



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

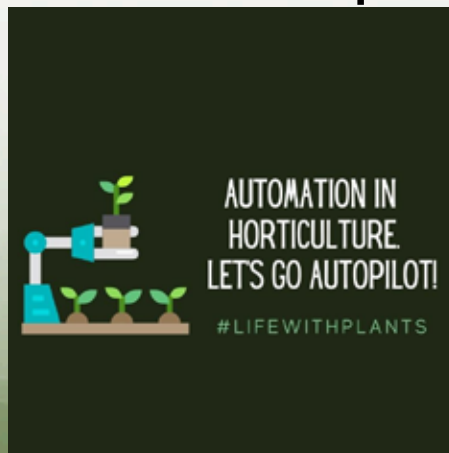
# Learning Objectives

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

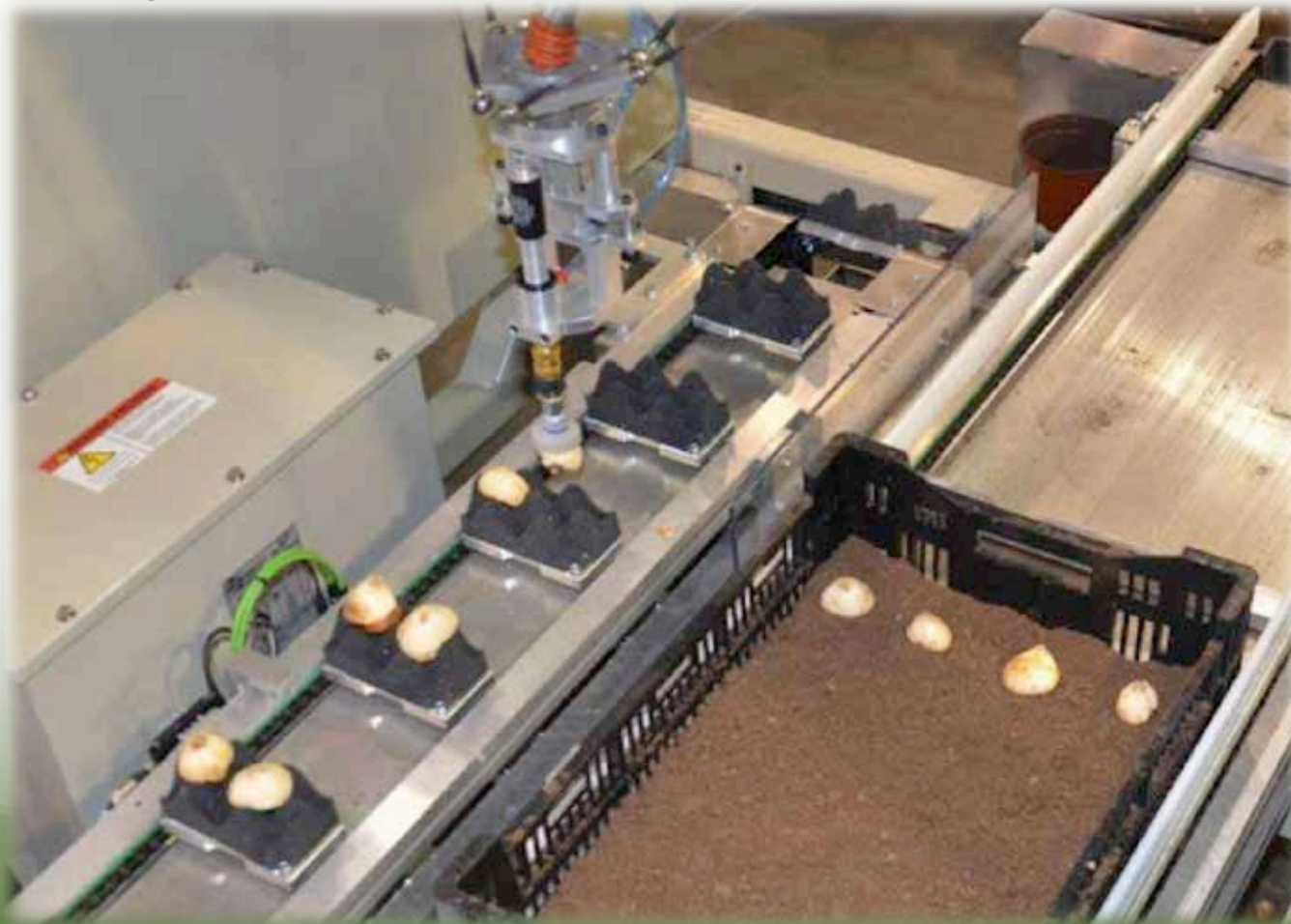
Benching Systems  
Greenhouse Production



# 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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