

AGRICULTURAL HINTS

A Varied Diet for the Cow.
Never depend upon a single food for an animal. The cow prefers a varied diet and will give more milk when her food is of a kind to tempt her to eat. A good cow necessarily consumes more food than an inferior one.

Clover and Fertilizers.
It is claimed that land can be recuperated by the growing of clover, as it derives nitrogen from the atmosphere, but clover will not thrive unless the soil can supply lime, potash and phosphoric acid. These substances will be removed from the soil by clover, and if the clover is harvested and sold the land will lose the plant foods that go with the clover, hence, if the clover is plowed under it returns to the soil only the mineral matter taken from the soil, the gain being in nitrogen. To secure large yields of clover, therefore, there must be given the soil a liberal application of the mineral substances, potash and phosphoric acid especially, while lime is always beneficial. When drilling in the wheat, and using fertilizer at the same time, apply extra fertilizer in order to assist the clover in the spring.

Quality Determines the Price.
Quality in poultry controls the price, and prices are often reduced because of the large supply of inferior stock that reaches the market. Farmers who seek to reduce the number of individuals in their flocks by selling off the surplus males and females make a mistake in not fattening them before shipping. If fed on a variety with corn as the leading article of food the fowls intended for market will gain considerably in 10 days. The extra weight secured is an advantage, but the largest gain will be the increased price for quality. Those who suppose that a coop of fowls are sold without regard to the individuals will learn their mistake by observing the commission merchants and retailers, who always assort the birds when it is possible to do so. If sold as a coop of fowls the price of the whole will be reduced if one or two poor birds are in the lot.

Improved Methods of Corn Harvesting.
The past few years have seen wonderful improvements in the methods of harvesting corn. Several large agricultural machine manufacturers have been putting corn harvesters on the market. The demand for the machines when well understood was greater than the capacity of the factories. In many sections it is a rarity to find a farmer without a corn harvester. The great advantage in using these corn harvesters is the saving of labor. Any one who has tried it knows that cutting corn by hand is one of the most laborious of farm operations. Then, too, the corn harvester binds the stalks in bundles and the fodder consequently is much easier to handle. Better shocks can be made and more desirable fodder results.

As a complement to the corn binder, the modern husker and shredder is a great success and has come to stay. Different sizes are manufactured and they work so perfectly that not only is a large amount husked each day, but the husks are taken off completely. The shredded fodder is in excellent condition for feeding, and if properly stacked or stored in the mow is almost as good as hay, provided the corn has been cut early.—Elbert Wheeler, in American Agriculturist.

Preparing the Seed Bed for Wheat.
Experiments in deep and shallow plowing for wheat at a large number of agricultural experiment stations, show that the depth of plowing is not of so much importance with this crop as a firm seed bed, the upper three or four inches of which is mellow and in good tilth. As with the other cereals, subsoling has not been found financially profitable.

Early plowing for fall wheat has been found especially desirable at a large number of the experiment stations. In many states it is a common custom among farmers to sow wheat after oats. Where this is done the earlier the soil is plowed after the oat crop is removed the better the results will be. This point has been well brought out by experiments at a number of different stations in all parts of the country.

The value of early plowing for fall wheat has lately been summarized by the department of agriculture as follows: Early plowing, followed at intervals by harrowing, prevents the growth of weeds, conserves the moisture of the soil, keeps the soil in good tilth and results in the formation of a seed bed best suited for the prompt germination and growth of the seed. The cost of preparing the ground is lessened, the yield of grain is increased and the practice is financially profitable.

Many farmers roll the seed bed. On heavy lands this is of no advantage, but on lighter soils it firms down the seed bed, thus insuring a more even germination of the seed and a more certain contact with the soil water contained in the subsoil, and would seem to be desirable, especially in dry seasons. In Utah rolling and harrowing after seeding increased the yield a little over three bushels per acre. On the value of rolling wheat lands in the west the United States department of agriculture has this to say: A roller should never be used on the western plains, except in the case of late plowing, and even then it should be used only before drilling. This is owing to the fact that roughness of surface is

valuable for holding moisture and checking the injurious action of dry winds. The seed bed should be made very fine and mellow before drilling, and whenever possible the drill rows should run east and west. Strict attention to such general principles as the foregoing will result in an increase in certain seasons of as much as five or 10 bushels per acre.—C. B. Smith, in New England Homestead.

