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A Kentucky Farm Which Was Organized Into An Efficient Business Unit

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Prior to the formation and execution of the reorganization plan this 96-acre farm was being operated under similar conditions and in much the same way as thousands of other farms in the state. The available labor on the farm consisted of the farmer, his wife and their two small sons. Operating capital was an important limiting factor in making desirable improvements on the farm. The principal products sold were dark tobacco, hogs and cream. Very little lime or fertilizer was being used and as a result clover and alfalfa could not be grown successfully. The land is rolling and inclined to erode badly under poor soil management practices.

The total value of products produced on the farm amounted to about $1,850 per year. The expenses amounted to about $750, leaving only $1,100 as a return to labor and capital.

WEAK POINTS OF THE OLD SYSTEM

1. **Poor balance between crop and livestock enterprises.** More land, labor and capital were being used in the production of tobacco than the market or farm conditions would justify. So much land was being used in the production of the crop that it could not be restricted to good tobacco land. Moreover, proper care and attention could not be given to the cultivation, harvesting and curing of the large acreage and as a result poor quality and poor prices were often obtained.

The hog enterprise also, was over-expanded. Since hogs consume large quantities of grain, no hay and very little pasture, it was necessary to keep a large proportion of the tillable land in corn in order to supply the grain needed. Consequently, almost half of the land was broken each year for corn, tobacco, and soybean hay.

In addition to making it necessary to over-crop the land, this combination of crops and livestock resulted in a very poor distribution of the demand for man labor thru the year. There were heavy peak loads which could not be taken care of by the regular labor, in the spring and early summer and again in late summer when tobacco and soybeans conflict in their demands for man labor.

With a good market for dairy products near by and with conditions on the farm such as to make the production of more hay and pasture desirable, it appeared that the dairy enterprise could be expanded profitably, even at the expense of the tobacco and hog enterprises. However, such an adjustment would make it desirable to increase the poultry enterprise in order to utilize the skim-milk to good advantage.

2. **No adequate provision for maintaining soil fertility.** The crop and fertilizer practices were not such as would improve or even maintain the fertility of the soil. Very little lime had been used and clovers could not be grown in the rotation. Only a small amount of fertilizer was being used and for the most part all the manure was spread on the tobacco land, which was usually the best part of the field. With the limited amount of livestock the supply of manure was not adequate to cover all the cultivated land.

3. **No systematic crop rotation.** The crops were changed from one field to another but there was no consistent, systematic rotation of the crops from field to field. As a result the acreage of the feed crops varied widely from year to year. For example, the corn raised for grain was increased over 30% from one year to the next and the legume hay was more than doubled the same year, while the livestock remained practically the same except that the number of hogs decreased about half. Such variations in acres of feed crops meant large deficiencies or large surpluses from year to year and this necessitated buying feed or carrying over large amounts of hay and grain from one year to the next.

4. **Inefficient layout of farm.** The fields, which had remained fenced in much the same way as they were originally cleared and laid out, varied in size from three to sixteen acres. This made it extremely difficult to work out a rotation which would give a uniform acreage of crops each year. It is true that natural conditions which could not be overcome, such as the location of roads and drains, were responsible for the irregular shape of some of the fields. In addition to the irregular shape and size of the permanently fenced fields, the method of cropping was such that the larger areas had

become cut up into small, irregular plots which were cultivated as fields, the level, more fertile parts of the field being planted to one crop, such as tobacco, while the rest of the field was planted to corn or soybeans. In addition to making it difficult to follow a uniform rotation these small fields added greatly to the labor required to cultivate and harvest the crops.

The farm buildings were also very poorly located. This resulted in reduced efficiency in doing the farm work, especially in caring for the livestock and milking. The stock barn was 475 feet from the dwelling. The poultry house was over 500 feet from the corn crib. The tobacco barn was 335 feet from the dwelling house.

THE IMPROVED ORGANIZATION

After keeping records, in cooperation with the Department of Farm Economics, on this farm for a few years and studying these records closely, the operator decided that some adjustments in organization and management would have to be made if he was to obtain a profitable return from the land, equipment, operating capital and labor which he had to put into the business.

