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## AGRICULTURAL PRODUCTION PROGRAMS IN THE CORN BELT

Presented by H. C. M. Case

When I accepted a place on this program, it was understood that I would present the material which was prepared for a series of regional meetings in Illinois sponsored by the Production and Marketing Administration. As I understand it, I am to present the subject matter used in that series of meetings as an illustration of methods and techniques for dealing with controversial issues.

The preparation and presentation of this material came about when I was asked to serve on the State Mobilization Committee and in that capacity participated in the discussions of the PMA program. On one occasion a discussion of desirable land use came into prominence. A Soil Conservation Service representative recalled that during the war years the College of Agriculture had done some work on "Illinois' Capacity to Produce," that might be very pertinent to the current problem. This subject was given a place on the agenda for the succeeding meeting. A series of maps bearing on the appraisal of the current land use was prepared and presented. On the strength of this presentation, the State Mobilization Committee voted to have further development of the data presented at a series of five regional meetings held in the state which were to be attended by state PMA chairmen, Soil Conservation district chairmen and technicians, the county agricultural agents, and other interested persons.

With this brief picture of the background leading up to the meetings, I believe it is appropriate to present to you virtually the same talk and material which were presented at the regional meetings.

As I stated I understood my assignment to be the presentation of pertinent data which would help in making an appraisal of current land use in Illinois and in planning sound future land use. To accomplish this a quick survey of current land use was presented and suggestions were prepared for the use of those who later were to serve on county resource committees in helping develop plans for future use of the land in their own counties.

It was stated that the objective was to help this group take a fair look at some of the aspects of our land-use problem. We hoped to accomplish this through discussing some of the problems which we felt responsible farm leaders in every county should consider with respect to what is best for their own particular communities. It was further stated that unless we could get a considerable number of local people to give responsible consideration and study to this problem, it would be difficult to develop the use of our land in the way which would best serve the interests of those who would use it in the future while at the present time serve the general public interest. We stressed that it was hardly enough to test the soils to find out what they lacked or to wait until each man could be reached in working out a complete soil conservation program for his own farm, and that we needed to focus more attention on the whole problem in order to develop a more definite county, state, and national land-use policy. It was added, with the extent of exploitation of our soil in the past, we needed to have a balance sheet to help us to

locate any sore spots which had developed from poor land-use practices and to help us consider what was needed to protect the future usefulness of our land.

In attempting to take an unbiased position, I called attention to several things which had impressed me in the past. I used the fact that I was a farm owner and had experienced certain conflicts between the programs of the PMA and the SCS. I tried to state my own experience in the same way in which I felt those in attendance had met a similar problem on their own farms.

Some of you saw the map which was made up from data made available by several of the large life insurance companies which had been prepared out of their combined lending experience back about 1930. It was a map of the United States with a red dot placed at the point where one of the companies had difficulty with a farm loan. It was mentioned that in large areas of the country the insurance companies did not make farm loans because they considered the areas to be poor risk territories. However, there were many areas with concentrations of red dots where there was trouble at that time. A number of areas in Illinois did not look too good on that map.

An incident was recalled of the vice president of a large life insurance company who called on me and said that he could not understand why in some of our Illinois counties all of their farm loan trouble had been concentrated in one part of the county. The answer, of course, was that they were not making careful appraisals and evaluating the variations in types of soil. This official told me they had accepted reports on farms which merely stated that the farm consisted of good prairie soil. These reports contained nothing about differences in the types of soil, slope of the land, or other pertinent conditions that occurred in different parts of the same county, and in some instances, even on adjoining farms.

To stress the earlier research work which the college had done, attention was directed to the request from the U.S. Department of Agriculture in 1935 for the Agricultural Experiment Station, along with the other state experiment stations, to make a study of the desirable long-time use of land which would serve as a guide in developing farm programs. I commented that it was unfortunate that the information gathered then was made available only to state committees and that it had never been presented at the county level or to groups of people in all counties of the state. We then gave the conference members a report. This was a preliminary report of the capacity-to-produce studies which our station is preparing. We are passing this out to you now. We merely brought together available information which we felt would assist in presenting the situation at the series of PMA conferences. We attempted to deal only with grain and forage crops and pointed out that in our final recommendations we would also have to consider livestock.

