

Tractor Traffic

Large urban sprawls and old MacDonald's farm have a lot in common these days—they both have traffic problems.

On the farm, it isn't the noise, the number of vehicles, the scattering of tires, or the crash of fenders. Rather, it's the increasing weight of the tractor and its many trips across the fields.

Evidence shows that heavy tractor traffic compacts the soil, retards root growth, and reduces yields.

To avoid these problems, agricultural engineers are seeking ways to seed without mechanical soil preparation or to at least reduce traffic by proper equipment control.

The most common system for planting row crops in this county is to plow with a moldboard plow, disk harrow two or more times, and plant. During the harrowing operations, the harrow and the wheels of the tractor recompact the soil without regard to the location of the rows. Often rows are planted

directly over wheel tracks. After the crop is planted, sprayed for weed and insect control, cultivated, and harvested as much as 70 percent of the soil surface is often compressed by traffic.

A 3 year study at Auburn, Ala., by MRS agricultural engineer A. W. Cooper, soil scientist A. C. Touse, Jr., and agricultural engineer W. T. Dumas of Auburn University pointed out the seriousness of compaction.

In the fall, a test plot was tilled to a depth of 18 inches and bedded. Areas where the wheels ran were untilled, but the soil was tilled in every other inter-row space. In the spring, cotton was planted and later compared to cotton in adjacent plots where the entire surface was plowed 6 inches deep and disk harrowed.

Roots penetrated farther in the deep-tilled plots and the yield was greater by about 400 pounds of seed cotton.

Some considerations that agricultural engineers at Auburn keep in mind when making rec-

ommendations for designing and using farm equipment are:

- Wheeling equipment should have rear wheels that move in the same path as the front wheels;

- The width of the wheel path, the weight of the equipment, and the number of passes should be minimized;

- The area treated by the operation should be maximized;

- All units should follow the same path throughout the season;

- Fixed travel paths should be used year after year and not plowed.

Cooper says that if traffic can be controlled, seeding without other mechanical preparation can become a reality in some soil types.

The advent of automatic guidance systems will hasten the day when it will be possible to limit tracks through the field to little more than the width of the wheel.

Fire Prevention Stressed By NSC

Each year, according to National Safety Council statistics, farm fires result in the loss of 500 lives and \$200 million in property damage.

The Council particularly stresses prevention of farm fires since fire damage to farms and rural property is three to six times greater than in the average city fire.

Jack Burke, a program specialist in the Council's Farm Department, explains that it takes longer for fire fighters to get to the scene than it does in the average city.

A common problem on farms, according to the safety specialist, is clutter.

"Stuff piles up or is strewn about, offering an open invitation to fires—not to mention falls, cuts, bruises, shocks, splinters, and poisonings," Burke says. Preventive measures, Burke

says, are relatively simple if done routinely.

- Keep buildings free of unneeded combustible material, and accumulations of chaff, straw and dust.

- Rid the farmstead of dry weeds, brush and old lumber.

- Keep paint rags in metal containers.

- Store farm fuels 40 or more feet from buildings.

- Keep small quantities of fuels in sturdy, well-marked metal containers.

- Burn rubbish at a safe distance from buildings and other combustibles, and only when the wind is calm.

- Check electrical systems and make necessary repairs.

- Watch smoking in buildings.

- Check daily the temperature of newly stored hay.

- Place portable heaters away from anything that could catch fire.

- Place fire extinguishers in buildings, and on tractors, self-propelled harvesting machinery and trucks.

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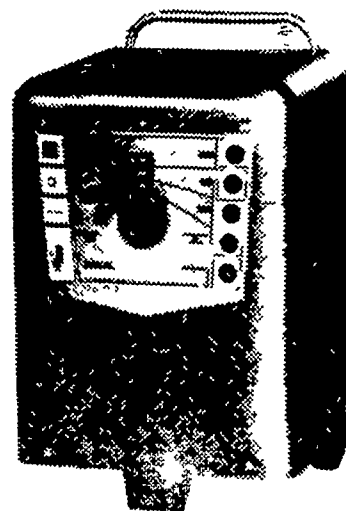
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