Organic Matter in Soils.
Scientists who have given their attention to soils devote considerable discussion to humus and its formation. The soil is largely composed of clay, lime, silica (sand) and humus, and, according to Mr. Freer-Thonger of England, who has devoted much of his time to the investigation of soils, all vegetable matter which grows and dies on the soil is transformed into humus. Formerly it was supposed that humus alone furnished food for plants, hence the fertility of a soil was estimated according to its content in humus or organic matter. There was some truth in the belief, for in organic matter undergoing decomposition there exists nitrogenous matters which are gradually converted into ammonia and nitric acid. Carbonic acid gas is also a product of decomposition, which acts powerfully in rendering soluble the mineral elements of the soil. Humus soils have the property of retaining the soluble mineral salts, which are so easily washed away into the subsoil. Soils containing much humus are easily worked, and owing to their dark color are easily warmed by the sun. Such soils give good returns when dressed with phosphate, although on clay soils less potash may be required than on light sandy land. The application of lime favors nitrification of the nitrogenous organic matter. It is claimed that humus soils are rich in nitrogen, poor in phosphoric acid, with variable quantities of potash. Sandy soils are poor in all the plant foods. Clay soils are rich in potash, poor in phosphoric acid, but vary in nitrogen. These claims, however, depend largely upon the characteristics of soils, their treatment and the kinds of crops that have been grown thereon.

Humus is formed under many conditions. Leaves, roots, straw, manure and green substances that have been turned under all assist in the work. The value of humus does not depend exclusively upon its content of plant food, but mostly in the influence it exerts on the soil in relation to its physical condition, and its acid in rendering the plant food of the soil available for the sustenance and growth of plants. The upper portion of the soil usually contains more humus than the deeper portion, which marks or constitutes the difference between soil and subsoil. Humus is the great reservoir which retains the soil moisture and nitrogen. It absorbs moisture like a sponge and prevents escape of moisture that would otherwise be lost; but, while it stores up nitrogen and other plant food it slowly and constantly gives out carbonic acid gas as a result of decay of vegetable matter. This acid acts on stones, soils and all insoluble materials, setting free the potash and phosphates contained, thus providing plant foods for crops. Besides carbonic acid evolved from humus, other vegetable acids are formed, which combine with lime, potash and other substances to form humates. All of these processes are constantly occurring, the plant foods of the soil becoming available even when the farmer does not assist in the work, for it is well known that one of the most direct and effective methods of adding to the humus of the soil is by the plowing under of green crops, which collect carbon from the atmosphere, and if clover, peas, beans or other leguminous crops are used a large amount of nitrogen is also added to the soil. The use of green crops is almost necessary in order to promote the formation of humus, although it has been demonstrated that when the ground is covered with sod or any other covering there is a formation of humus under proper conditions.

Every farmer should endeavor to so rotate and cultivate his crops as to promote the formation of humus, but it may be stated that it has been found by experiment when the soil was well supplied with the phosphates and potash there is more humus formed than when such mineral substances are deficient, hence no farmer should depend upon green manural crops exclusively. Even barnyard manure, which promotes the formation of humus, will not give as good results as when both manure and fertilizers are used. It is the duty of the farmer to keep his land well supplied with all the essential elements so necessary for plants, for it is often a grave mistake to allow any substance to be lacking, as there is such a thing as a superabundance of one substance with an insufficiency of others, in which case the crop will make excellent progress for awhile and then fail to utilize more of the particular plant food with which it has been overfed. Humus assists in providing all the foods, and also holds the moisture for the supply of the crop. There is constantly occurring in the soil more or less loss of plant food. Exposure at certain seasons is injurious to soils. Shade is one of the conditions required by soil bacteria, and shade conduces to the formation of humus. In fact, all farmers know that when a heavy sod is turned under the result is a large addition of humus to the soil. Such soil may have been closely cropped by grazing cattle, but it gained in fertility, due to the shading of the soil, and also to the prevention of loss of soluble plant foods by leaching from rains and melting snows. Any kind of crop that covers the soil, therefore, assists in the formation of humus in the soil.—Philadelphia Record.

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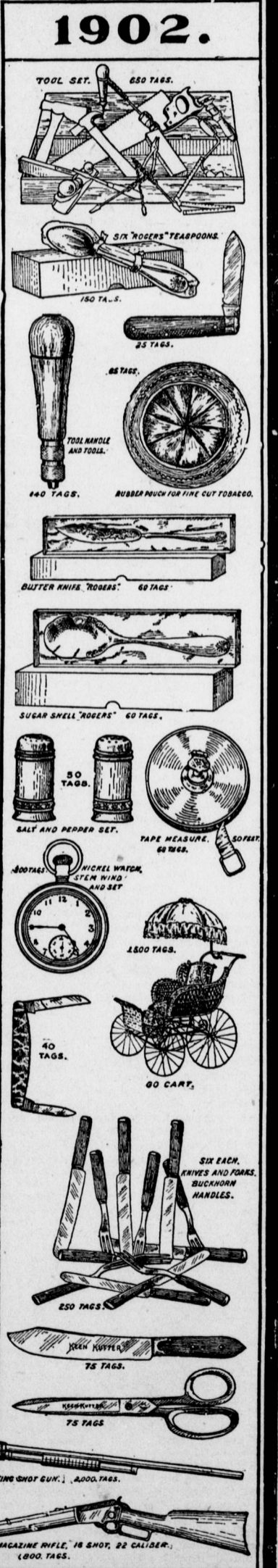
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