

Chapter E 168

LIVESTOCK IN FIELDS

E 168.01 Grounding of wire fences E 168.02 Breaking continuity of fence
E 168.03 Trees

Note: (1) The information on this subject is limited, but the best obtainable has been made use of in formulating the following rules. On account of the nature of the exposure it is not possible, of course, to eliminate the hazard entirely, but it is believed that if these rules are applied it can be much reduced.

(2) The loss of live stock by lightning is caused in large measure by herds drifting against ungrounded wire fences during thunderstorms and receiving a sufficient discharge to kill them, either from accumulated static electricity or from a stroke on the fence itself. The fences that give rise to the most trouble of this kind are those constructed with posts of poorly conducting material, such as wood or concrete. Fences built with metal posts set in earth are as safe from lightning as it is possible to make them, especially if the electrical continuity is broken as provided hereafter. Breaking the electrical continuity is very useful in that it prevents a lightning stroke from affecting the entire length of a fence, as it may if the stroke is direct and the fence continuous, even though grounded.

(3) Isolated trees in pastures where stock congregate seeking shade are also a source of loss. In pastures where shade is available from wooded areas of considerable size, isolated trees should be removed, or should be protected by suitable rodding as described in section E 168.03 below.

E 168.01 Grounding of wire fences. Where it appears desirable or necessary to mitigate the danger from wire fences constructed with posts of non-conducting material the following rules shall apply:

(1) **IRON POSTS.** Ground connections may be made by inserting at intervals galvanized-iron posts, such as are ordinarily used for farm fencing, and attaching in electrical contact all of the wires of the fence. If the ground is normally dry the intervals between metal posts shall not exceed 150 feet. If the ground is normally damp they may be placed 300 feet apart.

(2) **IRON PIPE.** A less expensive ground connection than subsection (1) may be made by driving a length of $\frac{1}{2}$ or $\frac{3}{4}$ inch galvanized-iron pipe beside the fence and attaching the wires by ties of galvanized-iron wire. The spacing shall be the same as for the posts under subsection (1) above.

(3) **DEPTH OF GROUNDS.** Pipes or posts shall be extended into the ground at least 3 feet.

History: Cr. Register, November, 1961, No. 71, eff. 12-1-61.

E 168.02 Breaking continuity of fence. In addition to grounding the fence its electrical continuity shall be broken by inserting insulating material in breaks in the wires at intervals of about 1000 feet. These insertions may be in the form of fence panels of wood or lengths

of insulating material to the ends of which the wires can be attached. Such lengths of insulating material may consist of strips of wood 2 x 2 x 24 inches, or their equivalent as far as insulating properties and mechanical strength are concerned.

History: Cr. Register, November, 1961, No. 71, eff. 12-1-61.

E 168.03 Trees. Where a tree is isolated and the vicinity is much frequented by livestock, the danger from lightning can be reduced by installing a single conductor extending from the top of the tree, to a distance of at least 6 feet into the ground.

History: Cr. Register, November, 1961, No. 71, eff. 12-1-61.