It Still Pays to Farm Well

By H. W. Mumford

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Farmers are coming to realize as never before that their interests extend beyond the line fences of their individual farms. They are conscious that their own welfare is inseparably associated with the welfare of other farmers. They are rapidly coming to recognize that there are regional and national aspects of agriculture as well as those of the individual farm, county, or state. They are showing greater interest in and better understanding of the relation of tariffs and of imports and exports to their business.

This broadening of horizons constitutes one of the most hopeful signs of the present difficult situation, for when farmers generally come to a full realization of their interdependence and learn to work and plan together, a long step forward toward agricultural betterment will have been taken.

This consciousness of interdependence is a tendency in the right direction. It carries with it, however, a danger that individual farmers may lose sight of the fact that there are certain elements that make for success in farming for which they must themselves be responsible and certain tasks that no one else will or can do for them.

Essential Part of a Larger Program

I shall make no attempt to prove that to farm well, even if practiced by all farmers, will solve all the economic and social problems either of the individual or of agri-
culture as a whole. On the contrary, I maintain that farming well is only one part, tho an absolutely essential part, in a seven-point basic program on which the welfare of farmers and their families depends, namely—

1. Individual efficiency—that is, farming well.
2. Broadening the market for farm products.
3. Organization among farmers, and greater community consciousness.
4. Appreciation of farm life as a desirable mode of living without large accumulation of wealth.
5. Appreciation of the interdependence of agriculture and industry.
6. Wise governmental policies affecting agriculture.
7. The encouragement of agricultural education and research.

At the outset I would make clear my conviction that agriculture cannot advance as it should unless there are coextensive advances in all the various parts of this basic program. I should therefore like, before considering the main theme of my paper, to point out briefly the bearing of each of the other points upon the general welfare of farmers and farming.

Broadening the market for farm products

One important phase of the solution of the problems with which agriculture is at present confronted is the development of wider markets for the products of the farm. This does not mean wider markets geographically, but economically,—that is, the development of a greater variety of uses for the same raw materials, coupled with the possible supplanting of some of the present products by others having greater intensity or diffusion of use. A knowledge of agriculture, industry, and the physical and social sciences all must be commanded in the searching out of possibilities in this direction.

An example of the work that has been done at the Illinois Experiment Station toward this end is that on the
use of soybean oil in paints. Approximately 36 million pounds of soybean oil was produced from the 1930 domestic crop. Altho the oil has a wide range of possibilities for utilization, the more desirable outlets have been somewhat restricted. One of these outlets may be broadened as a result of experiments in which approximately 50 kinds of paints, differing in amounts and kinds of soybean oil and driers, are being tested.

The Illinois Station has pioneered in investigating the possibilities of new crops adapted to corn-belt conditions—crops that might, to some extent, substitute in the rotations for some of the major crops now tending to be produced in excess of a profitable market. The rapid rise of the soybean crop to prominence both agriculturally and industrially serves to illustrate the possibilities in this field of research.

There is another angle to this problem of broadening markets. It is that American farmers must find ways to keep their costs down if they are to be successful in efforts to increase the outlets, domestic or foreign, for their products (see pages 18-19). This is especially true in connection with greater industrial utilization.

**Need for organization among farmers and greater community consciousness**

Tho the need for organization among farmers is generally recognized, and farmers have made valuable gains by its use, it still is true that only a discouragingly small percentage of farmers are effectively organized. There is encouragement, however, in the fact that the relatively small proportion who are organized exert a marked influence thru their support of agricultural institutions and their watchfulness with reference to governmental policies affecting farmers. It is well that progress toward effective organization is finally being made, for
there is no industry in the country more helpless than an unorganized agriculture, and not until farmers more universally appreciate and utilize the principles of group organization can they hope to accomplish much toward improving their economic status. Other well-established industries long ago recognized and utilized these principles.

