

USDA Researchers Find Oats Resist To Race 264 Crown Rust Disease

Eleven strains of cultivated oats that carry genetic resistance to one of the most virulent of five new races of crown rust menacing the Nation's oat crop have been discovered by U.S. Department of Agriculture scientists, the Department announced today.

These strains are known to have resistance to Race 264 crown rust and may also prove resistant to other new races. Their discovery, say USDA oat specialists, considerably brightens the outlook for development of commercially suitable resistant varieties during the next few years.

Appearance of the five new rust races in Florida and southeastern Georgia last spring caught oat producers with commercial varieties susceptible to one or more of the rusts.

FEDERAL-STATE OAT breeders were in a similar predicament, with no adequately resistant plant material, except wild varieties that are difficult to cross with cultivated oats. Added cause for alarm was the finding, later in the season, of the same rare or previously unknown races of crown rust in several northern States.

Discovery of the resistant oats was the result of an emergency program undertaken cooperatively last winter in Puerto Rico by USDA's Agricultural Research Service, the Federal Experiment Station at Mayaguez, and the Puerto Rico Agricultural Experiment Station at Isabella.

ACCORDING TO Dr. H. C. Murphy, who directs the national program of oats research for USDA at the Department's Agricultural Research Center, Beltsville, Md., seed of the resistant stock has been distributed to about 75 plant breeders and path-

ologists in the United States and Canada. Dr. Murphy recently brought seed of these resistant lines from Puerto Rico to Washington by air to make sure that breeding work to develop new resistant commercial varieties could be started at the earliest possible moment.

Seed of more than 4,800 different oats were assembled by D. J. Ward, in charge of the USDA World Oat Collection at Beltsville, and sent to Puerto Rico last year. Of this total, 3,573 represented entries from the World Collection of cultivated and wild oats. The remainder, more than 1,200 entries, were submitted by oat breeders in the United States and Canada as experimental stock. Seed from the experimental entries that were found to be resistant was sent only to the breeders who had developed them.

OUT OF THE World Collection came 36 resistant kinds, including 27 cultivated oats and nine wild types. The 27 cultivated kinds fall into 11 resistant oat strains, each apparently possessing a different basic genetic source of resistance to Race 264 crown rust. It is expected that most, if not all, of these 11 strains will be resistant also to the four other dangerous rust races.

Experimental entries included some promising derivatives from crosses involving those resistant stock from the World Collection.

It was possible in the Puerto Rican nurseries to grow and test oat plants for rust resistance during the 1957-58 winter season. Selecting resistant lines for harvest was a simple matter, since only the resistant varieties produced seed.

All the varieties grown in the

4th Annual Feeder Calf Sale to Be Held Nov. 1

The Fourth Annual Feeder Calf Sale will be held Saturday, Nov. 1, at the Lancaster Union Stock Yards, according to Walter M. Dunlap Jr., sale secretary.

Entries are being accepted from breeders of purebred beef cattle from Pennsylvania and adjoining states.

Puerto Rican tests were artificially inoculated with Race 264 rust by Drs. Thomas Theis and Lucas Calpouzos of the Federal Experiment Station at Mayaguez. Dr. Theis also made preliminary rust readings. The Race 264 rust used for the inoculations was purified and increased at Ames, Iowa, by Dr. M. D. Simons, pathologist in charge of crown-rust investigations for USDA.

DR. MURPHY at Beltsville doubts whether any of the resistant strains found in the tests represent new oat varieties as such. They should, however, prove of great value in the breeding and development of agronomically superior resistant varieties which will meet commercial demands for high-yielding types.

Development of new varieties, Dr. Murphy explained, would take as much as 10 years by conventional breeding methods and pedigree selection. But through back crossing, resistant varieties could be ready for growers in about six years or less.

Puerto Rico was chosen as a location for the Race 264 test because oats are not grown commercially on the island. Also, its isolation makes it highly improbable that windborne spores of dangerous rust races used there experimentally would reach oat-growing areas in the United States. Transport of spores by wind is the principal way crown rusts and similar plant pathogens are spread.

Lancaster Farming, Friday, May 30, 1958—7

Maneb Best Control for Potato Blight According to Penn State Trials

Maneb stands out as the most desirable fungicide for control of early and late blight of potatoes, in tests by the Agricultural Experiment Station at Pennsylvania State University. Harry C. Fink, plant pathologist for the Station, says use of maneb gives consistently high yields.

Dr. Fink urges potato growers to try Manzate, M-22, and Dyrene on small plots to see if they like them as alternates to their present sprays. M-22 and Manzate

have the same active ingredients, he explains. Dyrene is now used to some extent in other states.

The three seasons of 1955, '56, and '57 were excellent for screening of potato fungicides, Dr. Fink says. In 1955 there was relatively little disease making it possible to study plant injury. Late blight was prominent in 1956. Early blight was common in 1957.

In 1955, ten fungicides were tested. The most promising were

Material	Bushels per Acre Yield	Plant Injury
Manzate	164	none
Captan	162	foliage yellow
Copper-zinc	165	none
Dyrene	143	leaf burning along veins
Fixed copper	115	foliage yellow

Maneb was far the superior fungicide tested in 1956, Fink reports. Dyrene was also better than check plots or the standard fixed copper spray.