If any adjustments were to be undertaken he was especially anxious that just the right changes should be made, and that the extent of those changes should be as nearly correct as possible so that it would not be necessary to reverse the order of things and change back after a year or two. In order that the best possible adjustment between the enterprises should be had when the changes were finally made, a farm budget was worked out for the entire farm, embodying plans for the use of the land, labor, equipment, and other productive resources available. This enabled him to study in advance the effect of any or all changes contemplated. When the adjustments were finally decided upon he made further use of the budget in carrying out the changes. As the changes in enterprises were being made the operator continued his records in order that he might check the results he was securing with those contemplated in the Budget. (For a more complete discussion of the budget and its use see Kentucky Experiment Station Bulletin 292.)

STRONG POINTS OF REORGANIZED PLAN

1. **A well balanced business unit** which permits of the most efficient use of the operator's productive resources in the production of those commodities which are best suited to the markets available and to conditions on the farm. This means the most advantageous use of, first, the operator's labor and managerial ability; second, his

available funds; third, his land; fourth, his machinery and equipment; and fifth, the available family labor.

2. A systematic crop rotation which will not only increase the fertility of the soil but will provide a uniform acreage of the cash crop, feed crops and pasture each year. The rotation consists of:

1st year: corn, 13 acres; tobacco, 3 acres.
2nd year: wheat, 16 acres (seeded to mixed clover and grass).
3rd year: mixed clover and alfalfa hay, 16 acres.
4th year: mixed clover and grass pasture, 16 acres.
5th year: mixed clover and grass pasture, 16 acres.

3. Efficient farm layout. The fences have been changed and fields grouped together until the land in rotation has been arranged into five fields of approximately sixteen acres each. One small field of one and one-half acres near the house is kept in alfalfa for hay or pasture. As it has become necessary to replace the old buildings they have been re-located to provide for more efficient handling of the livestock. The buildings are located as conveniently to all fields as natural conditions permit. With one exception, any field can be reached directly from the barn lot.

4. Good selection of crop and livestock enterprises. A number of crop and livestock enterprises have been selected which appear to have the greatest possibilities considering the available markets and prices which can be expected, on the one hand, and conditions on the farm including the ability and special inclination of the farm operator on the other. Dairy products and dark tobacco are the important sources of income, with wheat, poultry and hogs as minor sources of income.

5. Good balance between enterprises. Not only have the enterprises been wisely selected but they have been combined in such proportions as will give the greatest possible returns for the resources available. On most farms it is not possible to obtain as large returns from a single enterprise as it is possible to obtain from a number of enterprises properly selected and properly combined into a producing unit. This is simply the result of certain economies and savings which are to be realized in the use of materials, labor and land.

There are enough livestock of the right kind to utilize the feed crops and by-products which are produced on the farm. There are enough feed crops of the proper kind to supply the livestock with home-grown rations except for a minimum of concentrated feed which must be purchased to supplement those grown on the farm. There is a limited acreage of tobacco, grown on choice tobacco land, which produces a profitable cash crop.

The livestock consists of:

16 dairy cows.
4 dairy heifers.
4 heifer calves saved each year.
10 calves vealed each year.
1 purebred bull.
1 sow with one litter of 8 pigs.
60 hens and the young chickens.
3 work horses.

6. Good farm practices in producing crops and livestock. Practices similar to those shown by the Agricultural Experiment Station to be most profitable are being used in the production of both crops and livestock. One application of limestone consisting of about 2 tons per acre has been applied to all the tillable land and some of the fields have received a second application. Phosphate fertilizers are applied at the rate of 300 pounds to 500 pounds per acre per round of the rotation. In addition, all the crop land has an application of manure, of about six tons per acre, once in five years. The manure is scattered in the spring on the field which is to be cultivated that year.

The dairy cows are fed a balanced ration according to individual production. The production of the herd is being increased from year to year as the older cows are replaced by the best heifers produced on the farm. Good production is also obtained from the poultry and hogs.

7. Adequate farm records. Such records as are needed to study the farm business as a whole and the enterprises individually are kept on the farm. These records included a farm inventory which is made at the beginning of each year, purchases and sales, production of livestock, and acres and production of the various crops.

The total value of the products produced on the farm with this improved system amounts to about 3,900 dollars per year. The expenses amount to about 1,150 dollars, leaving about 2,750 dollars as a return to labor and capital.

