

Vertical farming and sustainability: We can now grow fruits and vegetables in urban areas without soil or sunlight

Most vertical farms share a few attributes. One is a lack of soil. Their stacked rows of crops are grown aeroponically, meaning the roots are fed with a nutrient-rich mist, or hydroponically.

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This lets a lot less water than is usually used do a lot more work. No soil means precise control over what level of nutrients all the roots receive. It also eliminates weeds and helps keep down microbes, insects and other crop-devouring pests, many of which need soil for some of their life cycles. No soil also means no fertiliser runoff into waterways; vertical farms tend to recycle things, not dispose of them. Some contain aquaponic ecosystems in which aquaculture and horticulture combine: the plants feed the fish, the fish fertilise the plants.

Sunshine is absent, too. Light comes from strips of leds arranged so that all the dense-packed leaves are optimally illuminated.

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With light, temperature and nutrients all delivered directly, the conditions for growth can be optimised. And the crops raised are carefully chosen, with fast-growing, light, high-margin produce comprising most of them today. High-quality herbs and leafy greens can be guaranteed at all seasons and from a local source.

[**This is an excerpt. Read the original post here.**](#)