

AUTOMATION IN HORTICULTURE. LET'S GO AUTOPILOT!

#LIFEWITHPLANTS

Introduction



What is mechanization?

What is automation?

Examples of automation in horticulture and plant science related fields

Career opportunities

Learning Objectives

Students will:

be able to describe different ways the horticulture and plant science related fields industry are automated

be able to identify automation practices in horticulture and plant science related fields

be able to describe advantages and disadvantages of automation in horticulture and plant science related



What is Mechanization?

"The process of putting an apparatus, operation, or system under the control or regulation of mechanical or electronic devices."—Merriam Webster



What is automation?

<u>Dictionary</u>: "The technique of making an apparatus, a process, or a system operate automatically."

International Society of Automation: "the creation and application of technology to monitor and control the production and delivery of products and services."



Operations with enhanced technologies in horticulture, including nurseries and greenhouses, can be classified into two groups:

Mechanized and Automated



Horticulture Applications

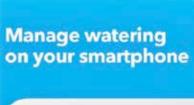
"Smart Agriculture"



Horticulture Applications

Irrigation
Greenhouses
Landscapes

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Horticulture Applications

Greenhouse Production
Product Transport



Horticulture Applications

Greenhouse Cleaning



What do you think are advantages to automation? Disadvantages?

<u>Advantages</u>

- Saves labor!
 - Plant hundreds more per hour compared to hand labor
 - Can be operated by one (or few people)
- Accuracy resulting from data driven decisions based on facts.
- Increase quality and yield
 - Example: laser 'eyes' built in
 - Select for disease
 - Uniformity

<u>Disadvantages</u>

- COST (initial investment)
- Challenges if breaks down
 - Fixing timeline
 - Costs
 - Could be hard to get manual labor to fill in

Career Examples

Greenhouse Grower



Olericulturist



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