



Open Source

From The Agriculture Resource Library at openagriculturetechnology.com/resources/open-source/

43 entries

RESOURCE	WHAT IT IS	WHAT YOU GET
Acorn precision farming rover https://github.com/Twisted-Fields/acorn-precision-farming-rover	A fully open, solar-powered farm rover reference design from a California research farm. Development has been quiet since 2024; the plans remain.	A complete open rover design to study, with honest notice that the project is sleeping.
AgIsoStack++ https://github.com/Open-Agriculture/AgIsoStack-plus-plus	The only open ISOBUS implementation: a free CAN stack in C++, Arduino, and Rust that lets homemade electronics talk to real tractor equipment.	The key to your tractor's data bus without an OEM toll booth.
AgML https://github.com/Project-AgML/AgML	One loader for the public agricultural machine-learning datasets, benchmarks included, millions of labeled images.	If you are training a model on crops, start here instead of scavenging.
AgOpenGPS https://github.com/AgOpenGPS-Official/AgOpenGPS	Centimeter-accurate tractor autosteer farmers build themselves from off-the-shelf GPS and electronics: a decade of development and probably the most vibrant farmer-built software community anywhere.	Precision guidance for hundreds of dollars instead of tens of thousands, with a forum full of farmers who wired theirs.
AgStack (Linux Foundation) https://agstack.org	The Linux Foundation's digital public infrastructure for agriculture: open field-boundary identifiers, weather services, and since late 2025 the merged OpenAgri toolset.	Vendor-free building blocks, like a field ID no company owns.
AquaCrop (open source) https://github.com/aquacropos/aquacrop	The open Python implementation of FAO's crop-water productivity model.	Model yield against water before you commit either.
awesome-agriculture list https://github.com/brycejohnston/awesome-agriculture	The broadest community list of open agriculture software, developer-flavored and updating more slowly than it once did.	The long tail of ag code, if you can read a bare list of repositories.
b-parasite https://github.com/rbaron/b-parasite	An open-hardware soil moisture and temperature sensor that speaks Bluetooth and Zigbee straight to Home Assistant; order the board, flash it, done.	A soil sensor you can actually trust and repair, for less than the disposable ones.
Bionutrient Meter https://www.bionutrient.org/bionutrientmeter	An open-hardware handheld reflectometer measuring crop nutrient density and soil carbon, validated in the peer-reviewed literature.	A citizen-science window into the quality of what you grow, not just the weight.
Cover Crop Species Selector https://covercrop-selector.org	A free web tool where you put in where you farm and what you want a cover crop to do, and it shows which species fit, rated by people who have grown them in your zone. You can also just browse without filling anything in. The code is MIT licensed on GitHub.	A short list of cover crops that suit your zone and goals, with planting windows and ratings, so you can skip the call to the extension office. The same group runs sister tools for cover crop economics and nitrogen credits.
ESPHome https://esphome.io	Firmware for ESP32 boards written as configuration, not code: describe your sensors in YAML and flash from the browser. Ships monthly.	The gentlest path from a bare board to a working sensor node.

Farm Data Relay System https://github.com/timmbogner/Farm-Data-Relay-System	An ESP32 mesh for hauling sensor data across a farm where WiFi does not reach, hopping node to node. Development has slowed; the design still works.	Field-scale sensor reach without LoRaWAN infrastructure.
Farm Hack https://farmhack.org	The farmer-driven open tool library: three hundred documented tool designs and the culture of farmers publishing what they build.	Plans for tools other farmers already proved, and a place to publish yours.
farm-ng Amiga https://amiga.farm-ng.com	A modular electric farm rover with an open SDK, the platform behind the collegiate Farm Robotics Challenge. The hardware is commercial; the development surface is open.	A real rover you can program without signing an NDA.
FarmBot https://farm.bot	The open-source CNC garden robot that seeds, waters, and weeds raised beds; hardware plans and software all free, used by five hundred schools.	A garden that tends itself, or the best robotics teaching platform agriculture has.
FarmData2 https://github.com/FarmData2/FarmData2	Data entry and reporting for diversified vegetable farms, built on farmOS, aligned with organic certification records, and sustained by a college course.	Certification-shaped record keeping, free, from people teaching the next generation to maintain it.
farmOS https://farmos.org	The open farm record-keeping platform, twelve years of steady releases, whose data model has become a de facto open standard others build on.	Farm records you own outright, on software nobody can take away or subscription-trap you with.
FarmVibes.AI https://github.com/microsoft/farmvibes-ai	Microsoft Research's open geospatial and ag model toolkit: serious satellite and weather fusion workflows, freely licensed.	Big-company research tooling, open on the shelf for anyone technical enough to lift it.
Fields2Cover https://github.com/Fields2Cover/Fields2Cover	The open coverage-path-planning library for farm vehicles: how a robot decides to drive a field.	A standard building block if you are pointing anything autonomous at a paddock.
GOAT (Gathering for Open Agricultural Technology) https://goatech.org	The commons of open agricultural technology: a forum where the farmOS, OpenTEAM, and farm-hacker worlds meet, and a biennial gathering (next: December 2026, Seabrook Island, South Carolina).	The watering hole. If you build open tools for farms, these are your people.
GOSH (Gathering for Open Science Hardware) https://openhardware.science	The global open science hardware community, the adjacent gene pool the open ag sensing world draws from.	Where scientific instruments get opened up, often years before farming notices.
Growstuff https://www.growstuff.org	An open-data social platform for food gardeners, and the community that rescued the OpenFarm crop records when that project's servers died.	Track plantings and harvests in the open, and help keep crowd knowledge alive.
Home Assistant https://www.home-assistant.io	The world's largest open home-automation platform, nonprofit-owned, and quietly the largest community on earth doing ESP32 environmental monitoring.	The place your sensors, irrigation, and greenhouse controls all come together, owned by you.
Home Assistant plant monitoring (Olen's plant + flower card) https://github.com/Olen/homeassistant-plant	The maintained plant-monitoring pair for Home Assistant: per-plant thresholds, a database of species targets, and the flower card to show it all.	Every plant's moisture, light, and warnings on one dashboard.
Irrigation Unlimited https://github.com/rgc99/irrigation_unlimited	The power-user irrigation scheduler for Home Assistant: seasons, sequences, and every edge case, actively maintained.	Irrigation scheduling with no ceiling on complexity when your system outgrows the simple ones.
LiteFarm https://www.litefarm.org	Free farm planning and record software built with farmers by a university team, used on three thousand farms in over a hundred countries.	The easiest on-ramp to farm records for a small diversified operation.

