ Residues on food
- ✓ Bioaccumulation
- ✓ Biomagnification

Ecological Backlashes

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- ✓ Resistance
- ✓ Resurgence
- ✓ Replacement

Fate of pesticides in the environment

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Pesticides in the Environment

Movement

Volatilization

Run-off

Leaching

Degradation

Photolytic

Thermal

Hydrolytic

Microbial

THE END

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THANK YOU