I have repeatedly said that there are certain kinds of service needed by farmers that neither the agricultural college, the experiment station, nor the extension service can be expected to render but which farm organizations can render. But I should like to state further that it is as much the business of a college of agriculture to teach students the need for and function of such farm organizations as the farm bureau, the grange, farmers' clubs, and the others, as it is that a college of commerce should teach its students the need and function of associations of commerce. The one is as essential to the best interest of the farmers as the other is to trade and industry. The need for organized effort among farmers will continue to be urgent, and alertness at this point should not be slackened.

Agricultural organizations can be of service in another way. They can bring about a more intelligent and sympathetic understanding of the difficulties and problems of other groups by informing themselves concerning the purposes and programs of such groups. Indeed agricultural organizations cannot serve agriculture in a large way unless they have as one of their definite objectives the promotion of the common good. Farmers are justified in organizing for the purpose of securing economic justice, but they will destroy their organizations if they use them to promote social or economic aggression.

The development of greater community consciousness will be both an aid to and a benefit that will result from organization among farmers. Greater focusing of attention on and the broader sharing of responsibility for com-
Community matters in rural areas is sorely needed. Disintegrating influences are at work, and unless local community interests are maintained as the focal point in farm life, farm life will suffer. A community that fails to provide certain basic opportunities for education and religious development, for health, transportation, social contacts, and the transaction of necessary business, will not be a place in which either an individual or a family can enjoy an altogether satisfactory life. The farmer must, therefore, for the good of himself and his family, personally share the responsibility for maintaining, or of improving where necessary, the elements that go to make up a good community. The ideals and standards of the people of a community thru the years quite definitely determine what these facilities shall be. And the community has a right to expect from every farm family that it help maintain these standards and these facilities on a high plane.

Appreciation of farm life as a desirable mode of living without large accumulation of wealth

A permanently satisfying farm life cannot be built on financial competence alone any more than it can be built without it. But the vision and hope of farmers for a state of economic independence very much beyond the point of security has at times dwarfed their sensibilities to other than "cash value" considerations in farm life.

When the United States changed from rural- to an urban-mindedness, it changed so quickly that few were conscious what a revolution in thought and attitudes was taking place. True, there has been rather general acceptance of the fact that to the normal man with untrammeled tastes, farm life at its best has at least as great an appeal as city life. Nevertheless there has been a per-

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sistent belief that it is easier to maintain a high standard of living, as it is popularly conceived, in the city than in the country. This belief has been and is largely responsible for the negative attitude of many young people toward farm life.

During the financial depression of the present decade, however, many city people have come to realize as never before that economic security is the first requisite in a satisfactory standard of living; that economic security in the city cannot be relied upon; and, further, that economic security on the farm is more certain. In my opinion economic security will continue to be more uncertain in the city than in the country except for the small minority who achieve financial independence. To the majority, who are less fortunate, the open country may in the next few years make the stronger appeal. If city dwellers cannot or do not resist that appeal, there will be a continued exodus from the city to the farm notwithstanding the fact that modern methods of farming, like modern methods of industry, call for fewer rather than more participants. There can be but little doubt that if this occurs, the future of farming, both as a business and as a mode of living, will be profoundly affected.

It is not too soon to begin to think what these developments may mean to present farmers and how farmers may best adjust themselves to them. We cannot predict, except in a very general way, what changes will take place, but whatever they may be we know that intelligent forethought by farmers and farm homemakers is the best way to meet them."
Appreciation of the interdependence of agriculture and industry

Farmers and their proponents have labored long to convince urban interests in the United States that the estoration and maintenance of industry on anything like satisfactory basis is inseparably linked with the welfare of farmers. Perhaps it took the persistent blight of farm distress followed by city distress to bring urban America to a realization of this fact. Now that a change of attitude is taking place, as evidenced by more general good will towards farmers and their interests, farmers and particularly organized farmers should not make the costly mistake of forgetting that agriculture has a large stake in the maintenance of industrial welfare.

Briefly, what I am saying is that urban and rural life—in industry and agriculture—are interdependent, and this great country, in its present and probable future development, cannot hope to advance without more general recognition of this inescapable interdependence. Stimulation of group consciousness has gone far enough. There must now come better understanding and good will. This cannot be effectively brought about in the absence of mutual respect and confidence. Good will and confidence will grow only where friendliness and justice abide; and mutual respect is possible only when ignorance, inefficiency, and prejudice are banished.

