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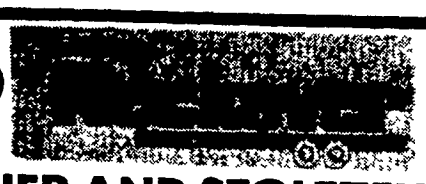
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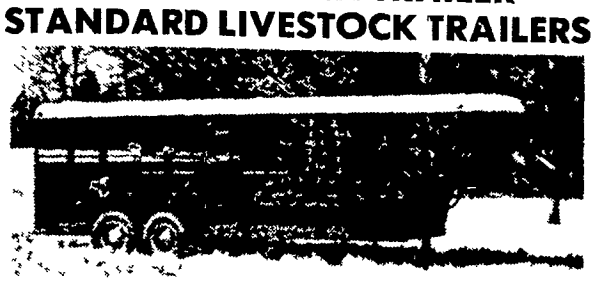
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Disease resistance studied in plants

NEWARK, Del. - Out of the very large number of pathogens which regularly bombard any plant in the environment, there may be ony a few which make it diseased. Why is the plant susceptible only to these few? And what makes it able to resist all the other pathogens to which it is exposed?

If scientists could come up with the answers to these questions, they'd be well on the road to developing a way to induce disease resistance in food crops - possibly through improved plant breeding or with the aid of some non-toxic resistance-triggering compound with otherwise innocuous effects on the environment. Either solution could have far-reaching benefits.

The first step in finding the answers is to learn more about the biochemical interactions between plants and bacteria. Plants are thought to have two ways of protecting themselves against disease: a general defense mechanism and a more specific form of immunity such as that found in certain resistant varieties of a crop. "We don't know exactly how this immunity works," says Dr. Myron Sasser, a plant pathologist at the Delaware Agricultural Experiment Station. "But when a pathogen attacks, there is a sudden collapse of the affected plant cell."

This hypersensitive reaction is thought by some researchers to be a defense mechanism which may be casually related to disease resistance. Sasser is looking for an explanation of the way this mechanism works, using bacteria on tobacco plants (the "white mice" of the plant lab).

Speaking before fellow plant pathologists at the recent annual meeting of the American Phytopathological Society in Tuscon, Ariz., the University of Delaware researcher described a study he conducted recently of the effects of 50 antibiotics on bacteria in relation to the triggering of the plant disease-resistance mechanism. Since different antibiotics are active at different stages of the infection process, and since some are active on bacteria while others are active on plants, these compounds can be useful tools in explaining how resistance works.

Sasser found both bacterial RNA synthesis and protein synthesis to be essential steps before the plant defense system can become operative. "The suggestion is rather strong," he reports, "that a bacterial protein causes the activation of the plant defense system, and that the bacterial protein is produced in response to some factor encountered in the nonhost plant."

The pathologist expects his findings to be useful to others studying disease resistance in plants. He is presently investigating one particular antibiotic from the group screened which appears to have a reversible effect on the resistance mechanism, and hopes to publish results of this work sometime next Spring.

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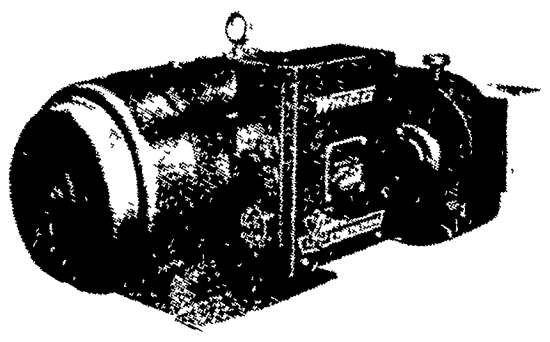
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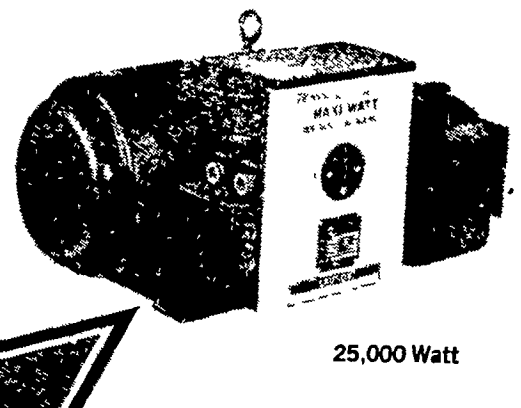
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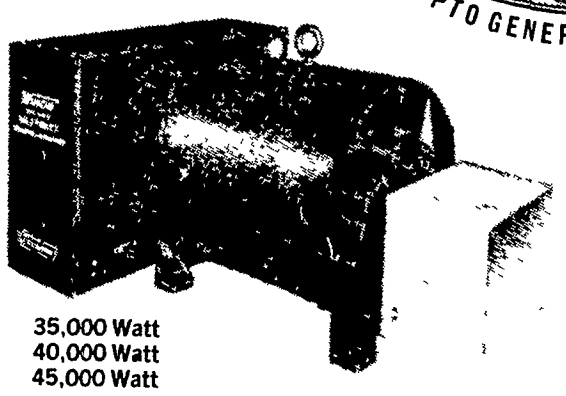
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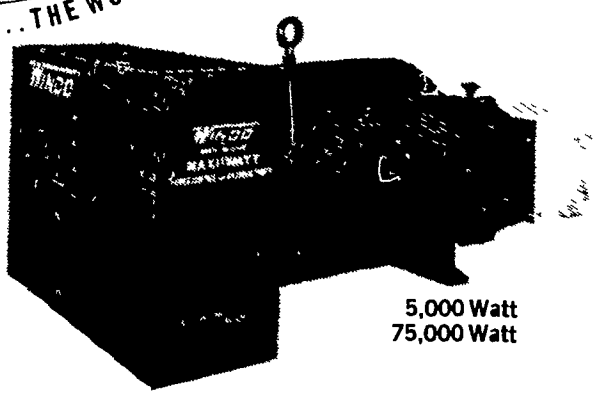
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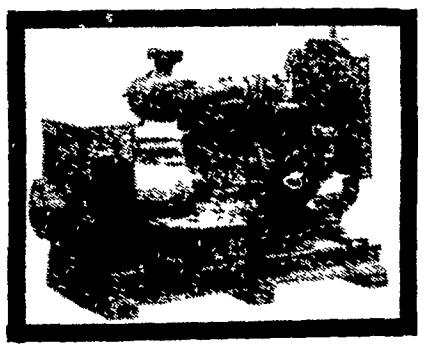
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Butler woman wins nat. Grange award

