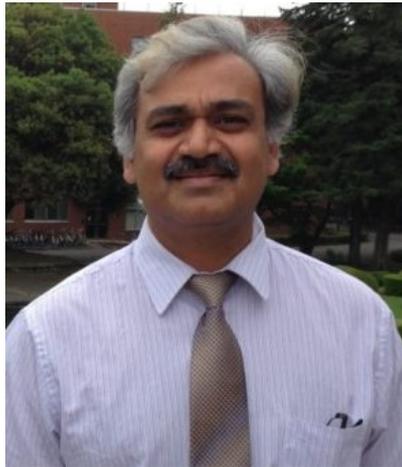


Floriculture



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- Floriculture is a branch of horticulture that specializes in the science of cultivation of flowers
- Flowers are cultivated under protected, semi-protected and field conditions

Protected



Semi-protected



Field

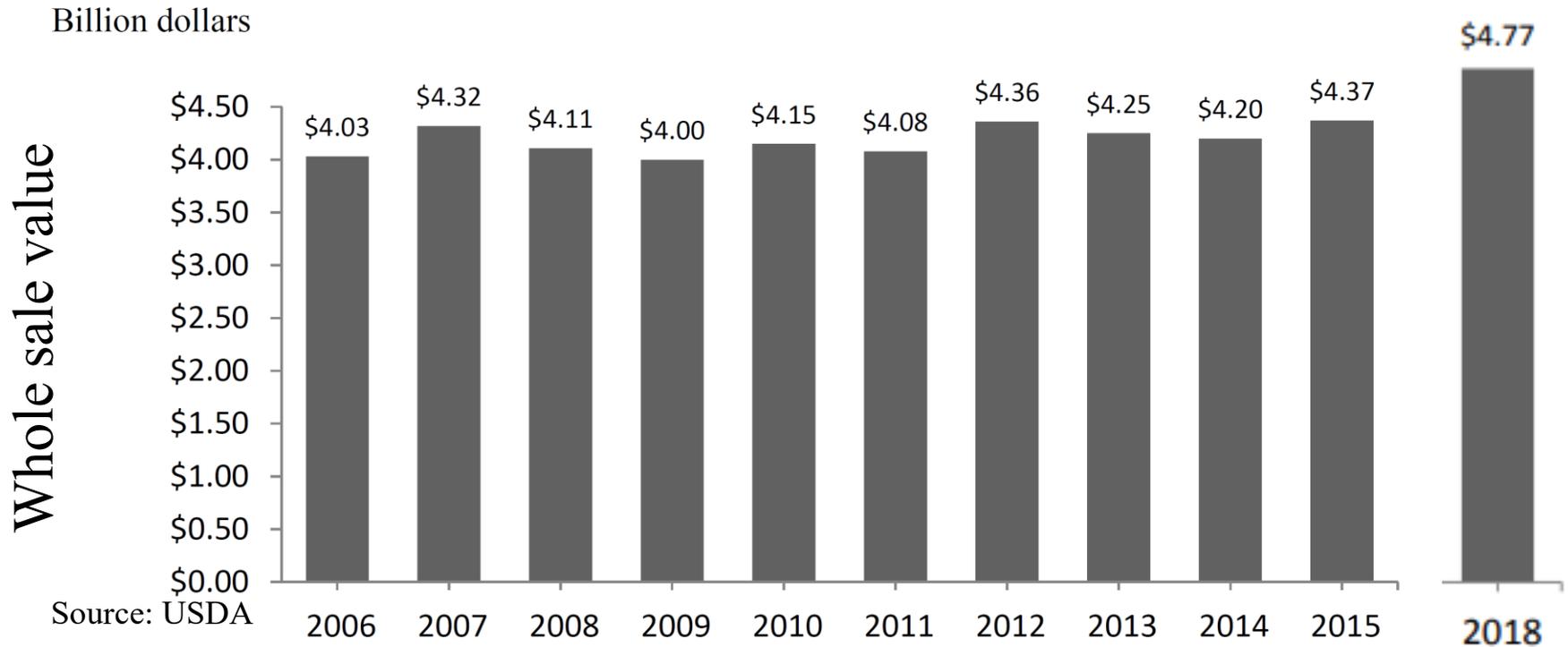