Vise governmental policies affecting agriculture

Adequate consideration could not be given to this subject even if all the time at my disposal were devoted to it alone. It should be obvious that in a democratic form of government, no intelligent citizen, be he a farmer or something else, can afford to be indifferent to matters pertaining to governmental affairs. Governmental policies have, and will continue to have, a significant bearing on
the farmer's business. Those who are interested in the welfare of farmers need to be active in their support of governmental policies which, in the long run, will assure farmers of economic and social justice.

_The encouragement and support of agricultural education and research_

Most of the advances made by farmers toward more efficient practices, such as reducing costs of production, improving the quality of farm products, and lessening the ravages of plant and animal diseases, are generally recognized as having been based upon the findings of the agricultural experiment stations of the various states and the United States Department of Agriculture, and the dissemination of these findings thru the extension services. Facts found by these institutions form the foundation upon which the best current farm practices are built.

Unfortunately, however, the public has too generally assumed that the sole purpose of colleges of agriculture, agricultural experiment stations, and extension services in agriculture has been to increase production. This may be because in crises like the World War these institutions were prepared with facts that made it possible to increase production quickly. Since that crisis these same institutions have been engaged in finding facts which farmers might use in adjusting their practices to changing conditions, but these efforts, being less spectacular, have often gone unnoticed by critics of these institutions.

The fact is that the aim of these institutions has been to teach the farmer how to do better the things that no one could do for him. Not only so, but colleges of agriculture recognize that efficient production is but a part of the farmer's problem, and that efficiency in marketing, while less under the control of the individual farmer than production, requires increasing attention and emphasis.
Some may be inclined to think that with all the research and teaching that has been done with reference to agriculture, the job should have been finished. The fact is, however, that the older the agriculture of a country becomes, the more complex, varied, and difficult are the problems confronting farmers, and the need for research in attempting to solve these problems therefore increases with the age of its agriculture.

**IT STILL PAYS TO FARM WELL**

Perhaps enough has been said to convince you that I do not assume that all the individual farmer needs to do to be successful is to farm well. I do assert, however, that he cannot hope to be successful unless he does farm well, nor has he any right to expect to be successful unless he farms well.

Obviously an efficient farmer must be an efficient producer, but he must be considerably more than that—he must be intelligent in marketing what he produces and intelligent in the use of his income. Briefly farming well pays for the following reasons:

1. It reduces the cost of production.
2. It increases the value of the product by improving the quality.
3. It establishes a basis for credit.
4. It aids in establishing and maintaining the good will and confidence of urban groups, thereby contributing materially to a more favorable attitude toward public policies concerning agriculture.
5. It helps to guarantee an adequate food supply at a reasonable cost.
6. The individual farmer gets satisfaction from the consciousness of doing a worth-while job well.
7. Without it, the children and grandchildren of the future will inherit an impoverished land and their lot will be infinitely more difficult than that of the farmers of the present.
8. It insures better living, and all that it implies, for the farm family.
Farming well reduces cost of production

In our eagerness to grasp some of the intricate and involved principles of economics, there is danger that we may forget some that are more commonplace because simpler and more easily understood. I have in mind the elementary principle that profits in farming depend upon the difference between the cost of production and the selling price multiplied by the quantity produced.

How then may farming well reduce the cost of production? Financial records of one to two thousand Illinois farmers kept each year for several years offer an answer to this question. The lowered costs and increased incomes that many of these farmers have succeeded in obtaining have resulted chiefly from their success in following consistently a well-balanced program which may be expressed in six items of production and planning as follows:

1. Good crop yields from each unit of land.
2. Intelligent selection, feeding, and management of livestock.
3. Selection of profitable crops, rotations, and field arrangement.
4. Intelligent marketing of farm products.
5. Economy in the use of man and horse labor, and machinery.
6. Careful weighing of building improvements and the selection of those calculated to increase net income or add to the convenience and comfort of the family.

