

UNDERSTANDING FARM IMPLEMENTS



BRIDGE TO
LAND WATER SKY

Farm implements are mechanical tools used to prepare, plant, spray, and fertilize crops throughout the growing season. This factsheet introduces key types of field equipment—such as seeders, sprayers, cultivators, harrows, and diskers—used before harvest. Harvest equipment is not included here due to its complexity and scale and is instead covered in the *Harvest Equipment* factsheet. Most producers now use GPS and autosteer technology to make precise, straight passes across fields, saving time, fuel and inputs. Drones and robotics are also being developed to further automate tasks like seeding, fertilizing, and spraying, offering new possibilities for efficient and sustainable land management.



Pull Plows

Pull plows were the original tillage implement used, consisting of one or two **steel arms extending out behind a tractor at a 45 angle**. Each plow has blades that till deeply for breaking up compacted or weedy soil in preparation for planting a crop.

Cultivators

Cultivators break up soil clumps and crusts. A metal frame with many **tined wheels spin through the soil**, working faster than plows, and disturbing the soil less.



Harrows

Harrows consist of **metal finger-like spikes attached to a steel frame**, and are pulled behind a tractor to break up soil clumps, smooth the seedbed, remove weed seedlings, and spread straw after harvest for more rapid decomposition.



Diskers

Diskers or disc harrows have several solid discs attached to a metal frame and spin through the soil. They are used to break new land to farm, to work up compacted soil and to destroy weeds.



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Seeders

Seeders use **several small plows or discs to create a trench into which seed is sprinkled from a hose**, then 'pressing wheels' packs the soil down. The implement is pulled behind a tractor along with two tanks: one each for seed and fertilizer. 'Planters' are similar implements used to sow larger-seeded crops (corn), placing seeds precisely in rows, one at a time.

Sprayers

Sprayers **carry tanks that contain pesticide, herbicide, or fertilizer** products diluted in water. Two arms called 'booms' extend out to the sides, where hoses draw product through nozzles that spray the crop.



Aerial Sprayers

Aerial sprayers are **airplanes or helicopters used to apply pesticides or fertilizers**. While expensive, aerial spraying is quick, does not disturb the crop, and eliminates biosecurity risks of moving equipment between potentially diseased fields. Most farmers hire a custom applicator to complete the job.

Spreaders

Spreaders are pulled behind tractors and used to **broadcast dry fertilizer, seed, or manure onto the field**. They consist of a box and a spreading implement like a conveyor belt or spinner.



Photograph by: Salford Group Inc.

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