

Electrical Safety Checks

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Wet and damp conditions around a farm can lead to safety concerns when problems develop in electrical wiring and electrical equipment. Problems are not always out in the open where they can be recognized and fixed. Electrical problems can develop off-the-farm in the neighborhood that can result in tingles or shocks on the farm. When electrical problems develop, fault current can use the earth as a return path to its source. Electrical current flowing in the earth can create a condition called neutral-to-earth voltage, which can usually be easily measured.

The Dairy and Food Division of the Michigan Department of Agriculture in cooperation with the Michigan Agricultural Electric Council developed a program back in the 90's where on a periodic basis dairy inspectors make a voltage measurement from the milk tank to the milkhouse floor. This measurement usually can detect the presence of earth currents that may be caused by a wiring problem. If a value of 2 volts or more is detected, the dairy inspector records the reading on a flyer and gives it to the farm operator. On that flyer are telephone numbers of electric utilities in Michigan who can be contacted to conduct a **free on-site evaluation** to determine the source of the voltage. Electric utilities serving Michigan who are members of the Michigan Agricultural Electric Council have been given extensive training to identify sources of neutral-to-earth voltage.

Dairy inspectors are presently conducting electrical safety checks on all farms they visit until mid September. Over 900 dairy farms will be checked as a part of the routine dairy inspection. The Michigan Agricultural Electric Council recently met with the MDA dairy inspectors to answer questions and receive suggestions. They also inspected, serviced, and calibrated voltmeters that will be used for the electrical safety checks. On an approximate annual basis the dairy inspectors conduct electrical safety checks on all farms visited during a two month period. Out of the 900 plus farms inspected each time, about a dozen are found to have 2 volts or more measured from the milk tank to the milkhouse floor. On occasion a serious electrical safety problem is detected and quick action is taken to find and eliminate the source.

The Department of Biosystems and Agricultural Engineering thanks the dairy inspectors of the MDA Dairy and Food Division for being willing to conduct these safety checks, and to the Michigan Agricultural Electric Council for providing the electrical safety check test kits.



A utility representative assisting with the electrical safety check program answer questions at a recent regional meeting of the MDA Dairy and Food Division staff.