These are the measurable items in reducing unit costs of production and increasing farm profits which have been found most important in a ten-year study of the business of fifty-seven farmers in central Illinois who have cooperated with the University of Illinois in what is called the Farm Bureau Farm Management Service.

How important these items are in cutting costs and protecting farm income is revealed by the differences in
the showings made on these farms both when analyzed as groups and when analyzed individually.

When these fifty-seven farms are arranged in three groups (Fig. 1) according to net income realized over the ten years 1925 to 1934, the following interesting differences are disclosed. The nineteen farms with the highest earnings realized average yearly net incomes of $2,890; the nineteen farms with medium earnings averaged $1,995; and the nineteen farms with the lowest earnings realized only $1,166.¹

¹ "Average net income" is what is left from gross income, on an inventory basis, after cash expenditures, depreciation on buildings, fences, machinery and equipment, and compensation for operators and unpaid family labor at going farm labor rates have been deducted. It is what is left for interest on investment, risk, management skill, and profit, if any.

The average-net-income figure for each group of farms is adjusted to the average capital of all 57 farms. The 19 high-earning farms averaged 244 acres and earned 5.65 percent on their investment. The 19 medium-earning farms averaged 260 acres and earned 3.90 percent. The 19 low-earning farms averaged 234 acres and earned 2.28 per cent.
The differences between the three groups of farms are highly significant, particularly so when it is noted that the average net income of the nineteen highest earning farms was almost two and one-half times as great as that of the nineteen with the lowest earnings. The length of time over which these records were kept and the number of farms involved practically exclude the possibility of the results being caused by accident or unusual circumstances. We are safe in saying that the differences were brought about mainly by differences between farming well, farming moderately well, and farming poorly.

We can further see what good farming means in terms of better income by turning to Fig. 2. The perpendicular lines in this chart show for each of the farms in this group the rate earned on the investment during each of two three-year periods 1925-1927 and 1932-1934. The dotted lines show how certain farms shifted their positions during the interval between these two periods from a lower to a higher level of earnings. Some rather spectacular advances occurred. One farm jumped from fourth place from the bottom to the top place, advancing from a rate of 1 percent in 1925-1927 to 9½ percent in 1932-1934; another advanced from 3½ percent in the earlier period to 7 percent in the later period; another from 4½ percent to 6 percent. Certainly such records, made during a period when farm incomes in general were declining, show what study, determination, and aggressive good management can do to increase the profits from farming.

The general decline in earnings between the first three-year period and the last, it should be added, is to be attributed mainly to a decline in prices for farm products rather than to changes in the efficiency of individual farmers.
Turning again to a study of the differences in the average net incomes of the three groups of farms discussed on page 13, we may ask how the farmers respon-
sible for the “better” farms obtained the better returns, for it is obvious that back of every better farm stands a better farmer.

Answers to this question are contained in Fig. 3, which shows in graphic form the relative importance of
the different factors that were responsible for the better incomes of the "best" farms as compared with those of the "poorest" farms. Better crop yields brought the best-paying farms $484 additional net income; more efficient livestock, $389 additional net income; greater amounts of livestock, $253; better selection of crops, $176; better personal prices for grain, $157; better management of horses, machinery, and labor, $74; these items, together with "miscellaneous," accounting for $1,639 of the total difference in net income between these two groups of east-central Illinois farms.

The difficulty in segregating the items shown in this chart is recognized. And it should not be assumed that the same relative importance of the various factors analyzed here could be demonstrated in some other section.
of the country than central Illinois. But other indexes of good farming applicable to the area I believe could be demonstrated in similar striking manner for almost any section of the state or country.

So much for what farming well does to reduce costs of production and make farming financially more profitable.

Farming well increases the value of the product by improving the quality

There is no phase of the farming business that so surely reflects a good farmer as the quality of the things he sells. The farmer who fertilizes and tills his fields and selects and cares for his livestock intelligently will not merely have a greater volume of things to sell than his less competent neighbor, but he will have a higher quality of product to offer the market, and these better-quality products intelligently marketed will more than pay the good farmer for his trouble, for the market is recognizing the demand of consumers for quality and is making it more and more possible, thru the establishment of definite grades, for a good farmer to get the better prices to which his higher-quality products are entitled.

