

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 fields



Automation

What *is* Mechanization?

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



Automation

What *is* automation?

Dictionary: “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.”



Automation

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

Mechanized and Automated

What's the difference?



Automation

Horticulture Applications

“Smart Agriculture”



Automation

Horticulture Applications

Irrigation

Greenhouses

Landscapes



Automation

Horticulture Applications

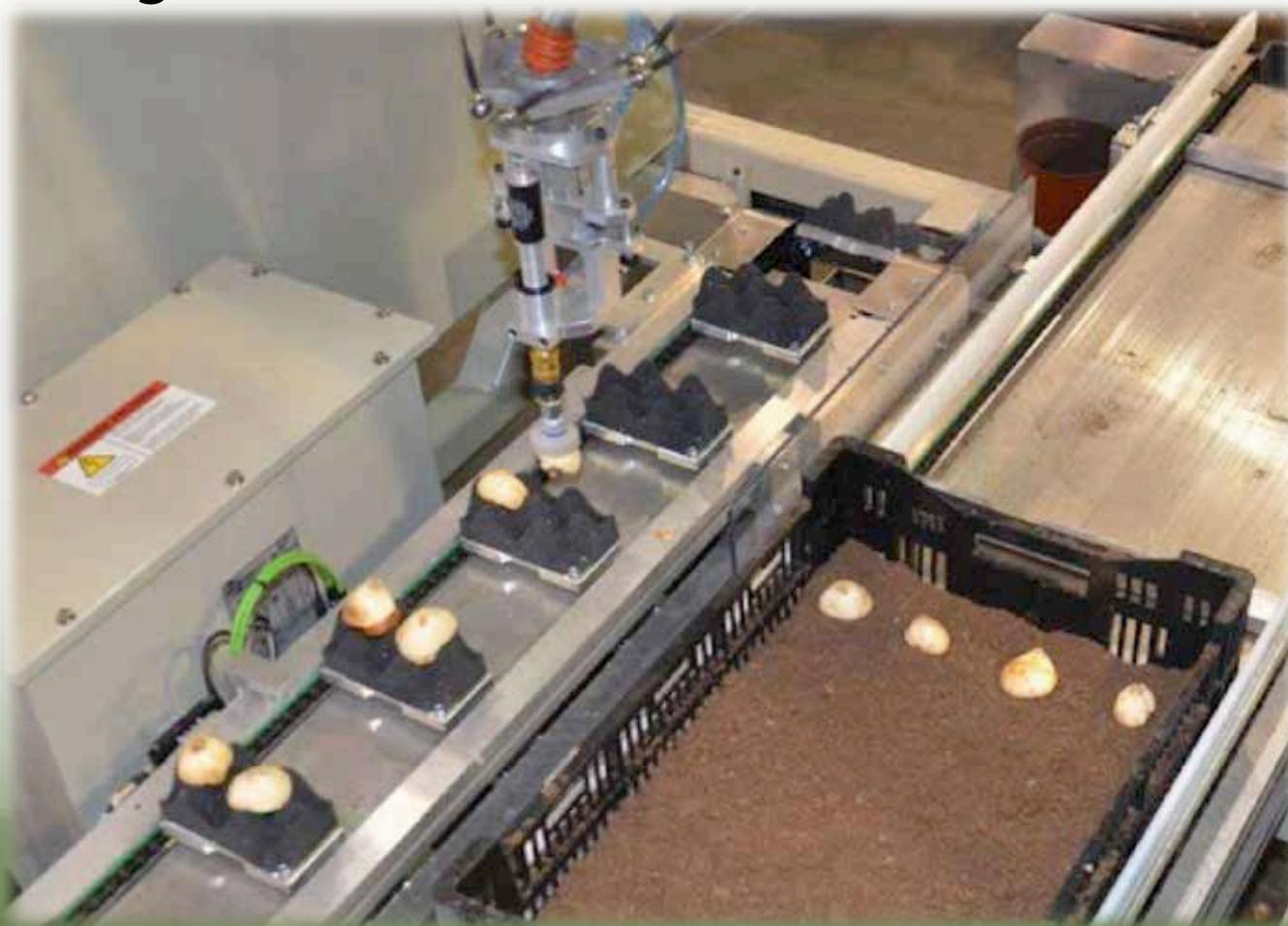
Benching Systems
Greenhouse Production



Automation

Horticulture Applications

Bulb planting robot



Automation

Horticulture Applications

Greenhouse Production
Product Transport



Automation

Horticulture Applications

Automatic Planting



Automation

Horticulture Applications

Greenhouse Cleaning



Automation

What do you think are advantages to automation? Disadvantages?

Advantages

- 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

Disadvantages

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

Automation

Career Examples

Greenhouse Grower



Olericulturist



Image Credit: Transplant Systems

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