DENVER, Colo. – Debbie Phelan of St. John, Michigan, and a student at the University of Michigan, took top honors in the 1978 National Grange Sewing Contest. Miss Phelan was awarded $1000 by the National Grange women's activities department during the Grange's Annual Session being held November 13-20.

The Grange also announced the grand award winners of the 1978 Needlework Contest. The winners are Mrs. William Adamosky, Butler, Pa.; Helen Rewinkel, Orangevale, Cal.; Rose Weeks, White Swan, Wash.; and Edna Muran, Amsterdam, N.Y. They each received $500. Ten thousand entries were received in the 1978 National Grange Stuffed Toy Contest, all of which will be given to children's hospitals. First place national winners in the contest were (dolls, junior) Denise Brown, Metz, W.Va., (animals, junior) Tracey Walker, Pennside, Pa., (originality, junior) Michelle Murphy, Mouth of Wilson, Va., (doll, teen) Mary Jo Singkofer, Corvaillis, Ore., (animals, teen) Joyce Atoulikian, Parma, Ohio, (originality, teen) Laurel Rosene, St. Paul, Minn., (dolls, adult) Margaret Littleton, Lenoir City, Tenn., (animals, originality, adult) Ethel Shorn, Oak Ridge, Tenn. All three contests are open to both members and non-members of the Grange.

Mrs. Flo Carter of Elmendorf, Texas was selected Women's Activities Director of the Year.

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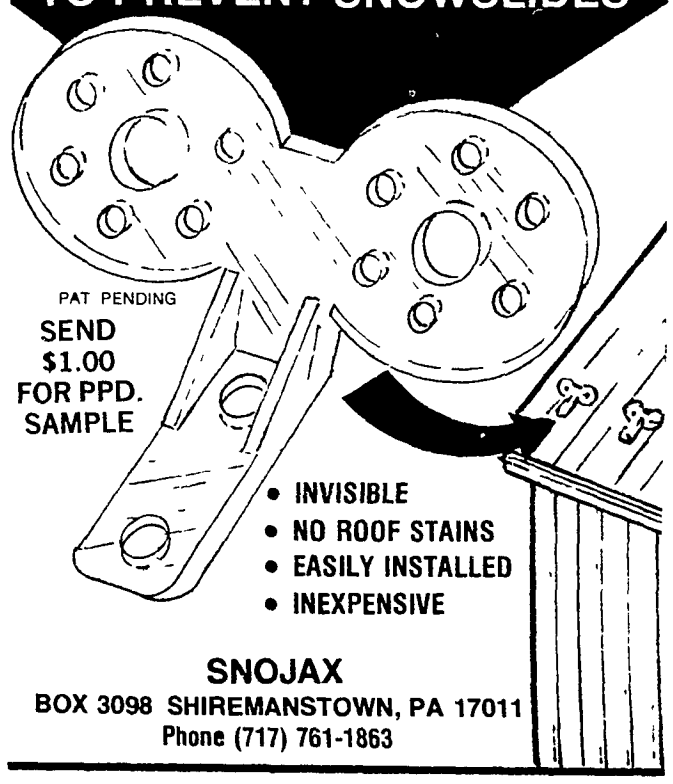
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