Farming well establishes a basis for credit

More and more the extension of credit to the individual farmer is based on his apparent ability to repay the loan rather than on his ability to give adequate security for the loan. Because of the burden of debt being carried by so many farmers, evidence of ability to repay a loan is more and more dependent upon demonstrating the desire, the ability, and the determination to do a good job of farming. Except for their demonstrated determination and ability to farm well, many more farmers would have been dispossessed than have been during these years of depression.
Farming well aids in establishing and maintaining the good will and confidence of urban groups, thereby contributing materially to a more favorable attitude toward public policies concerning agriculture.

Let us see just how good farming gains the good will and confidence of urban groups and is reflected in more favorable public policies with respect to agricultural matters.

Just as surely as good farming reduces the cost of production, so does inefficient farming increase the cost of production. This means that if poor farming should persist, higher costs of production will persist; and if higher costs persist, then higher prices to consumers are inevitable. Inevitably, too, higher prices for foodstuffs domestically produced will not only encourage the importation of available foreign-grown products into our home markets, thus further complicating producers' problems, but will make consumers less favorable to protective measures. The general public will not long tolerate a protected market unless convinced that farmers in the United States are efficient producers.

Not only the home market but also the foreign market is at stake in this matter of efficient production. The export market for the farm products of the United States has been lost, not only because foreign countries have turned to a nationalistic policy of producing their own food, but also because some countries competing with the United States for foreign markets have been able and willing to sell at lower prices than the producers of the United States. It is imperative that costs of production be kept to the minimum or there is little hope of regaining export trade.

It may be a hard doctrine, but I believe it is a true one, that eventually the market will go to the farmers who can
supply it most economically, and this applies both to the foreign market and to the domestic.

Farming well helps to guarantee an adequate food supply at a reasonable cost

It is probably true that in no other country have city populations and industrial laborers enjoyed either as ample or as cheap supplies of food as have been supplied by farmers in the United States. Our farmers have become surplus conscious; and in the midst of plenty it may seem inappropriate to point out that, difficult as it is either to prevent surpluses of farm products or to minimize their unfortunate consequences to farmers, a problem of at least equal importance is that of preventing eventual shortages.

Ex-Governor Lowden is quoted as making some observations that have a bearing on this subject and that form the basis for serious deliberation. In speaking of the tremendous loss of fertility in the Mississippi Valley from erosion, he asks, "How long can the land stand this? . . . And while Nature is thus hammering away at our land, we, ourselves, go on speeding up the process of destruction by incessant cropping." And then he follows with this pertinent statement: "There are many intelligent farmers in this country who understand this and have been conserving their farms. And every year as farmers drop out because their lands are no longer worth working, the lot of the intelligent farmers who are left will become better. And I sincerely believe that this factor in the situation is powerful enough to bring at no very distant day a great measure of relief to the wise and efficient farmers."

Opinions like these, coming from one who is recognized as a close student of farm affairs deeply interested in the welfare of farmers are worthy of our thoughtful consideration. Tho the problem of the efficient farmer would
thus seem to be made easier by the self-elimination of one class of inefficient farmers—those that destroy their own lands by their careless practices—no one, I think, desires that it be solved by any such process, for much further devastation of our great agricultural areas will lead eventually to general distress on account of inadequate food supplies and high prices. We must look to the efficient farmer to replace the inefficient by the competitive pressure of lower costs, and thus while bettering his own position assure the nation of adequate future food supplies at reasonable prices.

The individual farmer gets satisfaction from the consciousness of doing a worth-while job well.

No one derives pleasure apologizing for slipshod work. That is what poor farming is. On the other hand there is real pleasure and satisfaction to be derived from plowing a straighter, better-turned furrow than is usually seen. A farmer is properly proud of a straighter-planted, better-tilled, better-yielding field of corn, tobacco, or cotton than his neighbor. He gets satisfaction from having fine, well-kept livestock and high yields of quality products.