MIT OpenAg (archived) https://github.com/OpenAgricultureFoundation/openag_brain	The food computer initiative, the most hyped open ag project of its decade, shut down in 2020 after its demos proved staged. The grassroots projects it overshadowed all outlived it.	The other cautionary tale: working tools and honest claims beat press releases.
MudPi https://mudpi.app	A configurable smart-garden framework for Raspberry Pi and ESP32: sensors, relays, and automations from a YAML file.	Garden automation glue that reads like a config file, not a program.
Mycodo https://github.com/kizniche/Mycodo	Raspberry Pi environmental monitoring and regulation with real PID control: greenhouse, mushroom, and hydroponic automation, relentlessly maintained for a decade.	Closed-loop climate control you own completely, on a fifty-dollar computer.
NeverDry https://github.com/never-dry/NeverDry	A new scientific water-balance irrigation integration for Home Assistant, releasing weekly since spring 2026.	The newest thinking in water-balance irrigation, free and moving fast.
Open Food Network https://openfoodnetwork.org	Open-source online marketplace software run by a global federation of nonprofits: twenty-five hundred farms and food hubs selling direct in fifteen countries.	Sell online without platform lock-in or a percentage skimmed by a landlord you cannot leave.
Open Soil Spectral Library https://soilspectroscopy.org	A global open database of soil spectra with a free prediction engine: upload a scan, get soil property estimates.	The open-science path to cheap soil analysis as DIY spectrometers mature.
OpenFarm (archived) https://github.com/openfarmcc/OpenFarm	The crowdsourced growing-guide project, ten years of work, servers shut down in 2025. Only a few hundred crop records were rescued, by Growstuff. The lesson: open data outlives dead servers only if someone mirrors it.	A cautionary tale other directories still link as though it were alive.
OpenSourceAgriculture index and newsletter https://github.com/geezacoleman/OpenSourceAgriculture	The actively curated index of open ag datasets, models, and hardware, from the OpenWeedLocator author, with a companion newsletter.	The research side of open ag, kept current by someone who ships hardware himself.
OpenSprinkler https://opensprinkler.com	The proven open irrigation controller: buy the hardware or build it, firmware and weather logic all open and still releasing.	Irrigation control with weather smarts that answers to you, not a cloud subscription.
OpenValve https://github.com/fabiansteiner/OpenValve	A 3D-printable irrigation pinch valve, the fastest-growing new open farm hardware project of the past year.	Print your own valves at the makerspace instead of buying them by the dozen.
OpenWeedLocator https://openweedlocator.org	A camera-and-Raspberry-Pi weed detector for spot spraying, peer-reviewed and buildable for a few hundred dollars, with excellent documentation.	The gentlest on-ramp to practical machine vision on a farm.
PlantCV https://plantcv.org	Ten years of open plant-phenotyping image analysis in Python, with version four lowering the bar for non-coders.	Measure plants from photographs the way the research stations do.
Purdue OATS Center https://oatscenter.org	Purdue's Open Ag Technologies center: birthplace of OADA and the ISOBlue open machine-data hardware.	The academic anchor of getting your own data off your own machinery.
SIP (Sustainable Irrigation Platform) https://github.com/Dan-in-CA/SIP	A long-lived Python irrigation controller for the Raspberry Pi, plugin-extensible and still actively maintained.	Roll-your-own irrigation scheduling with a decade of community plugins.
Smart Irrigation for Home Assistant https://github.com/altmenorg/HASmartirrigation	Evapotranspiration-based watering duration for Home Assistant: it does the FAO-56 math against real weather so you water what the plants actually used.	Irrigation that follows the weather instead of the calendar, free, in the platform you already run.

SurveyStack and Our-Sci https://www.our-sci.net	The open data-collection platform behind OpenTEAM and the Bionutrient Institute, with hooks for hand-held instruments and the Modus soil standard.	Community-owned research plumbing when your farm joins a study.
Tania (dormant) https://github.com/usetania/tania-core	Once the friendliest tiny-scale farm journal to self-host; unmaintained since 2021 and still appearing in software roundups.	A name to recognize so you do not build on it; use farmOS or LiteFarm instead.

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