In 1957 maneb sprayed plots

showed no defoliation while M-22, Dyrene, and fixed copper sprayed plants had only slight defoliation. F-14 showed moderate defoliation. Plants in healthy foliage left by September 1.

28 Pennsylvania Holsteins Go To Mexico

28 registered Holstein heifers from Pennsylvania were included in a recent shipment to Mexico.

20 of the animals were from Mapoval Farms at Milan. The balance were selected from the herd of C. S. Chaffee and George N. Keis at Ulster.

The transplanted Holsteins were purchased by two Mexican

dairymen and are now grazing their new pastures.

Since most dairy cattle in Mexico are of Holstein origin, the continuing upswing in demand for fluid milk there has created a big market for quality seed stock from this country.

The Holstein Friesian Association of America reports that 1,510 registered animals officially transferred to new owners in other countries last year, 628 went to Mexico. An additional 399 crossed the border during the first four months of 1958.

DOLLAR

Experiment Stations Conclude

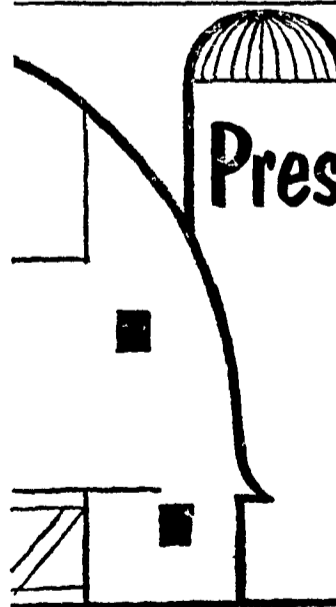
You Save from \$3.00 to \$15.00

for every \$1.00 spent in applying Limestone

MARTIN'S LIMESTONE

Ivan M. Martin, Inc. Blue Ball, 1011e Hill, Hilliest 5 3455
New Holland, EL-in 4 2112

DAYS



Ful-O-Pep High Sweet Blend Preserves Better Grass Silage

Grass silage is easy to preserve when you use Ful-O-Pep High Sweet Blend. New High Sweet provides plenty of sugar necessary for good fermentation . . . and is easy to handle — not messy and sticky. It prevents seepage . . . adds nutrients to your silage. Ful-O-Pep High Sweet Blend makes a silage that is tasty and nutritious . . . and sweet and clean. It's economical too, so try it on your next silage crop.

George Rutt
Stevens R. D. 1, Pa.

Grab Supply
Elizabethtown, Pa.

Millport Roller Mills
Lititz, R.D.4, Pa.

J. C. Walker & Son
Gap, Pa.

H. M. Stauffer & Sons, Inc.
Leola, Witmer & Ronks, Pa.

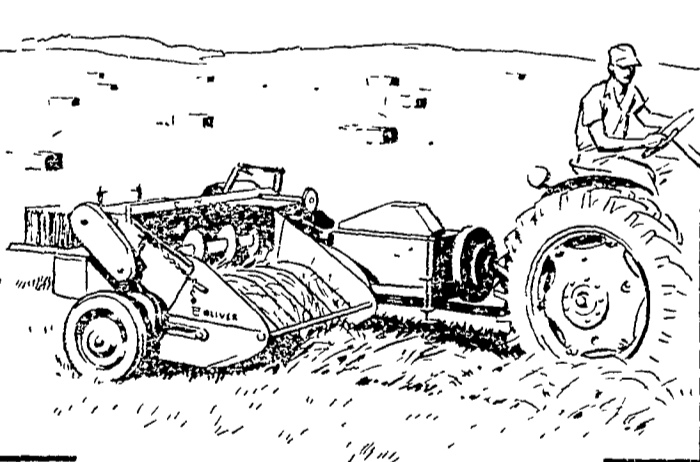
D. W. Hoover
East Earl, R. D. 1, Pa.

S. H. Hiestand & Co.
Salunga, Pa.

OLIVER 60-T and 60-W

Twine-Tie and Wire-Tie BALERS

All-Around Tonnage Champs with "Pivot-Balanced" Drive



Match a new Oliver—twine-tie or wire-tie—with any other machine in your small rough patch-pattern fields. There's where it gobbles up the windrows, bales up to ten tons per hour as easily as on the straightaway.

You get Oliver's exclusive "pivot-balanced" drive and exceptionally short coupling. Just follow the windrow with the rear tractor wheel—even around the sharpest corner. Your Oliver gets the hay . . . saves hours of time when time counts most.

Here are balers with every thing new. Leaf-saving pickup swinging drawbar for safe transport . . . overrunning clutch (extra) . . . protective devices for all important units. You can adjust bale length in seconds—from 12 to 50 inches. Twine- and wire-tie units are easy to interchange and an engine (extra) is easy to mount when desired.



Chas. J. McComsey & Sons
Hickory Hill, Pa.

Farmersville Equipment Co.
Ephrata, RD. 2

J. B. Lapp
Atglen

N. G. Hershey & Son
Manheim, RD. 1