Floriculture includes broad range of crops



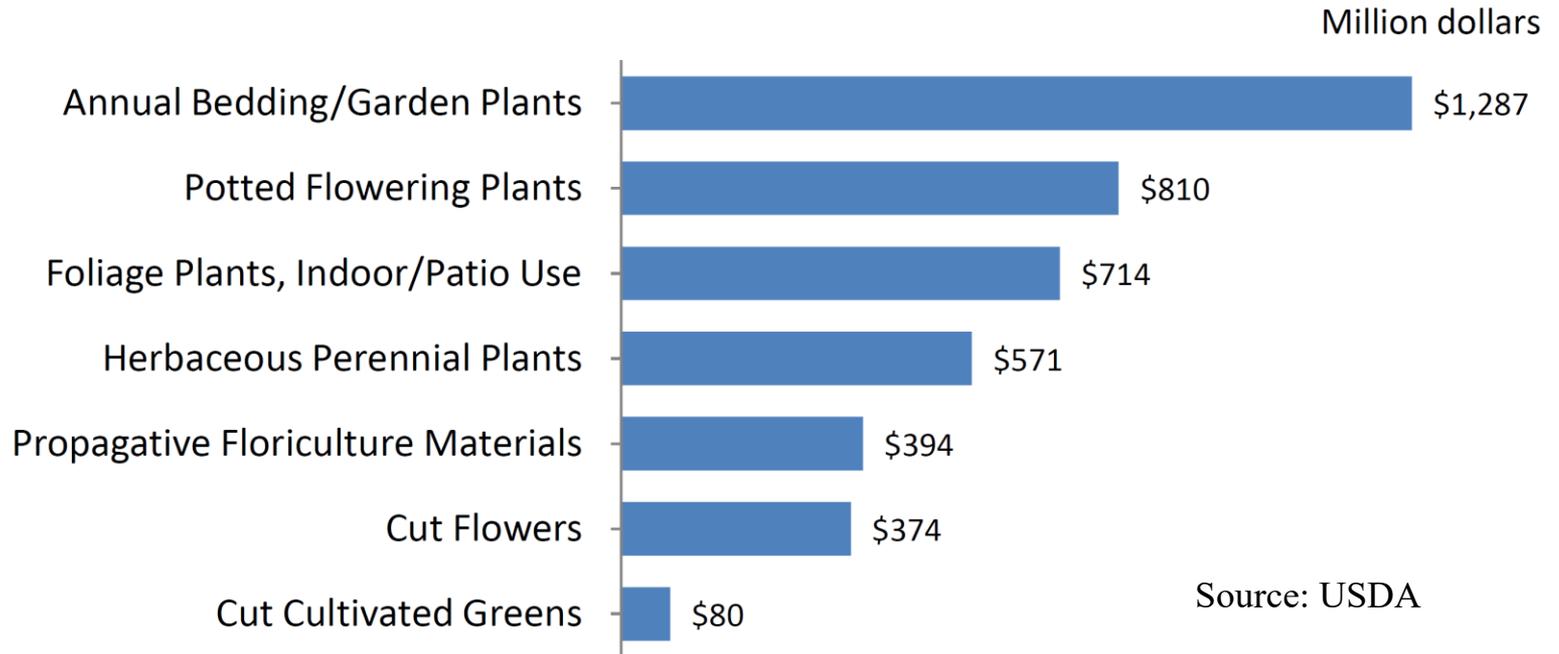
The art of floral arrangement also falls under floriculture

Multi-billion \$ industry in the US



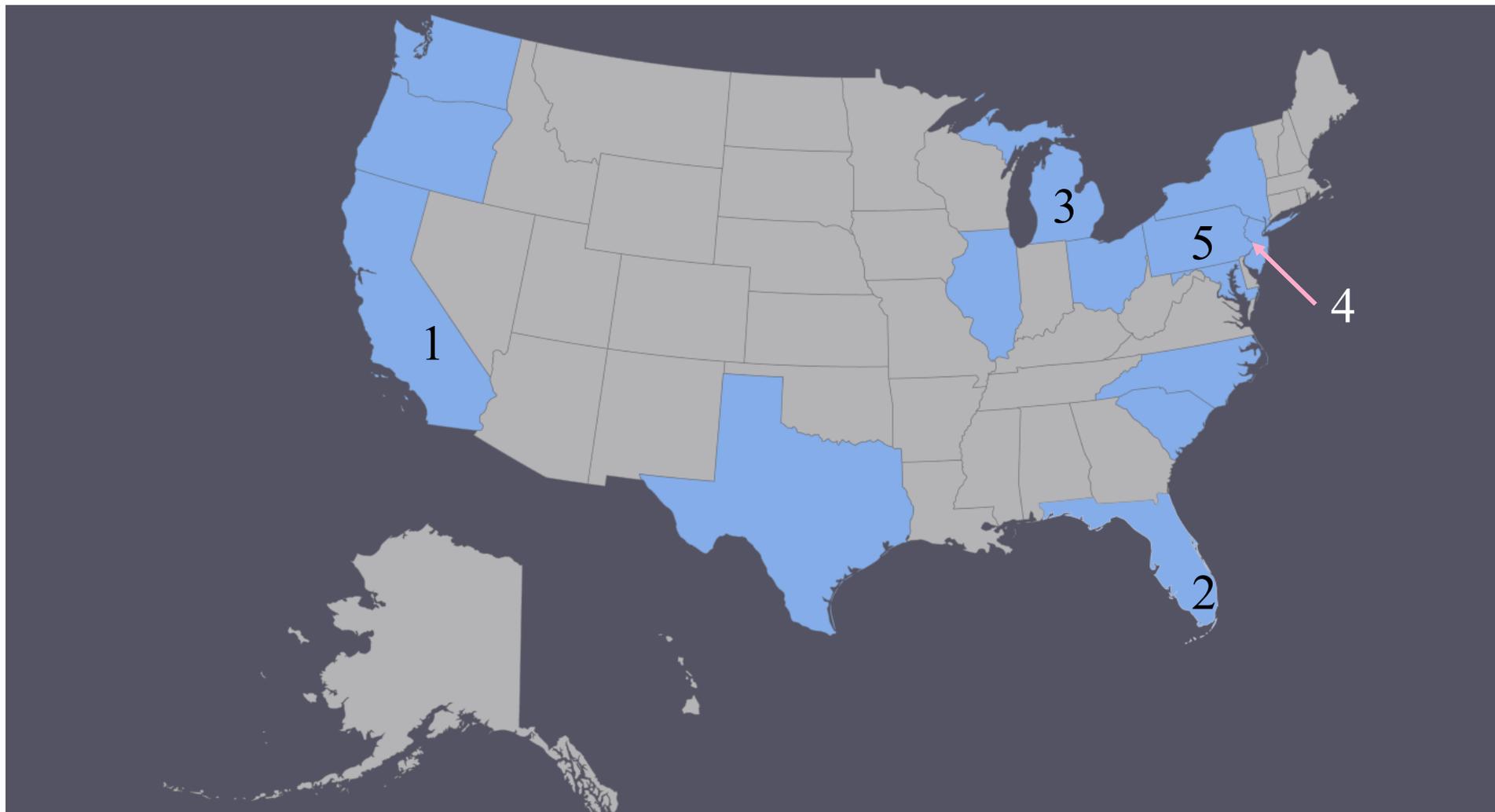
Floriculture sales at all retail outlets was \$31.3 billion in 2015
(U.S. Bureau of Economic Analysis Personal Consumption Expenditures (2016)).