It pays a farmer to farm well for the joy and satisfaction that he gets out of it.

Unless farming is well done, the children and grandchildren of the future will inherit an impoverished land and their lot will be infinitely more difficult than that of the farmers of the present.

To illustrate the tragedy of extractive farming, I am using some of the facts so clearly demonstrated by the famous Morrow plots of the Illinois Agricultural Experiment Station.

More than sixty years ago the late Professor George E. Morrow, at the University of Illinois, conceived the
idea of a long-time experiment on the University campus to demonstrate that even the rich prairie soils of Illinois could not be cropped continuously and indefinitely without serious loss of fertility. Professor Morrow's plan was to grow corn continuously on one plot; a rotation of corn and oats on a second; and corn, oats, and clover on the

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**Fig. 4**

third. His plan has been carried thru to the present with one alteration. Thirty-three years ago each of three plots was divided into two equal plots. On one half of each the original plan was continued, while on the other half a rational system of soil building was inaugurated and has been continued year after year to the present.

Let us see what has happened and is happening on the Morrow plots under the different kinds of cropping and soil management represented by them. First we will refer

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to Fig. 4, showing the yearly returns from these plots during two twelve-year periods, after paying the cost of production but making no allowance for interest on the investment or for management rewards.¹

The plot that has grown corn continuously returned, as an average of the twelve-year period 1910-1921, when the experiment had been running for more than thirty years, $3.87 an acre yearly. From the corn-oats rotation the returns were $7.27, and from the corn-oats-clover rotation, $11.59 an acre. These returns were from the untreated halves of the respective plots.

The more significant figures on the chart are, however, those for the twelve-year period following; namely, for 1922-1933. During this period the corresponding investment returns per acre were: from the continuous-corn plot, 50 cents; from the corn-oats rotation, $4.16; and from the corn-oats-clover rotation, $10.46.

Thus the productive capacity of this soil is being destroyed rapidly both under a one-crop and under a two-crop system without soil treatment. And this is happening at a time when productive capacity is coming more and more to be considered the most important factor in determining the market value of land for farming purposes.

How such wide variations in returns are reflected in land values is indicated in Fig. 5. Here the returns from these plots are capitalized at 9 percent (5 percent for interest and 4 percent for payments on principal where there is indebtedness or to be credited to management skill). On the basis of such capitalization the value of the land per

¹In arriving at the values shown in Fig. 4 and also in Fig. 5, the following crop prices were used: corn, 52 cents a bushel; oats, 37 cents; hay, $14.15 a ton. These are an average of 1910-1914 prices. Labor costs were figured at $8 an acre for corn, $4 for oats, $5 for hay. Harvesting and marketing costs were figured at 6 cents a bushel for corn, 4 cents for oats, and $3 a ton for hay. Soil-treatment costs where soil treatment was applied were figured at $5.65 an acre for continuous corn, $6.50 an acre for corn and oats, and $5.92 for the corn-oats-clover rotation.
acre for the twelve-year period 1910 to 1921 inclusive was, for the continuous-corn plot, $50.70; for the corn-oats plot, $84.70 and for the corn-oats-clover plot, $129.90.¹

Again the striking showing here is the drop in values for the second twelve-year period, 1922 to 1933. The acre-value of the continuous-corn plot, as measured by productive capacity, was $17; the corn-oats plot, $53.60; and the corn-oats-clover plot, $116.60. The right-hand column, representing capitalization at 5 percent, allows

¹In figuring the net investment returns shown in Fig. 4, the land was assumed to be worth a given sum ($120), and 1 percent of that sum ($1.20) was deducted from the gross returns for taxes. If then, these net returns are used to compute land values, the amount deducted for taxes must be restored (example: $4.16 + $1.20 = $5.36). But in capitalizing the resultant figure at any given percentage (Fig. 5), taxes must be considered. If it is assumed that they are 1 percent of the value of the land, 1 percent must be added to the desired percentage of capitalization. Thus the above net returns exclusive of taxes ($5.36) divided by 10 percent gives $53.60 as the value of the corn-oats land.
no margin for the repayment of principal in case of debt or of reward for management skill.

