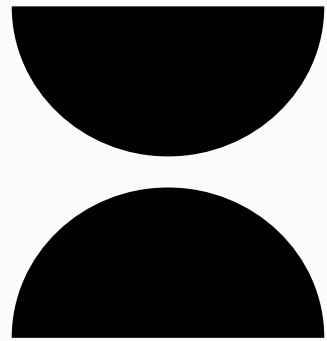




Buyers' Guide - 2026





Kilter



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The tools to push agriculture toward balance

Kilter develops products and solutions to raise yields while at the same time using fewer inputs and emitting less carbon. Kilter thinks it's time for humankind to establish a life on this planet, in balance with nature.

Kilter realizes the increasingly challenging decisions that growers have to make when it comes to weed management.

Manual weeding is expensive and time consuming, and difficult to fit into operational planning. Full cover application with effective chemistry is under a lot of pressure from both an environmental and legislative point of view, as well as from soil and consumer health, and phytotoxicity perspectives. Furthermore, soil compaction and resulting yield losses due to the use of heavy machinery is something that growers become increasingly aware of.

Mechanical weeding has its limitations too when it comes to application in challenging soil conditions, the prevention of target crop and root system damage and the application in larger weed sizes.

Through these insights, Kilter envisioned a solution that combines autonomy and lightweight 'swarm-farm' equipment principles with the power of AI and patented application method SDT (single drop technology). Where the swarm-farm solution refers to having multiple compact robots working alongside each other in the field.

In our design processes, we envisage the farmer as the superhero he truly is. After a farm-focused development process and a science-driven approach, Kilter is proud to present its product line.



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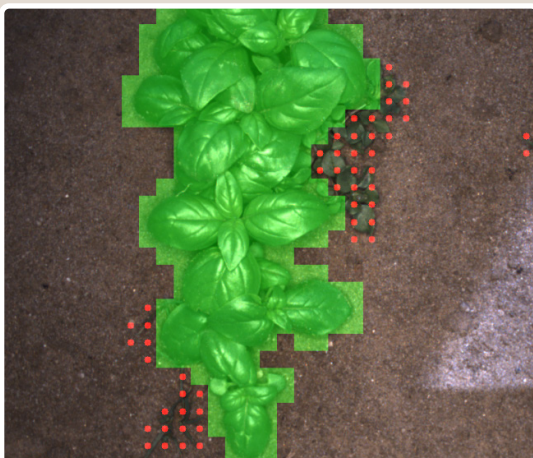
Kilter AX-1

We are happy to introduce you to the Kilter AX-1, the first and only single drop application robot. The robot is designed for specialty crops that applies micro droplets of crop protection agent, letting the AX-1 to be the only true selective herbicide applicator on the market. This enables growers to economically treat problematic and hard-to-kill weeds whilst reducing the environmental load significantly.

Technology

Kilter takes weed control to the next level by using smart AI instead of chemicals to find and treat weeds with 6x6mm accuracy. In other words, we moved the selectivity from chemistry to software. The heart of the AX-1 technology is the modular spray system, SDT-modules, which consists of a camera equipped with smart software, and 42 integrated droplet applicators. Once a certain plant is identified as a weed a crop protection solution is released on a 6x6 mm grid to cover the plant's surface area.

Each module covers 260 mm in working width. The Kilter AX-1 is currently available in either five or six SDT-module configurations.



High resolution

The high application resolution and the ability to accurately detect weeds from a very early growth stage onwards, makes the AX-1 truly unique. Alternative weeding methods, including precision spraying technologies, often have a minimal application footprint of several centimeters, inevitably resulting in higher probability of causing crop damage.

Around these SDT-modules, Kilter designed an autonomous vehicle from the ground up to ensure the most consistent spray quality is achieved. The light-weight frame is equipped with two independent electric motors, ensuring accurate driving speeds and an impressive turning radius.

Together with the accurate electric boom lift, RTK GNSS receiver, 4G antenna and a variety of other sensing equipment, the perfect conditions are created for application in specialty crops such as vegetables.

Classifiers, the term Kilter uses for algorithms developed to detect weeds from a certain target crop - are constantly under development and improvement. This ensures that the AX-1 remains a relevant and updated technology now and in the coming years. The current list of compatible crops can be found on **kiltersystems.com**



Additional benefits

Beside savings on crop protection inputs, additional benefits can be listed related to the use of the Kilter AX-1.

Phytotoxicity

As mentioned, because of the high application resolution through our 6x6 mm grid pattern, it can be prevented that target crops are also affected through phytotoxicity. Research shows that prevention crop metabolism issues can lead to an annual yield increase of up to 35%.