Whole-sale value by crop in the US

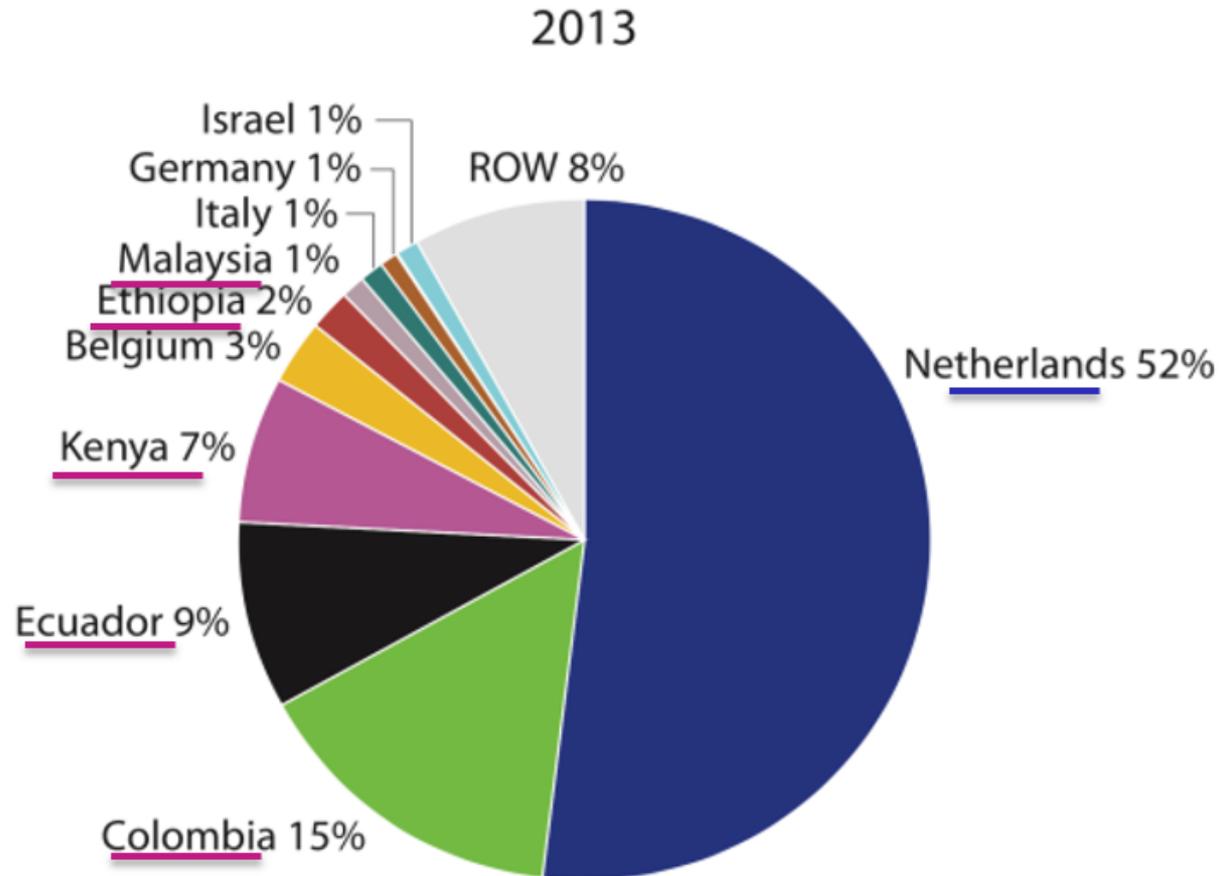


California and Florida rank as top two states

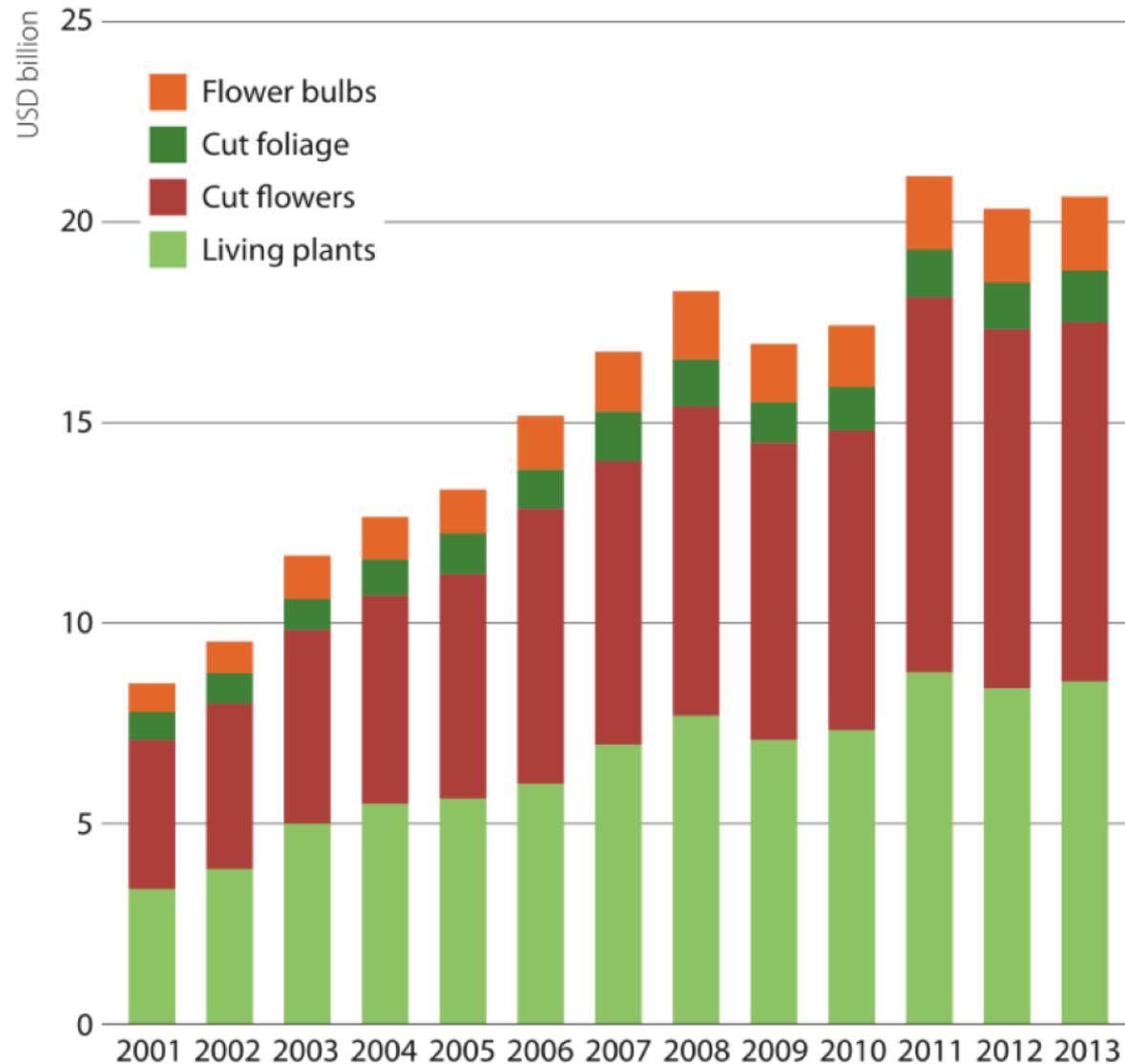
Floriculture industry in the US



Global floriculture outlook



Global floriculture outlook



Scale of floriculture industry: Examples

Aalsmeer (Netherlands: largest floral auction center)

