CONTROL OF TOMATO MILDEW.

TRIALS IN AUCKLAND DISTRICT, SEASON 1927–28.

Introduction.

AT the beginning of the present season a request was received by the Horticulture Division from the Auckland Tomato-growers' Association for a demonstration in the control of mildew on tomato-plants grown under glass in that district. It was stated that the trouble commenced about the month of October, and was so severe as to prevent the full crop being brought to maturity. This demonstration was carried out under the supervision of Mr. W. H. Rice, Orchard Instructor for the district, who furnishes the report which follows these introductory notes.

In the Department's bulletin "Tomato-culture," by W. H. Taylor, it is stated, "This disease is caused by a humid atmosphere and high temperature; the remedy is better ventilation." A survey of the glasshouses for tomato crops in the Auckland District showed a strange deficiency in ventilators in these buildings, and obviously without them adequate ventilation cannot be given. The ventilator equipment for a house 14 ft. wide in a cold climate is totally inadequate in a warm climate, especially when the house is widened to 30 ft. or more, and planted close with a tomato crop which in the month of October is more than half full of dense vegetation. Those were found to be the usual conditions in this locality. In a few instances the ventilator equipment was less, and in one instance observed a large house had been built for this purpose without ventilators of any kind. Obviously under such conditions some growers are making unreasonable demands from science in these days, and the sooner the position is realized the better.

Suitable ventilation depends on the number and size of properly placed ventilators. The requirements of this kind to be built into a house depend on the crop which is to be grown, the climate of the locality, and the size of the house. Cucumber-houses built 12 ft. to 14 ft. wide are often erected without any ventilators and work satisfactorily, although even they would be more easily operated with some available ventilation occasionally. The tomato crop, however, requires a dry, buoyant atmosphere especially, which makes the problem of ventilation quite a different one.

The warm humid climate normally prevalent in Auckland is naturally an important factor in the problem also. If in the South Island it is found necessary to have continuous ventilation along *both* sides of the ridge of the tomato glasshouse, in the northern districts one would expect the same, *only wider*. In addition to this the houses generally in the northern districts are wider and often larger in other ways. This may very probably be an economy, but in extending the measurements it should be remembered that the proportion of ventilator area must be correspondingly increased.

Suitable manures and culture, as Mr. Rice shows, increase the resistance of the plants to mildew in some degree, but relief in the main