Thus while it has been shown that crop rotation will furnish some protection against the quick impoverishment of a fertile soil, something more than crop rotation is required to protect future generations against a worn-out soil. This is shown in another chart (Fig. 6) portraying what is taking place on the two halves of the corn-oats-clover plot of the Morrow series. Here we see a gradual falling off of crop values on the untreated half of this plot and a gradual increase on the treated half. Over a period of twenty-five years the decline in crop values on the untreated half was $4.18 an acre, whereas on the treated half there was an increase of $6.18 an acre. The gross difference between treatment and no treatment on this corn-oats-clover plot is represented by crop values of $17.77 an acre at the end of the twenty-five years.
Impressive evidence this of what poor farming will do for future generations; for if we are to judge the future by the past, impoverished land inevitably means impoverished people.

Further disastrous effects of continuous cropping to corn or corn and oats are brought out in another chart (Fig. 7), which shows the difference in the bushel-cost of producing corn on these Morrow plots.

### COST OF CORN PER BUSHEL UNDER THREE CROPPING SYSTEMS ON THE MORROW PLOTS

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**1910-1921**

**1922-1933**

During the twelve-year period from 1910 to 1921 the average cost of growing a bushel of corn on the untreated half of the continuous-corn plot was 60 cents; on the untreated half of the corn-oats plot, 48 cents; and on the untreated half of the corn-oats-clover plot, 41 cents.

During the second twelve-year period the costs increased materially on the continuous-corn plot and the
corn-oats plot, advancing to 78 cents and 72 cents respectively whereas on the corn-oats-clover plot there was a slight decrease to 40 cents a bushel.

In arriving at these costs the same production costs were assumed for all years, in order to eliminate all variables except changes in productivity. All items of expense were considered, and the land was valued at $120 an acre.

If to farm well may be assumed to include at least the maintenance of the productive capacity of the soil, then the above chart (Fig. 8), showing the acre-yields of corn under the different systems of soil management represented on these plots is illuminating.

Here we see that the untreated half of the continuous-corn plot produced 23 bushels an acre as an average of those years from 1907 to 1931 when all the plots were in
corn; that proper soil treatment applied to one half of this plot almost doubled these yields, increasing them to 44 bushels. We see further that on the untreated half of the corn-oats-clover plot the acre-yield of corn was 28 bushels above the yield from the untreated half of the continuous-corn plot; and that when proper soil treatment was added to this rotation a further increase of 15 bushels of corn an acre was obtained.

![Diagram](image)

**ACRES REQUIRED TO PRODUCE 2760 BUSHELS OF CORN UNDER DIFFERENT SYSTEMS OF MANAGEMENT**

Thus a good system of soil treatment in addition to a corn-oats-clover rotation was necessary in order to induce this originally rich prairie land to yield an average of 66 bushels of corn an acre during this twenty-five year period. Such yields are not above what we should expect to continue to obtain from our better Illinois soils under proper soil management.

The significance of the loss of productivity that has taken place as a result of continuous cropping to corn can be more clearly realized by assuming that 120 acres of farm land has been managed as has this plot. The corn yields from such an area would total 2,760 bushels. Now,
how many acres would be required to grow this same
number of bushels of corn on similar land where a corn­
oats-clover rotation had been practiced? Less than half as
many acres, or 54. Supposing soil treatment had been used
in addition to a corn-oats-clover rotation, approximately
42 acres would be required to produce this amount of corn.
Thus about one-third as many acres would be necessary
to produce 2,760 bushels of corn on land receiving good
soil treatment and cropped to a corn-oats-clover rotation
as would be required had the land grown nothing but corn
and received no soil treatment. This simple lesson is
shown graphically in Fig. 9 on the preceding page.

For the encouragement of the younger generation of
farmers, and as an explanation to the older ones, may I
add that the results from these long-time experiments
show why, in some instances at least, the younger genera­
tion is not able to make as good financial showing in farm­
ing as their fathers and grandfathers did.

