

tinuous corn. Let's examine evidence from America's oldest experiment field, the Morrow Plots on the University of Illinois campus.

During 19 years the plots grew continuous corn, the corn oat rotation and the corn, oats, clover rotation and produced corn yields of 40, 53 and 69 bushels per acre, respectively. The superiority of the corn oats clover rotation is primarily the result of the inherent ability of the well inoculated clover to fix atmospheric nitrogen for use by the corn plant.

Soil tilth in the plots where corn has been growing continuously without soil treatment is notably poor compared to the corn, oats clover rotation. The decline of organic matter on the untreated plots since 1904 was 40% in continuous corn, 23% in corn-oats, and 20% in the corn, oats, clover rotation. Even on the treated plots the decline in organic matter was somewhat greater in the continuous corn plots than under the other two cropping systems. The decline in nitrogen content on untreated soil was greater with continuous corn than with the corn-oats and corn-oats-clover systems. In other words it appears that a good crop rotation is superior to corn monoculture.

It is interesting to note in the new series of work begun at the Morrow plots previously untreated corn yielded 33 bushels per acre in 1954 yielded 86 bushels per acre in 1955 and 113 bushels in 1956 after fertilizer treatment. In the treated corn oats clover plots no yield increases were apparent and it follows that the combination of

Harold Steele, Dover, Illinois, used to buy corn for feed when he followed a four-year rotation plan back in the mid-fifties. Now he is carrying more livestock and growing all the feed he needs for 2,000 head of hogs a year plus 100 to 250 head of cattle on feed, and last year for the first time he had a surplus of corn to sell.

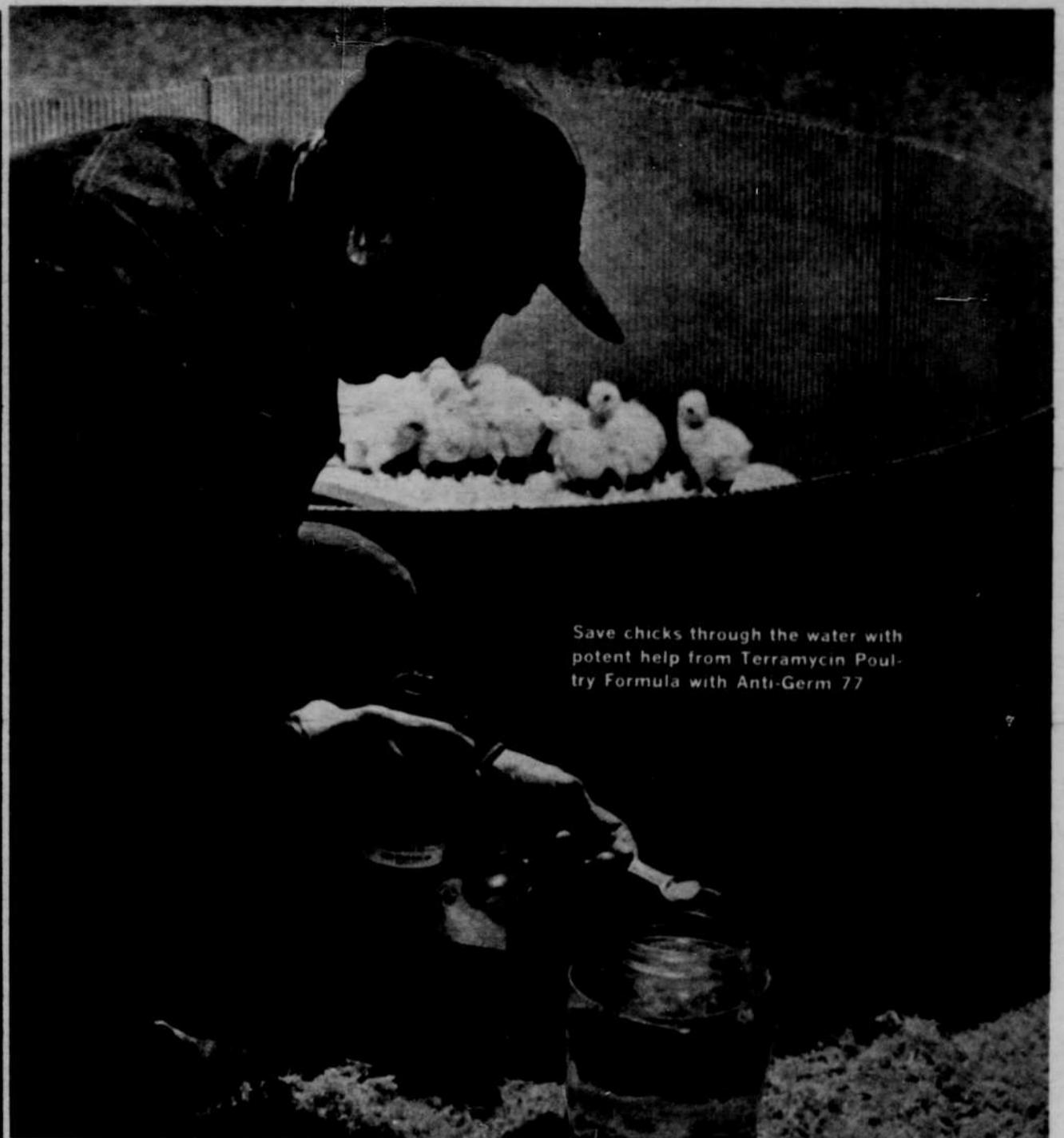
Romelos Bradley farms a half section of land near Sheffield, Illinois, and it is all in corn. In 1958 Bradley made an average of 110 bushels per acre on 240 acres. He says, "Yields can be maintained or improved with continuous corn if we use enough fertilizer and keep weeds and insects under control."