<https://www.youtube.com/watch?v=692uYk1pHFQ>

Metrolina greenhouse, largest greenhouse in the US

<https://www.metrolinagreenhouses.com/>

greenhouse
GROWER

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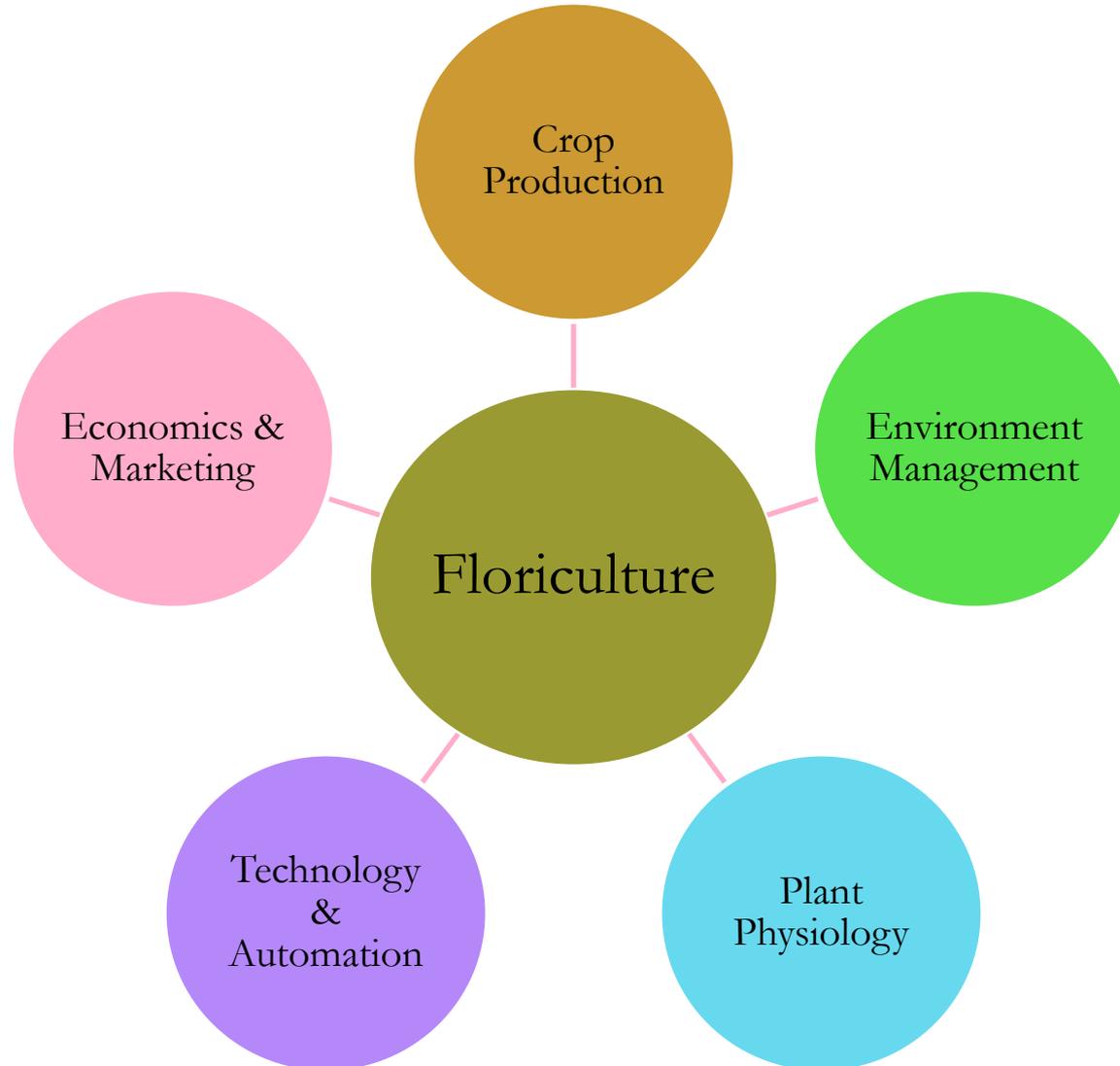


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Experiential Learning



Environmental control is critical for profits



Is there a market for poinsettias after Christmas?

Environmental control is critical for profits



Environmental control is critical for profits



Floriculture farming is intensive



Some research questions in floriculture

- What are optimum environmental conditions for crops?
- How to produce uniform plants?
- How to protect plants from insects and diseases?
- How to effectively monitor plant growth?



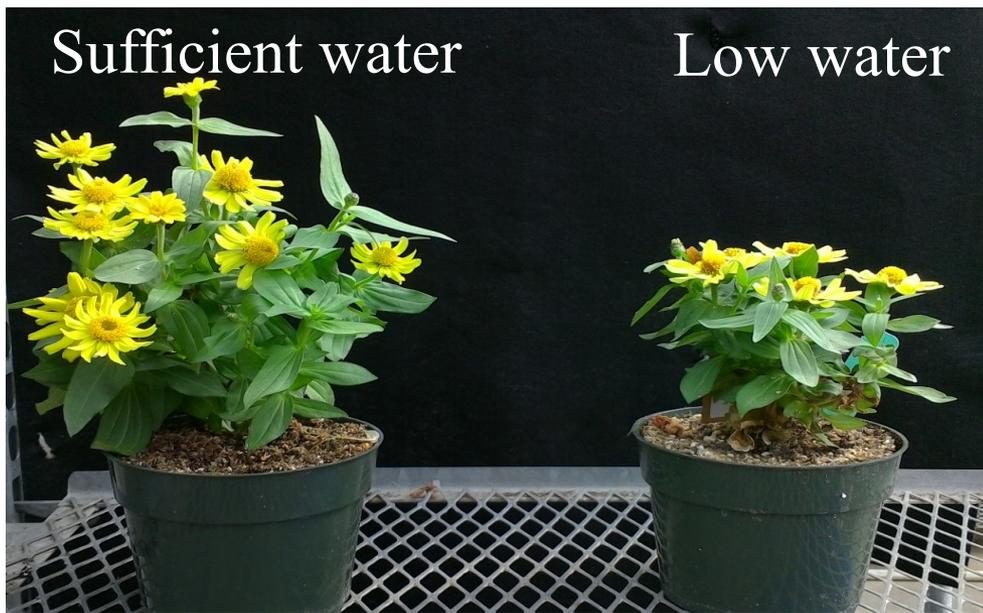
How much fertilizer or water do plants need?