Soil compaction

The Kilter AX-1 was designed with a focus on weight to preserve your soil quality. With a distributed dry weight of less than 300 kg we ensure minimal soil compaction. Your soil will retain its important pores to transport water air and nutrients even under moisty conditions.

Farm logistics

A large reduction in applied volume has drip-down effects on farm logistics as well. If a grower only needs to apply 5% of product, this means that less water and fuel need to be moved to the field. Instead of hauling large water or fuel tanks to the product applicator, resupply can be provided even on the AX-1 transport trailer or carrier itself.

Labour allocation

Kilter understands that growing specialty crops and specifically vegetables is a labour-intensive undertaking. Weeding needs to be done carefully and regularly, and by automating these efforts through the AX-1, the grower can allocate his or her workforce elsewhere.

Data collection

Last but not least, AX-1's application data can provide additional and valuable insights for the grower. Knowing where the weedy spots are exactly located can be useful input for agronomic decisions at the farm.



Conventional

AX-1 Treated



AX-1 Machine Specifications

Length	2.16 m
Width*	1826 – 2276 mm
Height	1.54 m
Spray width*	1.32 – 1.58 m
Track width	1550 mm – 2000 mm
Tare weight	265 kg
Operational weight	365 kg
Maximum driving speed	0.9 m/s
Maximum field autonomy driving speed	0.5 m/s
Boom height	0.1 – 0.5 m

*Depending on 5 or 6 module configuration and spacer setup

Product tank volume	52 L
Rinse tank volume	17 L
Clean water tank volume	15 L
Number of SDT-modules	5 or 6 pcs
Number of nozzles per SDT-modules	42 pcs
Nozzle opening diameter	1.0 mm
Operating pressure	0.95 bar
Maximum plumbing pressure	4 bar

Propulsion	Electric wheel motors
Energy source	Honda EU22i generator
Gas tank	3.6 L + 5 L spare fuel tank
Fuel type	Gasoline
Product application rate	278 L/ha



Celeriac



Beets



Swede



Parsnip



Spinach



Root parsley



Carrot



Celery



Corn salad



Onion



Ruccola



Updated List

Transport options

Kilter realizes that a valuable farm asset such as the AX-1 needs to be transported safely between fields and to storage, and vice versa. Therefore, two transport options were developed as a sales option.

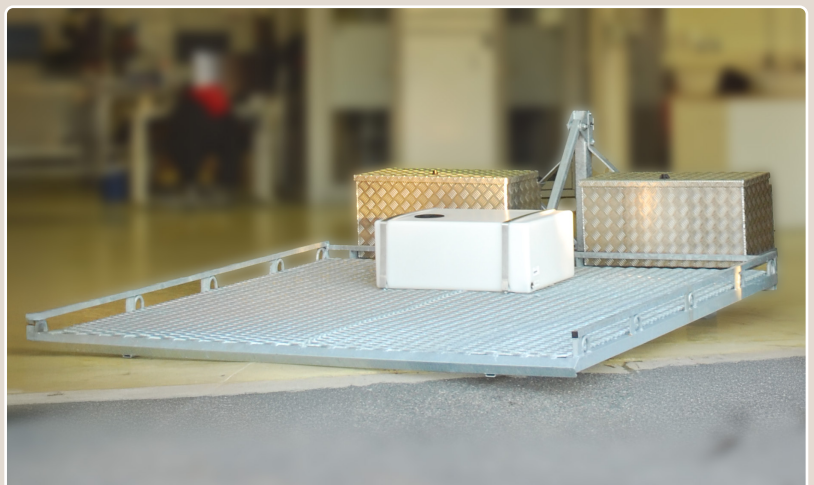
Vehicle hitch

A ball hitch vehicle trailer is available and comes with some useful features. Beside brakes and safety lights, it comes with a spare water tank of 100 L, an electric refill pump and two weatherproof toolboxes.



Three-point-hitch carrier

A lightweight but robust CAT II three-point-hitch tractor carrier is available to bring the AX-1 to the field by means of tractor. Equipped with the same spare water tank, pump and toolboxes as the ball hitch trailer.



