THE AGRONOMIC USE OF POWER-MACHINERY
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This paper is in direct response to one appearing in volume 9 of the Proceedings. In that paper it was suggested that the American farmer should increase his efficiency and scale of living by cooperative farming. It was indicated that the combining of small farms to form a unit of 2,000 to 5,000 acres would increase the efficiency of the operators and laborers, permit the use of larger and better farm machinery, produce better markets, and result in more profits to the individual farmer. These suggestions would streamline agriculture and apply modern assembly line methods to agricultural production with greater results. If history repeats itself, agriculture will need all the streamlining and short cuts in production it can obtain.

This paper will try to point out some of the needs of the farmer and how he may meet these needs without organizing cooperative farm units. Since the writer’s interest is largely soils, the fundamental importance of good soil is stressed. Some of the causes of the high cost of production are pointed out and possible corrections suggested which should not seriously change our present social, economic, or political concepts of farm life.

The great agricultural progress in this country has been largely through the ingenuity of individual independent farmers. It has been the willingness of this early American farmer to endure hardships and plenty of hard work which has made possible this big stride in agricultural advancement. Very little of this agricultural development can be traced to large agricultural units or even large farm units. It has been the small independent farmers who have produced the great bulk of this agricultural development. It is true that many farmers in this country have this vocation because they were brought up in this environment and have given little thought to any other type of business. However, it is believed that there are many persons engaged in farming, as was the case in the early days of the country, because they like farming and the outdoor life, desire variety and non-monotonous activity, and like the independence of the work.

American farmers have cooperated with one another only when it has been necessary to do certain parts of the actual farming operations. It has been evident in the past that as soon as there was a development in machinery or some other solution of the farm production problem, they returned to their own independent labors. This desire on the part of the farmer to be his own boss is so strong that it is doubtful if it can be overcome. However, unless this is submerging their desires and wishes to some extent by many of the state, federal, and private agencies which have been set up to help the farmer, the agencies, through their service men, have found that it is not best to advocate cooperation unless it is absolutely necessary. They have submerged the individuality of the farm unit and their services on that basis. This policy have met with considerable success, for the farmers and the agencies. From these observations, it would hardly seem advisable to suggest or expect farmers to give up their independence or unless necessary.

Unfortunately, a large share of this early agricultural development in this country is the result of exploitation of the soil. Farming is different than business or industry in that things do not get done until absolutely required or necessary. In the past, little thought was given to maintaining fertile soils. The chief concern was making money or drop to a lower scale of living. Because of this early and continued neglect of the farmer is now faced with many vital problems, for both the farmer and the agencies. From these observations, it would be of only minor importance if he once good unexploited soil. As a result of exploitation, soils have deteriorated.

An example of deteriorated soil is the organized and gradual loss of soil organic matter. This loss is reflected in the soil by less desirable conditions and structure, less ability to hold nutrients and water, more water runoff, less penetration, and more susceptibility to droughts. All of these undesirable conditions, as well as many more, are the result of past and present farm practices. The farmer has burned, hauled away, destroyed under any organic material which develops on the surface. Such practices have resulted in organic matter rather than accumulation or maintenance. These have been shown early in this agricultural tradition that he should leave the residue on the field to decompose, many of his present critical problems. Such losses as droughts, water runoff, water penetration, fertility and soil preservation, would be unimportant. All of this resulted in an increased production and less income. Perhaps the educated soil workers are responsible for this appreciation of organic matter. Perhaps we have been taught the right educational materials.