

# FARMBOT

## DIY FARMING ROBOT HELPS KEEP COST OF VEGETABLES LOW WHILE REDUCING CO2 EMISSIONS

Project URL: [farmbot.io](http://farmbot.io), [openfarm.cc](http://openfarm.cc)

Project Twitter: [@farmbotio](https://twitter.com/farmbotio)

Organisation URL: [go.farmbot.it](http://go.farmbot.it)

- Environment & Sustainability
- Physical Computing

The agricultural industry is extremely wasteful. A 2005 study showed that crop land costs the US \$5-\$6 billion a year in pesticides, excessive water use and loss of natural environment. The UN Environment Programme concluded in 2010 that agriculture and food consumption are two of the most important drivers of environmental pressures, particularly climate change, water use and toxic emissions.

While precision farming has been shown to improve agricultural efficiency, it is expensive, with precision tractors costing more than \$1 million. As FarmBot founder Rory Aronson says, "It's a shame." But, he adds, "we're here to change that."

FarmBot is a self-assembly robot whose parts can be purchased as a kit, or 3D-printed at home with the right equipment. Using the Arduino RAMPS stack, Raspberry Pi and open-source software, FarmBot adapts to the soil, the crops and the weather to dispense water and fertiliser, and bury weeds, as needed.

Users can design their gardens on a Farmville-like app, and check in on their plants through FarmBot's video camera and smart software. The open-source nature of the project means that thousands of farmers, IoT fans and techies continually improve the mechanics and programs. FarmBot can also be taken off-grid with solar panels and a water collection system.

The system by no means replaces humans, who are needed for harvesting, and at \$3,100 it is intended for hobbyist farmers with rooftop and kitchen gardens, but Aronson believes the project will encourage people to eat more healthily while reducing the environmental impact of large-scale agriculture. He estimates that FarmBot-grown veggies produce 25% fewer CO2 emissions and are 30% more affordable when the machine cost is paid for in instalments over five years. After that, home-grown veggies cost a fraction of the supermarket version.

The DIY farming robot is available for pre-order at <https://farmbot.io>

*Image courtesy of Guy Evans*

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