

## Treadless Tires Show Up Well In USDA Tests

An experimental treadless tractor tire has outperformed a regular tractor tire by 40 per cent under average operating conditions, in tests conducted by U S Department of Agriculture engineers.

The smooth tire was also 14 per cent more efficient in converting axle power to drawbar power. Except for the absence of treads (lugs) the tire looks like any other tractor tire. It is constructed differently, however, and these construction differences contributed to the tire's improved performance.

The experimental tire has radial ply construction that is, the cords (fabric) in the tire casing are constructed in parallel layers across the tire (at right angles to the direction of travel). In a conventional tire casing, the cords are in diagonal layers.

The tread base of the smooth tire is flatter than the round, nearly circular tread base of a conventional tire, and the rim width is narrow—3½ inches. Rim widths of conventional tires range from eight to 15 inches. The tread base of a tire is the area on the casing to which the tread is attached.

Dr. Glenn E. Vanden Berg and Irvin F. Reed, engineers of USDA's Agricultural Research Service, tested the tires at the National Tillage Machinery Laboratory, Auburn, Ala. They think one reason the experimental tire outperformed the conventional tire is that it has a more stable casing and therefore makes more uniform contact with the soil. The engineers also believe the flattened tread base and narrow rim improve performance through better distribution of weight over the soil.

One test on firm soil compared experimental treaded and smooth tires with regular tires. The experimental tire with treads performed 27 per cent better than a standard tractor tire of the same size. A similar experimental tire with the treads buffed off performed 41 per cent better than the standard tire with treads. Both experimental tires had radial ply cords, narrow rim, and a flattened tread base. Only the traction was evaluated—not the wear or the cost of the tires.

According to Dr. Vanden Berg and Mr. Reed, treads are essential for pulling on slick

## Borer Losses Least Since '52 Report Shows

Losses from the European corn borer were down in 1961.

The U S Department of Agriculture reported today that the corn borer destroyed 65 million bushels of corn last year, costing the American farmer \$69 million. In 1960 the borer destroyed 103 million bushels of corn, at a loss to the farmer of \$96 million.

The 1961 bushel loss from the borer was the smallest it has been since 1952.

These figures are in the Cooperative Economic Insect Report issued today by the Department's Agricultural Research Service. ARS makes sample counts of live borers on field corn every fall. Last fall agricultural agencies in 17 corn producing States helped with the survey.

ARS scientists say it is hard to attribute the decrease in borer losses to any one thing. Increased use of resistant varieties of corn, weather conditions unfavorable to growth of the borer and, in some States, an increase in the number of parasites of the European corn borer all contribute to lessening damage. In Kansas, for example, 13 per cent of the corn borers were infested with the tachina fly parasite in 1961, only 4 per cent were infested with this fly in 1960.

In Pennsylvania the ARS samplers estimated 1,448,000 bushels of corn worth \$1,767,000 were lost to the pest. But the borer's food and lodging are not his only expenses. His presence causes greater production and harvesting costs. It also makes expensive control materials necessary.

Biggest loser among the 17 states sampled was Iowa with an estimated 25,228,000 bushels loss. Illinois had the dubious honor of ranking second with a 11,488,000 bushel loss.

surfaces such as heavy grass, straw mulch, or mud, but treads as big as those on conventional tires today may not be necessary for general farm use.

If the findings of this research hold up, the engineers visualize future tractor tires that will feature radial ply construction, flattened tread base, narrow rims, and modified treads for optimum traction in both routine and heavy pulling.

## Breeding Co-ops Show Growth

University Park, Pa.—George L. Carlson, Turtlepoint, president of the Pennsylvania Association of Artificial Breeding Cooperatives, today forecast that this farmer owned and operated service will embrace more than half of the state's million dairy cows in 1962.

In 1961 the total reached 488,575 up three per cent from the year before. Since

1942 when this program got underway in Pennsylvania with a total of 225 cows bred, the volume of work has increased each year. The grand total of cows bred through cooperative studs the first 20 years reached 5,216,575.

These summaries were presented at the recent annual association meeting at the Pennsylvania State University at which Carlson was reelected. Others named with him were Abner H. Risser, Bannockburn, vice president, and Lewis Williams, Uniontown, R.

D. 2, secretary-treasurer, Geo. B. Butler, Wellsboro, R. D. 2, and Wilmer M. Hill, Slatington, directors.

Frederick G. Foreman, of Meadville, R. D. 2, senior in dairy science at the University was presented with the association's Clyde N. Hall memorial award in recognition of excellence in student dairy judging.

Consolidation of the five independent member ABC cooperatives into one state-wide organization was debated from the floor but no action taken.

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