

How good are Delaware soils?

NEWARK, Del. — Though today's farmers use \$50,000 tractors instead of forked sticks, they still rely on the age-old agricultural basics—sun, water and soil.

To the average city person, soil may be just dirt, but to Delaware Extension soils specialist Leo Cotnoir, Jr. soils are complex bodies with many interrelated chemical, physical and biological properties.

Just how good are Delaware soils? According to the specialist, three soil properties are useful guides to the overall nature of the soils in the state: surface texture, drainage, and moisture-holding capacity.

The soil surface is important because it's the part of the soil in which most of the plant roots grow, and the part which farmers work and treat with lime and fertilizer. Furthermore, in

Delaware surface texture is usually a fairly good indicator of the underlying soil horizons which may be important to plant growth.

Two-thirds of Delaware soils are sandy, including almost all soils in Sussex County. New Castle County soils are primarily loam or silt loams, while Kent County, in between, is split almost equally between sandy and loamy soils.

Almost one-third of Delaware soils need artificial drainage. Poor drainage in the state is largely the result of high water tables due to low-lying topography. Most of the state's poorly drained soils can easily be drained by lowering the water table. This is largely a matter of providing outlets for field drains, which requires region-wide or watershed-wide programs.

New Castle County soils are mostly well drained, and Kent County soils are divided fairly evenly between those that are well drained and those that are poorly drained. In Sussex County, about one-third of the soils need artificial drainage, while another third are excessively drained.

Perhaps the most common limiting factor to crop production in Delaware is water. The water which is available to plants for crop growth depends on the amount of rainfall and the ability of the soil to retain water.

Delaware soils are about equally divided between those with high, medium and low moisture-holding capacity. New Castle and Kent County soils have mostly high or medium

water-holding capacity, half have medium.

Another way of looking at the state's soils is with the Land Use Capability Classification system, which had been used extensively in the United States for over 30 years. In this system, soils are rated in eight classes and three subclasses on the basis of potential hazards to land use and crop production. Class I land is suitable to all cultivated crops with few or no limitations or restrictions. Soils in Classes II to VIII have increasingly serious hazards to crop production, with Class VIII soils being unsuited for any agriculture. The subclasses indicate the nature of the hazard, such as erosion (subclass e), poor drainage (subclass w), or excessively sandy, droughty soils (subclass s).

Only nine percent of the

state's soil acreage is considered Class I, of which 11 per cent is found in New Castle County, 39 per cent in Kent County and 50 per cent in Sussex County. But fully 85 per cent of the state's acreage is in Classes I to IV and suitable for cultivation. Most of the land falls into Class II (requiring moderate limitations on use that reduce choice of plants or that require moderate conservation practices) or Class III (severe limitations on use that reduce choice of plants, require very careful management or both). Eighteen per cent of the state's soil acreage is in subclass e, 20 per cent in subclass s, and almost half in subclass w.

In general, Cotnoir says, Delaware soils are easily worked and can be used for the production of any crop for which there is a demand and an adequate financial return. From the point of view of soil fertility, all Delaware soils need lime

and fertilizer. These, however, are easily and economically applied. Furthermore, the utilization of applied fertilizers on Delaware soils is generally high.

Water is the most important factor in using Delaware soils, either too much or not enough, often on the same soils. That is, many acres of Delaware soils can't produce competitive and profitable yields of crops such as corn without additional water applied as irrigation. By the same token, many acres of Delaware soils are too poorly drained for satisfactory cropping without artificial drainage. Many of the soils which have excess water in the spring and which must be artificially drained lack adequate water in the Summer and require irrigation for optimum yields.

According to Cotnoir, it's likely that the agricultural future of the state rests largely on our ability to solve the water management problem.