a good rotation and a high fertility program maintained fertility. High nitrogen rates have failed to maintain yields as high in continuous corn as have been obtained in rotation corn. At Iowa State College, yields of continuous and rotation corn have averaged about the same at six locations over the past six years. In another experiment, one set of plots has been in continuous corn since 1915 but when adequate fertilizer was applied starting in 1952 yields on those old continuous corn plots shot up to levels as high as the rotation corn.

Continuous corn should never be grown on steep or rolling lands. It is feasible only on level or nearly level fields of medium textured soil and on slopes of more than two percent it is advisable to adopt such practices only after careful study has been made of erosion problems. It would be extremely unwise to grow continuous corn on slopes of more than 5 percent even under any conditions. Such fields should be kept in meadow or a good long rotation.

It should be remembered that some yield losses can be sacrificed in continuous corn plots since the net return on the rotation plots may be lowered because of the effect



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of the non-cash crop. Many farmers will continue to prefer continuous corn even though they will sacrifice yields in favor of a higher profit under a more intensive cropping system. In many cases this choice is entirely feasible and perfectly logical, however, you should be constantly alert for these danger signals. (1), the power to plow the plow may be greater each year because of increased soil compaction. (2), the field will be slow in drying which in turn delays spring plowing. (3), soil tilth becomes poorer with plotty soils difficult to work. (4), yields may decline noticeably even though adequate fertilizers are applied. And (5), the field dries more slowly after rains so the resulting delay in cultivation.

If any of these danger signals manifest themselves, you should consider revising your cropping system to restore a favorable soil physical condition and productivity level. Should you grow corn after corn every year? The choice is yours, but in any case, don't jump into it with your eyes shut. Remember your soil is the most valuable asset you have in your possession.

Corn yields with old and new treatments

TREATMENT	CONTINUOUS CORN 1955-1959
NONE	33
LNPK(New)	98
MLP(Old)	87
MLP and NPK	116
TREATMENT	CORN - OATS 1955, 1957, 1959
NONE	46
LNPK(New)	104
MLP(Old)	109
MLP and NPK	107
TREATMENT	CORN - OATS - CLOVER 1955, 1958
NONE	63
LNPK(New)	124
MLP(Old)	120
MLP and NPK	122