To give more substance to the presentation, it was emphasized that with our present growth in population and demand for food in other countries, we needed to take a good look at the land-use problems of the whole country, in the interest of a permanent food and fiber supply for our own population. It was pointed out that the county committee groups would soon be considering setting up guides for the production in 1952, but it was my understanding when we were asked to enter into this study that we should be much more interested in what might be the best land use in

1955 and more distant dates. Some of these statements were related to our present population and to our rate of population growth.

Since a committee representing various departments of the College of Agriculture had cooperated in drawing up this report, we emphasized that we felt it was desirable to present any data that we had available for the state in bringing out some of the differences in soil conditions and in production by individual counties. This would be necessary if the local county were to consider its major soil problems in the best way.

The second phase of the report presents an approach for using detailed data showing the important soil conditions and associations for each county, together with tables indicating the desirable use of land of different capabilities. We had the cooperation of the Agronomy Department of the College of Agriculture and the Soil Conservation Service in preparing the land-use map for each county in Illinois.

It was stated that we would immediately face some definite limitations as to what might be done to improve the use of land in 1952. To be specific, if in a given county it was felt that the land in grass and legumes should be increased, the upper limit of tillable land that could be placed in grass and legumes was already determined; that is, any land left standing in grass and legumes in 1952 must have been seeded in the current year of 1951 or else left standing over from old seedings. Therefore, if the amount of tillable land already seeded in grass and legumes did not provide the amount of land which local people might agree should be grown to grass and legumes, any desirable land-use plan would need to be developed over three or four years in advance of obtaining a desirable cropping plan. This, it was pointed out, was especially true on farms which now had very poor cropping plans and where limestone and other fertilizers would need to be applied before grass and legume crops could be grown satisfactorily, or where other land use practices needed to be introduced.

As the next step, it was stated that we had not had very normal cropping conditions at any time since the first world war. Yet, there were periods when some people said that we had serious overproduction of certain crops and that we had been through other periods when we had used the land more intensively than we should in order to produce all the food possible during the war years. This was presented to strengthen the case for making a careful appraisal of present land use. An attempt was then made to suggest the approach which should be taken with reference to each individual county. We suggested three steps in making this study: (1) appraise the present soil conditions, (2) determine a desirable long-time land-use program for the county, and (3) as the demand arises for setting up goals for next year's production, or any future year, to weigh the urgency of the need for various farm products against the necessary protection of the soil.

We stressed that there would be times when certain concessions would have to be made for rather severe use of the land, but when this was necessary, we should be sure that the recommendations were not going to do irreparable damage to the land. Entirely apart from the over-all program in attaining certain goals of production in recent years, or in the needs of particular farms to make improvements in their operations, I explained that on my own farm my experience had been similar to that of members of my audience; that at times I felt

that there were rather serious conflicts between different federal programs. Since the first farm programs were initiated in 1933 I had purchased a farm. When I took possession, the corn base on the farm was two thirds of the total farm acreage, with a base yield of 37 1/2 bushels. There are still many farms in the same community that are continuing to use their land in about that way.

I explained further that with the Soil Conservation Service a plan for the farm was worked out which restricted the acreage of land in corn and soybeans to 50 percent of the tillable land, and that a full 25 percent was in grass and legumes. As a result of making this change the total production of grain was much higher than it was 16 years ago. During the war we produced all that we could but when the land began to show the strain of more than half of the land being grown to corn and soybeans, we returned to our original plan of restricting the acreage of corn and soybeans to 50 percent of the tillable acreage. Last year we had to decide to do this in spite of the guide sent out calling for increased acreages of corn and soybeans. We felt that we could better meet the ultimate objective of the government through emphasizing bushels rather than acreage. I used this situation because it illustrated the problem that many good people out over the state of Illinois had experienced; that unless the emergency in a particular year was very severe, I felt a farmer was rendering the greatest service if he maintained a cropping system that would give maximum production in bushels over a period of years. It was admitted that there might occasionally be a year when the severe use of the land might be justified, but that we probably had gone too far in recent years, and in the effort to increase acreage we had reduced the total bushels produced in the long run. It was pointed out that because of this situation we should take a careful look at any available information which might help us get a reliable answer to guide farming operations.

