

A Science Service Feature

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? WHY THE WEATHER ?

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SCREENING AGAINST FROST

The use of cloth coverings to protect fruit trees from frost has been tried in California, Oregon and elsewhere with unsatisfactory results. In calm air the minimum temperature on cold nights may be two to four degrees higher under the cover than outside, but with a moderate wind blowing there is little difference in temperature. On the other hand, coverings of rather heavy cloth laid directly over garden truck or other low-growing plants are effective in protecting against moderate frosts.

"In this case," says Floyd D. Young, frost expert of the U.S. Weather Bureau, "the heat of the ground is conserved by the cloth covering and the air movement is so slight near the ground that there is little tendency for the cold outside air to pass under or through the covering. The temperature of the surface of the cloth exposed to the sky is lowered by radiation and may fall to a low point, but as both the cloth itself and the air underneath are very poor conductors of heat, the temperature of the plants under cover falls much more slowly. The heat that has penetrated a few inches into the ground during the day is slowly conducted to the surface during the night and aids in keeping the temperature under the cover above the freezing point."

Unfortunately this process, like most other methods of frost protection, is rather expensive and the results may not always justify the cost. Thus at Kennewick, Wash., a few years ago a large field of strawberry vines was successfully protected from light frost by a cover of burlap, and neither vines nor blossoms appeared to be injured by the weight of the cover, but the cost of this protection amounted to about \$117 per acre per year; which, says Mr. Young, is almost prohibitive.

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