

Midwest Growers' Interest in Electric Tractors & Autonomous Steering

Results from a short survey fielded at the 2026 Midwest Mechanical Weed Control Day in Benton Harbor, Michigan

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MSU Electric Tractor Transformation



Tasks respondents identified they were most likely to use an electric tractor for:

Weeding

Mowing

Spraying

Wagon pulling

77%

of farmers were interested in an electric tractor

82%

of farmers would pay the same or slightly more for an electric tractor

What interested farmers most about an electric tractor:

- Reduced fuel consumption
- Operational cost savings
- Quiet operation + reduced greenhouse gas emissions

What concerned farmers the most about an electric tractor:

- Long-term battery performance
- Battery maintenance and cost
- Operating capacity (time of operation)

Auto-Steering

Percent of farmers interested in an electric tractor equipped with steering-assist or autonomous driving

97%

Benefits of a tractor with auto-steering features?

- More effective weed management
- Reduced drudgery (attention and strain)
- Improved productivity

84%

 of farmers would pay slightly more for an electric tractor with auto-steering

Tractor's engine and gas tank are replaced by a 72 volt 3-Phase 25 kW (35 hp) AC-induction motor powered by four Hydro-Gear parallel Lithium-iron-phosphate batteries (25 kW-h)

Weeder & Smart Sprayer

MSU's electric tractor has a portable prototype attachment that replaces the usual gauge wheel with actuator-driven depth control for weeding disks, setting depth from crop and weed height rather than the soil surface.

100%

of farmers were interested in automated depth adjustment

100%

of farmers thought automated depth adjustment would improve weeding

76%

of farmers were interested in a smart sprayer system

Above results rely on 35 responses to a short survey developed and deployed as part of an MSU-AgBioResearch project funded by the Michigan Department of Agriculture & Rural Development (MDARD) Grant No. 240000003459 "An Autonomous Electric Tractor-based System for Precision Vegetable Crop Production." Research is ongoing. The results, views and opinions of the authors expressed herein do not necessarily reflect those of MDARD. Thank you to Paul Borgess for compiling, cleaning and analyzing survey data. For more information, contact Doug Bessette at bessett6@msu.edu or visit www.EnergyValuesLab.com