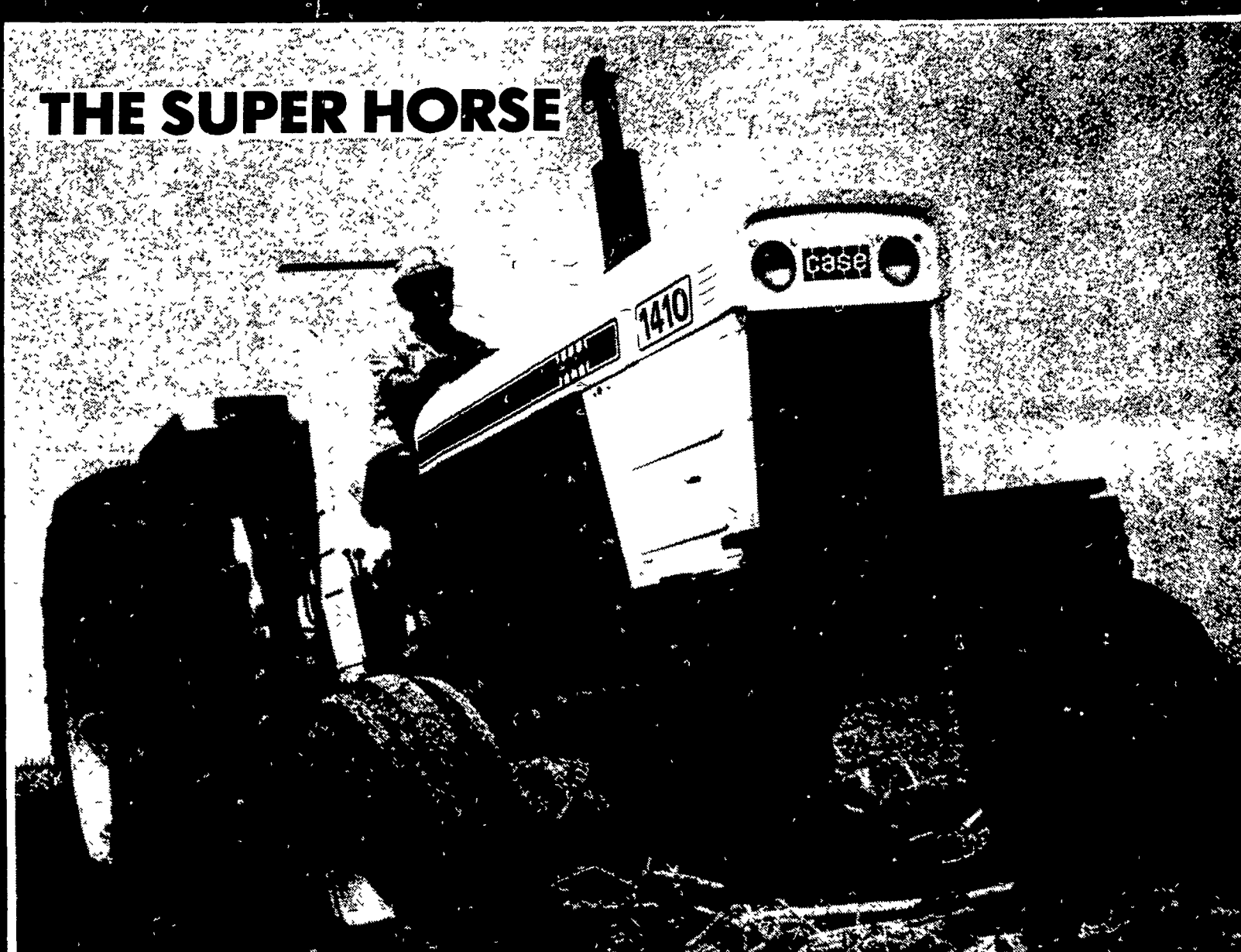
Water management isn't only a matter of drainage or irrigation, he says, but a total program which includes efficiency in the removal, delivery and use of water.

Sheep meeting set

LANCASTER — Dr. Clair E. Engle, Penn State Extension sheep specialists will speak on sheep management, feeding, lamb care and other related subjects on April 2, 8 p.m. at the Farm and Home Center, Lancaster.

All interested persons are welcome to attend.

Songwriters say it's "raining violets" in the springtime. According to the April Reader's Digest, other names for rain vary depending on geography. Here are a few: dam-buster (Alabama), leak-finder (Wisconsin), stump-washer (South Carolina) and tree-bender (Massachusetts).



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