Fertilizer

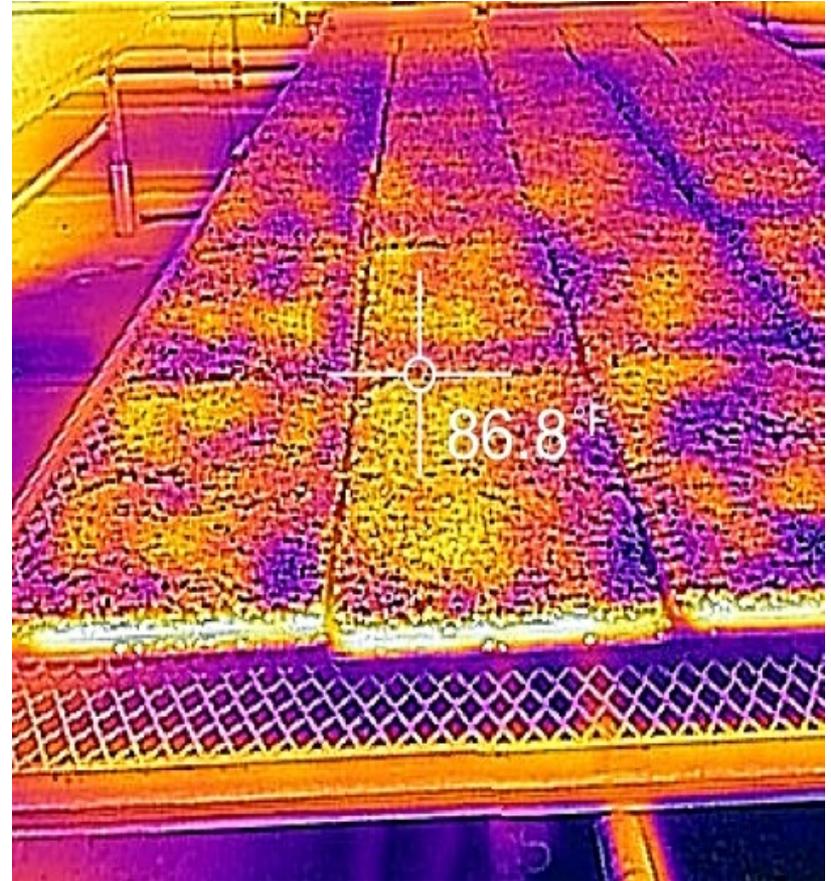
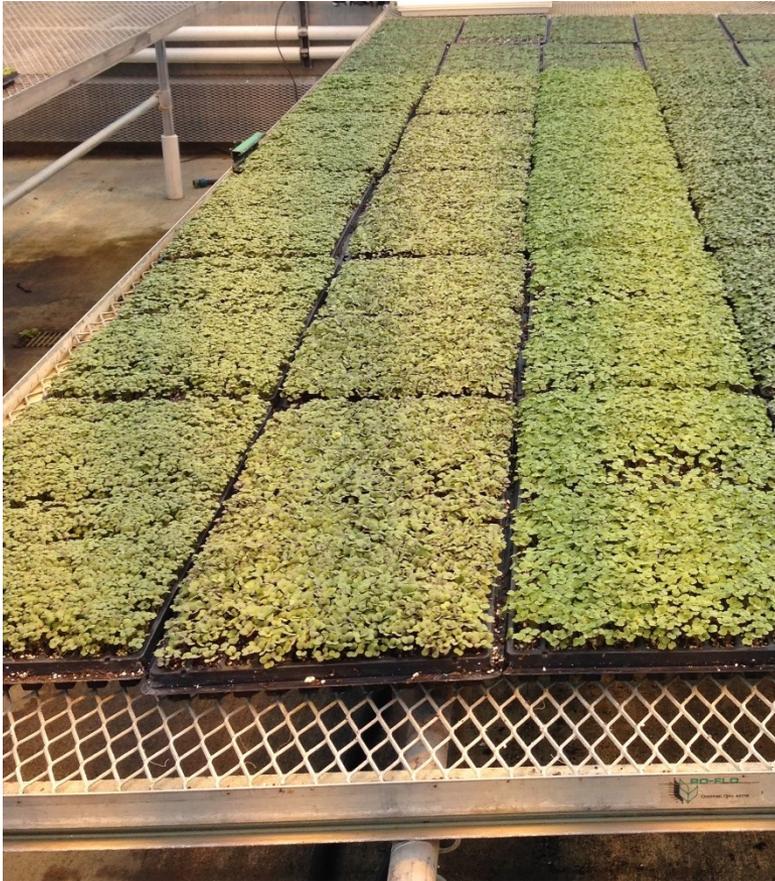


