

# 'Little black box' warns of potato late blight

UNIVERSITY PARK — Agricultural scientists at the Pennsylvania State University have come to the aid of farmers by developing a "little black box" computer to forecast the spread of late blight disease of

potatoes. The blitecaster computer collects and analyzes weather data needed to recommend spray schedules.

Used in fields during July and August, the small

computer takes samples every 10 minutes of temperature, relative humidity, and rainfall. Blending the results with conditions known to create late blight epidemics, the blitecaster makes a "spray or no-spray" recommendation.

"Potato growers have come to recognize and fear the potential destruction of late blight on potatoes," declared Dr. David R. MacKenzie, scientist in plant pathology who directed the research.

Until recently, he said, weekly sprays of fungicides were applied in July and August to produce quality potatoes. Sometimes the sprays were applied needlessly. On the other hand, if a spray was skipped — and conditions were right — an epidemic of late blight could occur. Such epidemics cause severe damage to foliage, reduce potato yields, and create infection often causing potatoes to rot in storage.

MacKenzie predicted that demands for this and other uses of small computers in agriculture will increase tremendously in the next few years.

He described the

blitecaster as a self-contained, battery operated "electronic marvel" that can be asked questions at any time simply by pressing a button. All daily weather facts are accumulated, digested, analyzed, and automatically interpreted — giving a spray recommendation shown on lights.

The original model of the blitecaster was developed under MacKenzie's direction by undergraduate students in electrical engineering and computer science. The students produced a miniature device that accepted more information than was considered possible. They attached a \$50 cassette tape recorder to use as the "tapedrive" for storing program instructions.

"The technology even baffled experts in the companies that were supplying component parts," MacKenzie commented. "One engineer said the plan was impossible to develop. Ten days later the students had completed their task at a cost of \$72 for parts."

For more information on the blitecaster, contact Dr. MacKenzie, plant

pathologist, The Pennsylvania State University, College of Agriculture, University Park, Pa. 16802.

## WHAT'S NEW

### ROUND BALER

A new, large round baler that was successfully field-tested during the 1977 and 1978 hay seasons is now available from Massey-Ferguson. Replacing the MF560 round baler, the new MF1560 baler incorporates design improvements to enhance performance and overall safety.

At the front, the baler is equipped with a tee hitch for tighter tractor turns, without tire interference, than with the conventional "A"-frame design. The hitch assembly is adjustable for varying tractor drawbar heights.

The MF1560's power take-off is fully shielded for operator protection and trash exclusion. The main gearbox is reversible to allow use of the baler with either 540 or 1000 rpm PTO tractors.

The pickup is a full "stripper-type," with turned-up lips on the stripper for leaf retention. Pickup rpm has been reduced by over 50 per cent for quieter operation and easier hay handling. The pickup "swept" width is increased

from 55 in. to 59 1/2 in. to improve windrow infeed.

Automatic disengagement of the pickup is standard. This prevents overfilling the bale chamber. Press rolls have been eliminated with a new "open throat" design to improve handling of dry cornstalks and reduce fire hazard.

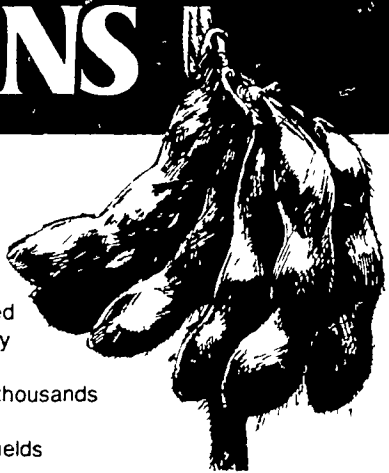
Twine wrapping is hydraulically controlled from the tractor seat. This standard equipment is especially convenient for operators inside cabs.

The MF1560 can produce full 6-ft.-diameter bales, an increase of 12 per cent in volume over the MF560. Variable hydraulic tension has been added to the usual spring-controlled density. The two systems work in conjunction. The hydraulic portion is gauge-monitored and controlled from the tractor seat. This allows "soft" or "dense" bales as desired.

For simplicity and convenience, the chamber is locked during baling with double tailgate locks. Also, each tailgate cylinder circuit is hydraulically lockable for safety and convenience.



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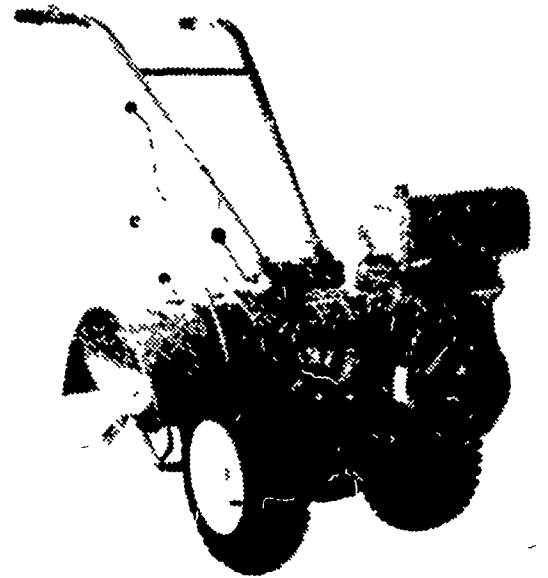
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