Further, to give the whole setting more local color, attention was called to the article in the *Country Gentleman* quoting the comments of many people, some from our own state, on the question of how much of our land we can grow in corn. No doubt some of you read the article and saw the answers running all the way from the enthusiast who thought that with the use of liquid nitrogen we could grow corn on land almost continuously and still get maximum yields, down to the suggestion that if we were going to produce most economically we should hold our rotations, even on the best land, to at least a quarter of the land in grass and legumes. I admitted that when we view the progress we have made in learning how to handle land over the past half century, we might want to leave our conclusions open to some adjustment from time to time. Also, we might conclude that if we were careful to plant around 20 percent of our land in grass and legumes, we might even have 60 percent of the land growing tilled crops on some of the best level soils.

There are, it was admitted, some unsettled problems among agronomists as to just what kind of a rotation was needed to build up a run-down soil, and after having built up the soil, whether we needed the same kind of rotation to maintain that soil. Some people who had placed considerable dependence on liquid nitrogen this year, it was added, had been unable to obtain it, and perhaps for the time being, we should stick fairly close to methods which have been tried out and

rather thoroughly established.

Now, if we may turn to the booklets which were used for this series of meetings, I will rather hastily skim through some of the things which were emphasized. I hope I have not belabored this introduction too far, but as to the method of presentation, I tried to lay the foundation to relate conditions my audience would agree upon, to place myself in the position of those in attendance at the meeting, and as nearly as possible to gain their confidence and willingness to make an unbiased appraisal of our present land use situation. (This was presented before the mimeographed publication of the Extension Service AE2803, entitled "Discussion and Data to Be Used as a Guide to Counties for Land Use Planning," was reviewed.)

Without going into a detailed discussion of the mimeographed report AE2803, a few of the high spots emphasized that over the five-year period, 1945-1949, 52 of the 102 counties in the state had less than 20 percent of the tillable land in hay and pasture crops. Crop yields over the same five-year period in six counties in the northern three tiers of the state which is not normally considered the best corn-producing area of the state averaged over 60 bushels of corn per acre. All of the counties producing 25 bushels or more of soybeans to the acre with the exception of one were north of the counties considered to be the chief soybean producing counties. Counties producing 50 bushels or more of oats, with one exception, were in the northern three tiers of counties. Most of the counties with wheat yields of 25 bushels or higher average were again north of the corn-soybean area of the state. In the northern three tiers of counties the current land use and the recommended land use are more nearly the same than in any other area of the state.

In the earlier studies we had indicated the percentage of tillable land which we felt should be retained in grass and legumes; the central part of the state presented a major problem. During the war years with the heavy demand for increased corn and soybean production six counties in east-central Illinois had 70 percent or more of their land in corn and soybeans. This has reduced the current productivity on many farms and reduced yields below what they should be on land which is well handled.

In south-central Illinois, commonly known as the claypan or hardpan area, the acreage of redtop had been reduced by 71 percent on this tight subsoil area since 1940. Recent soil field tests showed that on level land in this area, not subject to surface erosion, proper soil treatment had made possible greatly improved crop yields. The rotation of corn, soybeans, wheat and one year of grass and legumes on such land for an 11-year period had resulted in average corn yields over the past four years of 72 and 76 bushels per acre on two separate soil fields. The use of mechanical power was credited along with the proper use of fertilizers in making the increased yields possible. Because of the difficulty of plowing and cultivating this land the introduction of mechanical power may be as great a factor in increasing crop yields as soil treatment. Mechanical power permits more thorough tillage of the soil and the planting of crops in proper season. Better working of the land also contributes to better utilization of fertilizers applied to the land. It was emphasized, however, that this kind of

rotation on sloping land would result in destructive erosion in that area.

The next step in the presentation was to show the results of crop rotations and soil treatment on the 20 or more soil fields scattered over the state which are operated by the Agronomy Department. The yields obtained under certain soil treatments were compared with the county average yields in the same county. Also results from farms on which records had been kept for many years were used as illustrations of what farmers were accomplishing. These records are available in practically any community in the state and helped to illustrate many points included in the presentation.

Finally attention was called to the soil association maps that have now been prepared in considerable detail for every county in the state and an illustration was used to show how these maps and supporting data could be used in determining a good land-use program for each individual county. The discussion ended with emphasis upon the responsibility resting with local people to study thoroughly the land-use problems in their respective counties so that a sound land-use program might be developed.

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<sup>1/</sup> Prepared by C. B. Ratchford and Rudolf Freund, North Carolina State College, August 1951.