Operations and support

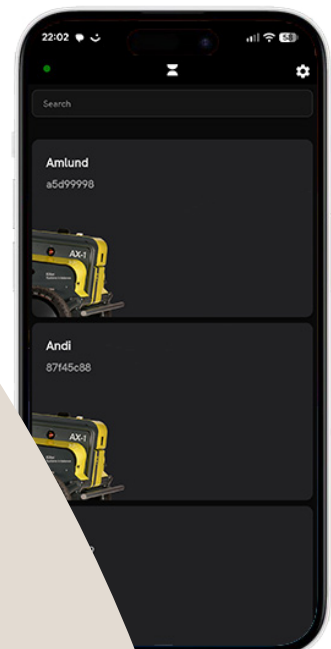
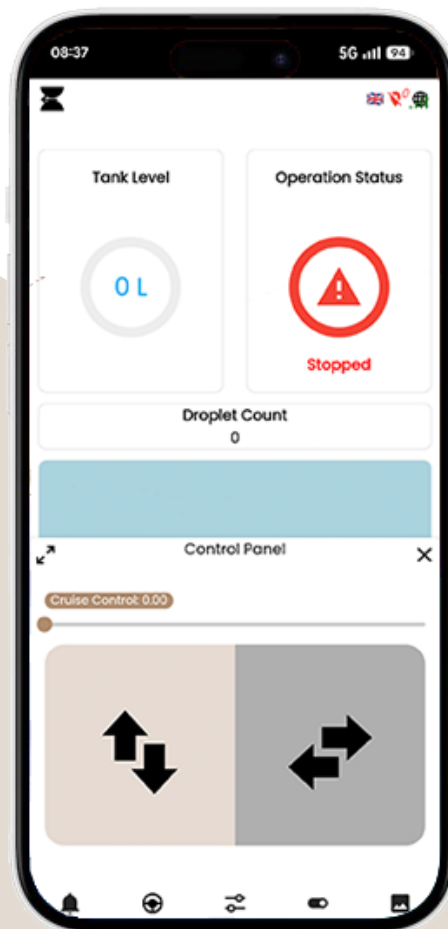
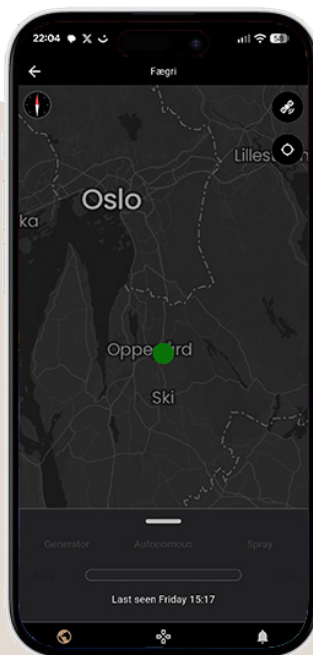
Operational user friendliness has been one of Kilter's focus points in development. A grower can operate his or her acquired AX-1 through a mobile application called the Kilter Remote. The main features can be listed as follows:

- Setup and configuration of application jobs
- Direct monitoring of robot and job status parameters
- Manual joystick to take over control of robot navigation. Useful for driving to headland or parking onto trailer or carrier

The Kilter Remote is available both on Android and iOS.

Regarding safety, beside the physical measures onboard of the AX-1, the Kilter Remote also ensures that only a grower has direct access to control and operate the robot.

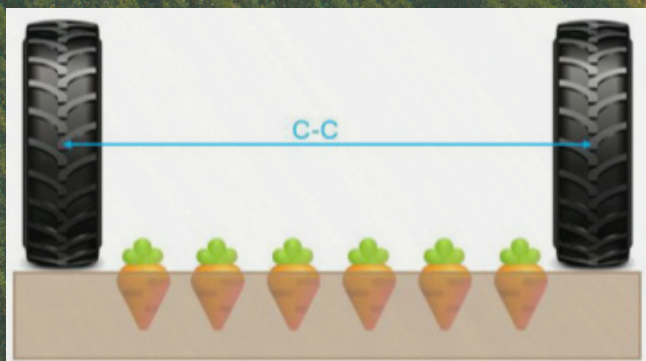
Assistance from the Kilter Support Team is available in various forms to the grower, ensuring a swift pick-up of error messaging to reduce downtime to a minimum. Furthermore, an online portal is accessible that provides manuals and other informative documentation on the AX-1.