Sufficient water

Low water

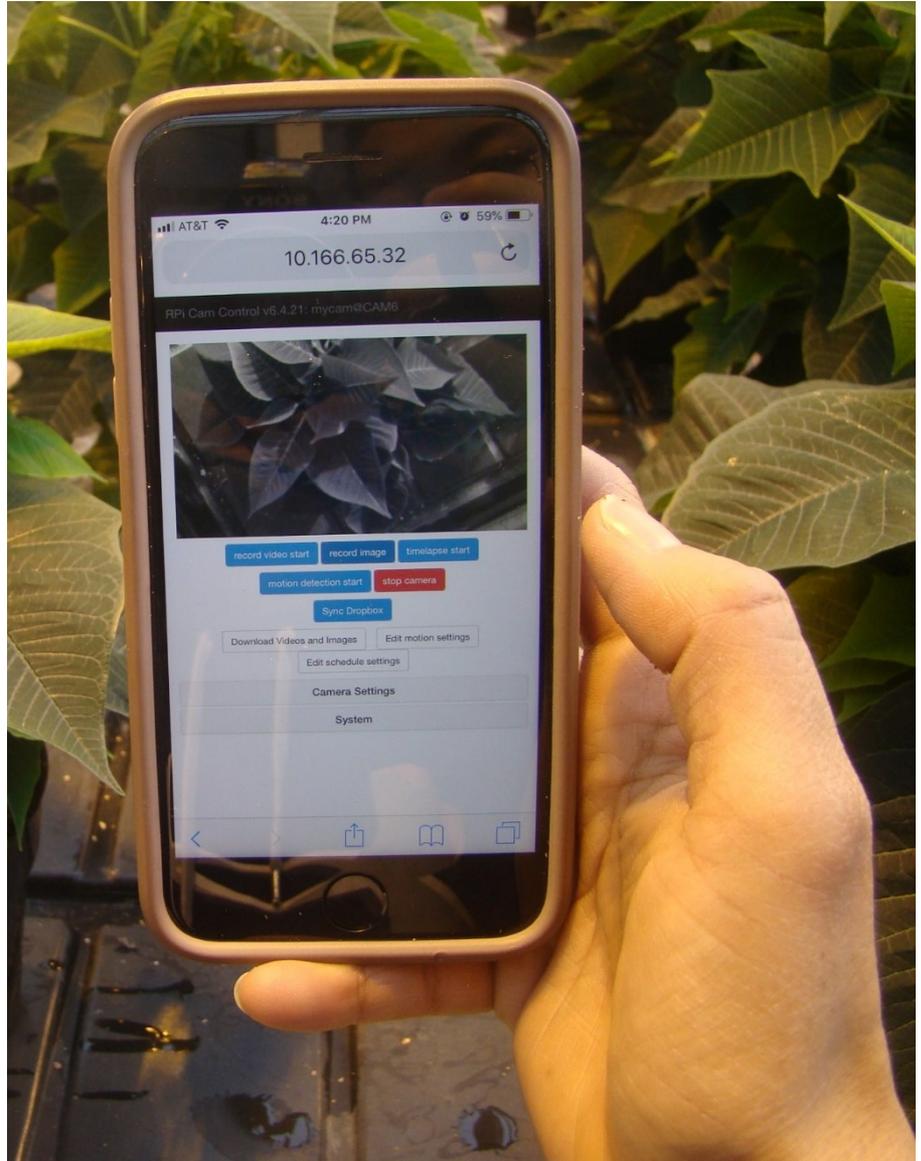


When is the right time to irrigate plants?

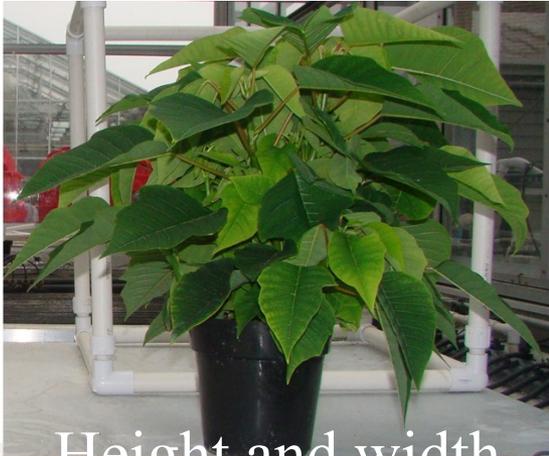


Research in my lab: Smart sensors

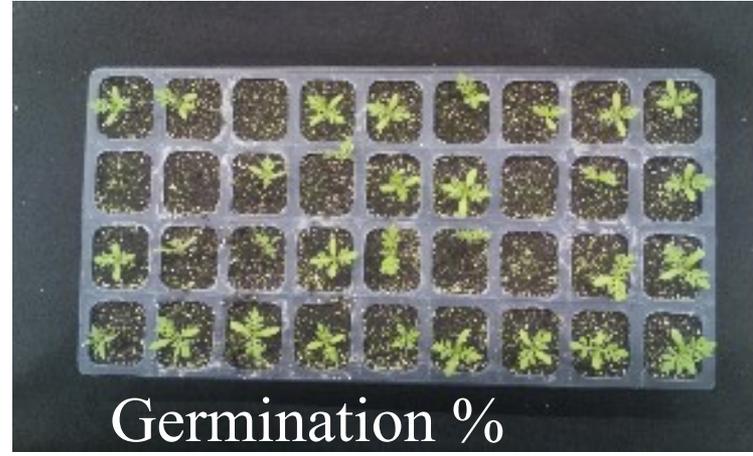
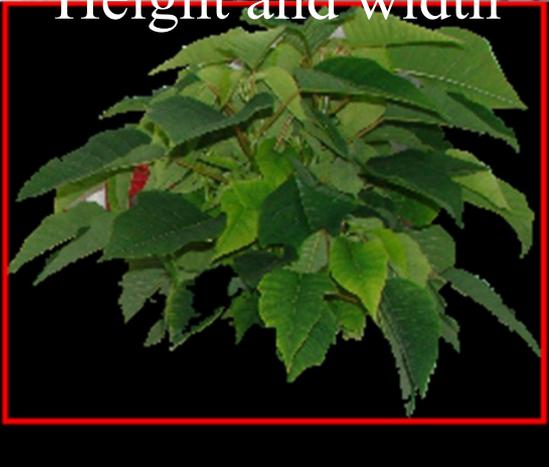
- Low cost
- Easy to use
- Universally Available
- Easily adoptable
- Attractive