TIME REQUIRED FOR REORGANIZATION

The time which will be required to effect the adjustments in organization in order to make your farm a more efficient producing unit will vary with the number and extent of adjustments which are necessary on the one hand, and the labor and money available to make the changes on the other. In many cases the shifts which are necessary to put a farm business on a profitable basis can be made in two or three years while in other cases it will take six to eight years to make the desired changes.

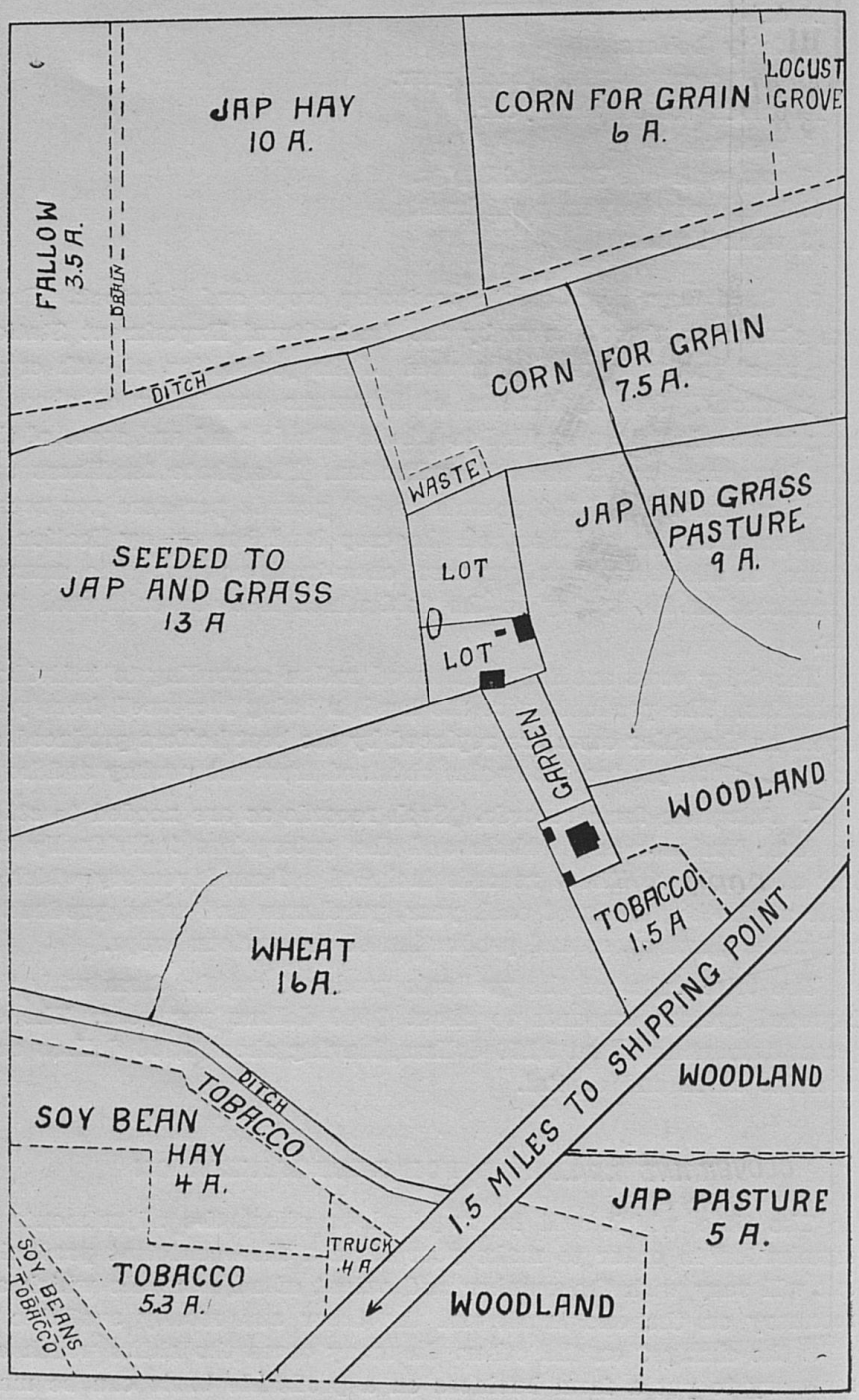

Fig. 1. Original layout of farm and crops grown.