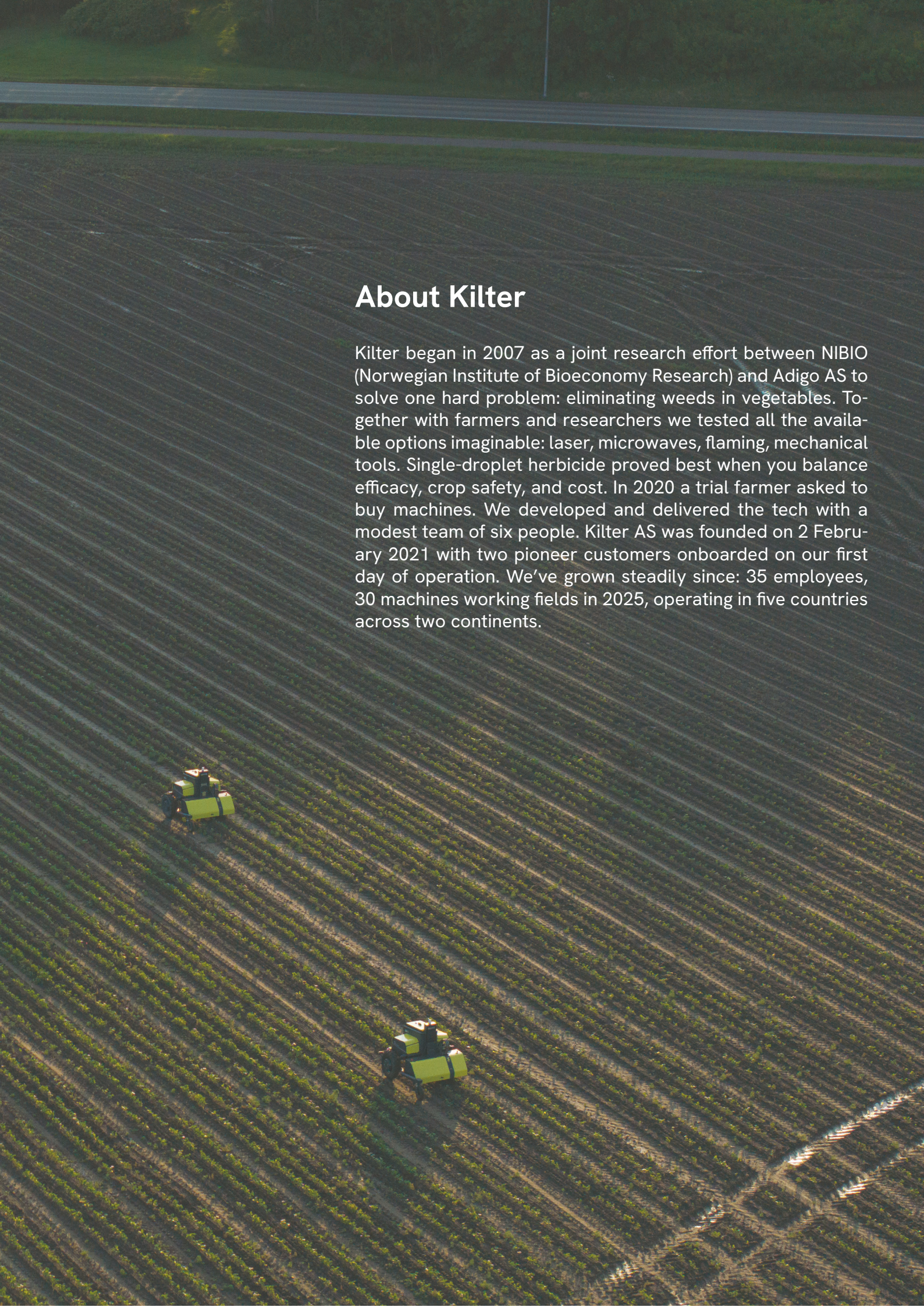


Farm compatibility

To ensure that the Kilter AX-1 is a seamless fit to a farming operation, and that operational results are maximized, Kilter upholds a thorough onboarding process. Important items include the following:

- Type of growing system. AX-1 is compatible with crops that are grown in either flat or bed cultivated environments.
- Type of GNSS system used. Navigation of AX-1 is compatible with RTK NTRIP.
- Type of wheel track collection data points. Kilter builds tailored path planning, and GNSS data from either the bed former or the seeding implement (depending on growing system) are critical to ensure accurate navigation in the field.
- Types of crops grown. Compatibility with the current range of classifiers needs to be ensured





About Kilter

Kilter began in 2007 as a joint research effort between NIBIO (Norwegian Institute of Bioeconomy Research) and Adigo AS to solve one hard problem: eliminating weeds in vegetables. Together with farmers and researchers we tested all the available options imaginable: laser, microwaves, flaming, mechanical tools. Single-droplet herbicide proved best when you balance efficacy, crop safety, and cost. In 2020 a trial farmer asked to buy machines. We developed and delivered the tech with a modest team of six people. Kilter AS was founded on 2 February 2021 with two pioneer customers onboarded on our first day of operation. We've grown steadily since: 35 employees, 30 machines working fields in 2025, operating in five countries across two continents.



Kilter
Systems in balance