It may seem an extravagant statement, but neverthe­
less it is true, that it will be no kindness to children to
leave them a farm the fertility of which has materially
deprecated by continuous cropping, or erosion, or both.
Even tho it be free from debt, the children will have more
difficulty in getting a good living from such a farm than
their fathers and grandfathers had in paying for it.

*Good farming insures better living*

If as a nation, as a group, or as individuals, we are to
continue to grow and develop, there must be something
that will spur us to our best efforts. That spur, that incen­
tive to farm well is that farming well insures better living,
and all that it implies, for the farm family.

Having shown in the first part of this paper how much
more profitable good farming is than poor farming, I
think you will agree that under our system of govern
ment, with our freedom of opportunity, and with the social and cultural desires that are bred in us, better farm incomes naturally lead to better farm living. Of course, we are sometimes accused of being forgetful of the fact that the real objective of good farming is, after all, good living; that in striving to be better farmers, we place too much emphasis on better incomes rather than on the better living which the income judiciously used would buy; that in our effort to become economically secure we lose sight of other forms of security, taking better care of the health of our herds, for instance, than of our families, building a new stock tank when we need water piped into the house, and so on.

There is some truth in all this. At least we all know farmers of whom those things may truthfully be said, and all of us probably have erred at times in our choices. But I think I know something of the ideals, the hopes, and the aspirations of men—and of farm men—and I know that the ultimate purpose of the vast majority of good farmers is that their families may have more of the good things of life. I know too the anxiety that drives a man to provide reasonable economic security for his family before placing the emphasis on better living; and may I add that striking a proper balance between economic security and good living during the difficult years of the past decade has been no easy task. But the balance in favor of better living is something we must ever strive for if we are to realize our greatest ultimate satisfactions—more abundant home and community life.

CONCLUSION

Notwithstanding all that has been said and done to promote good farming, those who are honest will admit that a discouraging amount of poor farming still persists. Poor farming we have seen, is destructive, not only to the
individual who practices it, but also to the interests of farmers as a group. It gives business men and the public an opportunity to say that if the farmer would only “stick to his last” and farm well, he would be all right. Some of this poor farming is, of course, excusable on the ground that farm incomes have been so reduced as to make it impossible for farmers to adopt farm practices that, while they pay, involve a cash investment. Some of it is directly traceable to discouragement and the seeming hopelessness of the situation.

But there are some things that can be done in a better-farming program that do not call for cash investment; and we cannot let discouragement forever block our progress. What, then, is the first step in improving our farming methods?

My answer is, getting the facts, knowing how. A staggering number of helpful facts are available to farmers, and each year more are ready for application as a result of the experimental and research work of the state experiment stations and the United States Department of Agriculture. A generous public has made it relatively easy for farmers to get these facts. But the facts in themselves are impotent. The will to do—to make the largest possible adaptation and use of available facts—is after all the crucial test.

Farmers can permanently establish the justice of their cause only by doing everything in their power to put their own house in order. This means demonstrating their ability to produce and market their products efficiently. Contrary to rather general opinion I believe that most farmers are disposed to work as strenuously to reduce their costs of production to the minimum as they are to clamour for proper governmental recognition of their problems. Others are seemingly unwilling to do either the one or the other. The inefficient farmer is one of the millstones about the
neck of agriculture. Of course this load will never be entirely removed, but it can be, and I believe is being, lightened. Most certainly the agencies that are working to grind down this stone should be given the encouragement and support of good farmers everywhere.

Chiseled in the granite rock of the former home of Webster in Washington is this motto:

LET US DEVELOP THE RESOURCES OF OUR LAND, CALL FORTH ITS POWERS, BUILD UP ITS INSTITUTIONS, PROMOTE ALL ITS GREAT INTERESTS, AND SEE WHETHER WE ALSO IN OUR DAY AND GENERATION MAY NOT PERFORM SOMETHING WORTHY TO BE REMEMBERED.

Shall we not make this motto our own?
Printed in furtherance of the Agricultural Extension Act approved by Congress May 8, 1914. H. W. Mumphord, Director, Extension Service in Agriculture and Home Economics, University of Illinois.