

Vertical Farming

How does this technique "stack up" against standard farming?

What a plant needs

Plants need a few things in order to grow. With these ingredients? Plants can photosynthesize and create the energy they need to grow and produce the crops we eat.

What is vertical farming?

Vertical farming takes agriculture to a new level — growers stack crops on top of each other indoors. This approach:

- Grows more plants on the same horizontal footprint protect
- Protect crops from weather and pollution
- Keeps fertilizer and pesticides from running off into waterways

Water use

Compared to standard farming, vertical farming saves water.

Light

Standard farming has free access to sunlight — no troubles there. But vertical farming requires either grow lamps or LED lights. LED lights are becoming popular because they are cheaper and can be designed to admit a wavelength of light targeted for chlorophyll's peak absorption (measured in nanometers).

Is vertical farming worth it?

Pros: Vertical farming reduces water use, and vertical farms can be in cities, which reduces the time and expense of transporting food to restaurant and grocery stores.

Cons: Lightning and climate control increases energy cost, making vertical farming more expensive than standard farming.

* What do plants do with all those nutrients, anyway?

Sources:

<https://www.acs.org/content/dam/acsorg/education/resources/highschool/chemmatters/issues/2016-2017/October%202016/chemmatters-oct2016-vertical-farming.pdf>

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