HOW TO GET RICH LANDS

XXV.—Crop Residues or Remains and Their Importance in Maintaining Soil Fertility

By TAIT BUTLER

WHEN properly used, crop residues or remains, with lime, phosphorus, and sometimes potassium added, must be the chief means of maintaining soil fertility in a sound economic or permanent agriculture.

Crop residues are those parts of the crops left on the farm after the marketable parts or products are sold or removed from the farm. What these crop remains are will depend largely on the cropping system and the type of farming followed. For instance, if the crop be used for grazing or a pasture, the crop residue will be the entire crop except those parts destroyed or retained by the animals. But here again the proportion of the crops removed by the animals will depend on the kind of livestock grazed. With beef cattle or hogs, there will be a smaller part of the crops removed when the animals are sold or removed from the farm than when dairy cattle are grazed and whole milk is sold.

Different cropping systems, the handling of stable manure, and the use of legumes and green manure crops in soil building will be discussed in future articles. In this article we propose dealing merely with those crop residues left on the land after the common crops of the South are harvested and sold from the farm. There are chiefly cotton stalks, corn stalks, straws, and stubble, sods and roots.

Cotton stalks are usually burned or plowed under. Their value as a source of humus and nitrogen has not been appreciated or they would never have been burned. Some little effort has been made to find a commercial use for cotton stalks, and in the boll weevil sections they have been occasionally used for livestock feed. A commercial use which only pays a small margin above the cost of gathering and marketing would be a calamity to Southern agriculture. Any use for our cotton stalks which does not pay a good price above their humus-making and plant food values in addition to the cost of gathering and marketing would be to the disadvantage of the Southern farmer if it came before he learned to appreciate more fully the necessity of putting back on the soil the plant foods removed and of constantly supplying organic matter as a source of nitrogen and humus.

Cotton Stalks Are Valuable

WHEN cotton stalks are burned their humus-forming value and all the nitrogen they contain are lost or destroyed.

It may be estimated that a crop which yields 250 pounds of lint cotton will have around 1,200 to 1,500 pounds of air-dry material in the stalks, leaves, etc. These leaves and stalks will contain from 25 to 35 pounds of nitrogen. This nitrogen is worth from $5 to $8, and is entirely lost by being driven off into the air by burning. To this loss of nitrogen must be added the organic or humus-forming matter which is so much needed in our lands that have been cultivated in cotton for long periods.

Corn is the next crop to cotton in the acreage grown in the Cotton Belt. With an average yield of less than 20 bushels per acre, the weight of stover or stalks and leaves is not much under one ton or 2,000 pounds per acre. This corn stover is often burned, and when this is done about 20 pounds of nitrogen is lost into the air and the humus-forming material is destroyed. It seems incredible that such a farm practice as burning cotton and corn stalks could possibly exist, but the fact remains that these materials and many others are burned every year in the South and frequently on lands needing organic matter and nitrogen more than all else for the production of better yields.

Also when the whole corn plant above ground is harvested either as silage or as dry forage the humus-forming value of the stalks and the nitrogen they contain are lost to the land if this forage is sold from the farm, but when fed on the farm about one-half of the fertilizer and humus-forming values of the stalks and leaves may be returned to the soil if the stable manure is handled with reasonable care.

On the corn fields of the South considerable quantities of other organic materials in the form of grass and weeds are also frequently grown and later destroyed by fire.

It is not the purpose of this article to discuss whether the corn stalks

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