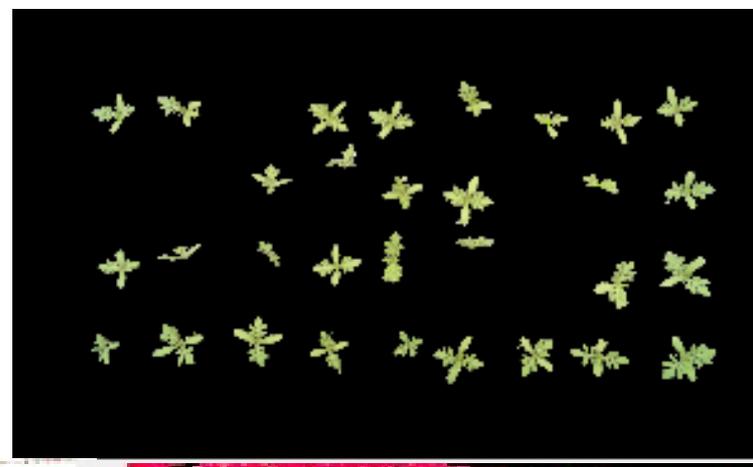
Research in my lab: Smart sensors



Height and width

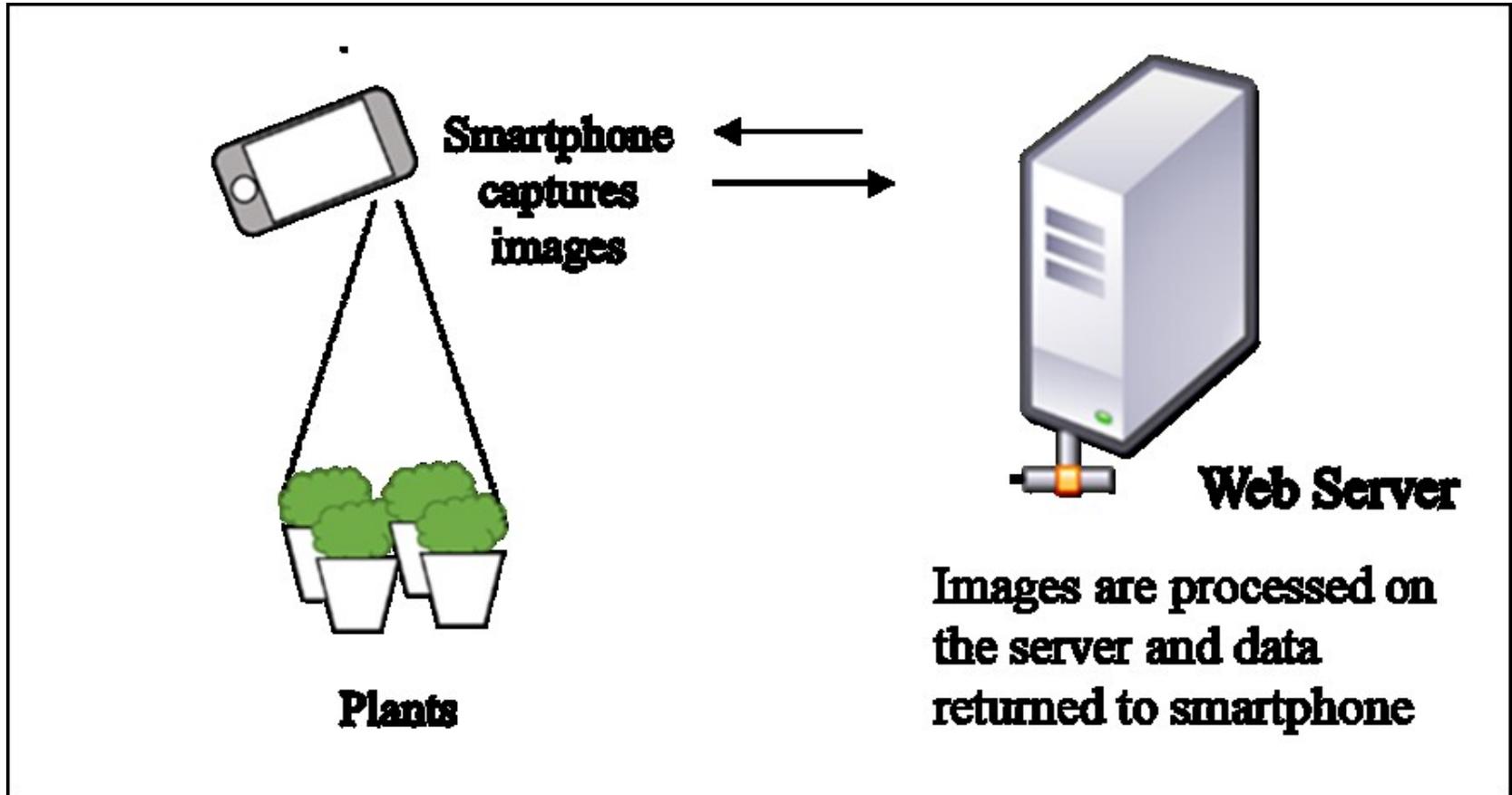


Germination %



Flower color

Technology is easily accessed by flower growers



Marketing: Grocery chain stores



Important questions on floriculture industry

- Name holidays when flowers are mostly sold?
- What type of flower products are purchased by customers?
- Where are the cut flowers sold in the US mostly grown?
- Can you think of one major marketing opportunity for floriculture?
- What are some major obstacles to floriculture industry?