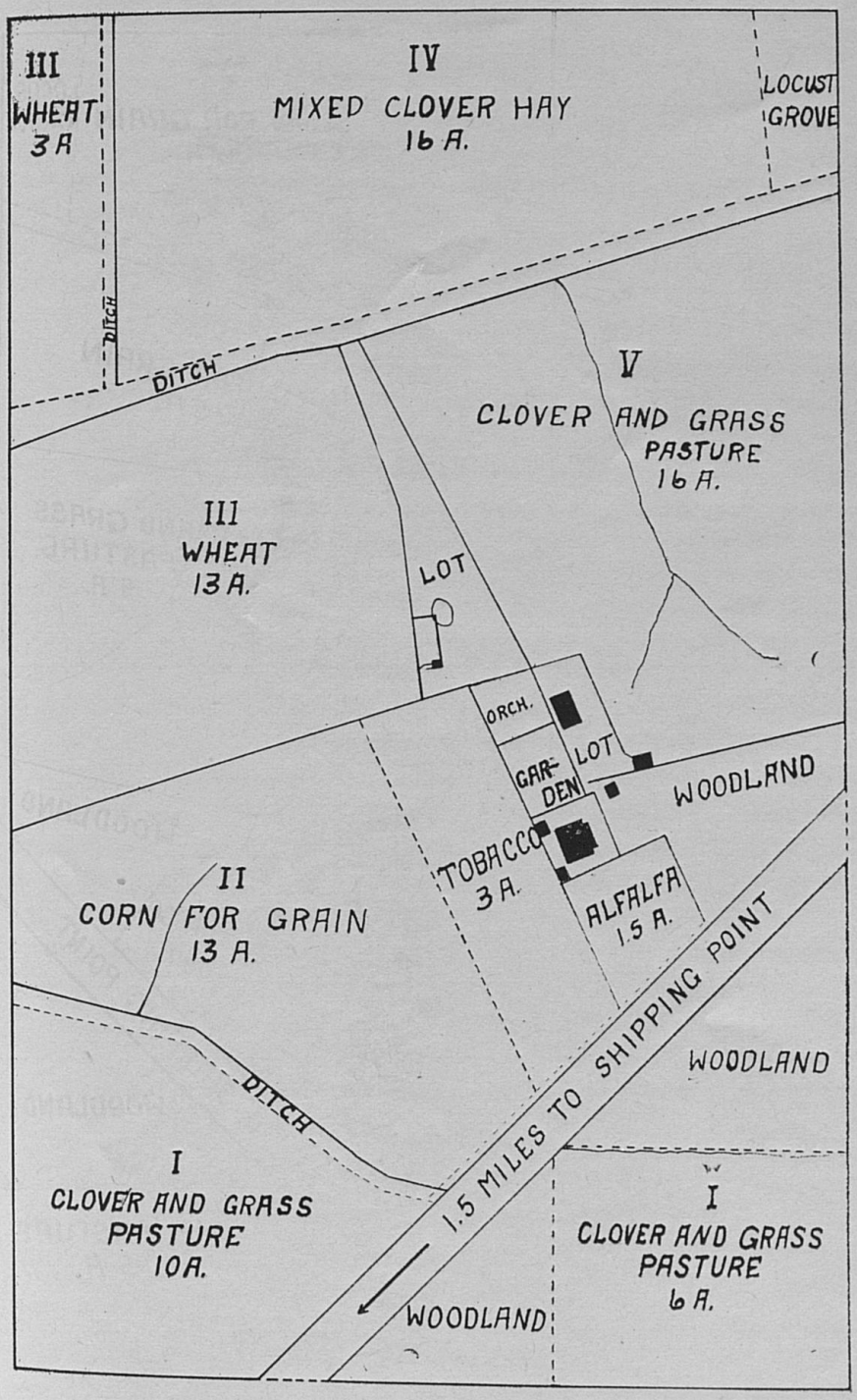

Fig. 2. Layout of farm under reorganized plan and crops grown.