Sustainable Agriculture - Benefits of Indoor Vertical Farming

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Presidential Advisory Council on Combatting Antibiotic-Resistant Bacteria, June 2021
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No Pesticide Use
Antibiotics, fungicides and herbicides are commonly sprayed on crops, creating potential for resistant bacteria and fungus in soil.

Human Health
Pesticide residues* (including Dacthal, banned in Europe) are found on 70% of produce sold in the U.S. even after washing.

Food Safety
Field grown lettuces comprise 11% of all food contamination, indoor farming provides enhanced safety controls and traceability.

Food Security
Local food sourcing strengthens supply chain resilience during events that disrupt food supply such as the COVID-19 pandemic.

Pharmaceuticals
Innovations are enabling plants to be grown as bioreactors to produce proteins and inputs for vaccines and therapeutics.

Indoor vertical farming utilizes up to 95% less water and as little as 0.3% of land required for field farming.

Solutions are enabled by innovation in mechanical design, biological science and data analytics and controls.

*https://www.theguardian.com/environment/2019/mar/20/pesticide-residues-produce-even-after-washing-us
Areas of Expertise Enabling Indoor Vertical Farming

- Deep understanding of plant biology
- Mechanical design of grow towers and ancillary equipment
- Tightly controlled environment
- Optimizing plant performance enables:
  - New varieties
  - Higher quality
  - Lower costs
- Data science enabling fully-connected agriculture
- Operations at scale, with controlled standard operating procedures
- Optimized plant genetics