



AGRONOMISTS HAVE FOUND that modern fertilizers not only help the crop, but also help build up soil fertility in general. Whereas farmers used to apply all the fer-

tilizer as the crop was planted, they now plow down the bulk of the bulk of the nutrients and apply only starter in the row

## Chemical Fertilizers Help Build Organic Matter by Feeding Bacteria

From the cotton fields of the South to the corn fields and pastures of the northern states has come one of the most revolutionary fertilizers in recent years.

Anhydrous ammonia was developed by research workers in Mississippi during World War II. The revolutionary part of the fertilizer is that it is applied as a gas rather than as a solid or liquid.

Anhydrous ammonia is a mixture or compound of nitrogen and hydrogen. It is formed by combining atmospheric nitrogen and hydrogen from natural gas under heat and pressure.

In most fertilizer manufacturing processes this ammonia is combined with another element or compound to make a solid. This of course adds to the cost of materials and therein lies one of the most favorable aspects of anhydrous. It costs less per pound of nitrogen.

Ammonium nitrate, for example, is about 32 per cent nitrogen. Anhydrous ammonia contains more than 80 per cent nitrogen.

In the cropping systems used in Pennsylvania, barnyard manure is used to a great extent as the nitrogen source. This manure also goes to build humus or organic

matter. There are many misconceptions about organic matter.

Dr. Firman Bear, USDA soil scientist, says, 'Plants are the producers of organic matter, not the users of it. They feed primarily on the inorganic matter that is released by the soil and the decay of organic matter and not the organic matter itself.'

He adds that one of the best ways of increasing the supply of organic matter is by the use of chemical fertilizer.

When large amounts of strawy manure are added to a field, often the first years crop production will be lowered. The bacteria which break down the straw and other woody substances feed on nitrogen. These bacteria will get the available nitrogen from the soil before the plant.

But if added nitrogen is applied there will be enough nitrogen in the soil to feed the bacteria and still leave enough for maximum plant growth.

During the seven months ending Jan. 31, exports of bread and coarse grain from Argentina totaled 2,593,000 tons compared with 2,389,000 tons in the same period a year earlier.

Lower exports of corn and wheat accounted for most of the reduction.

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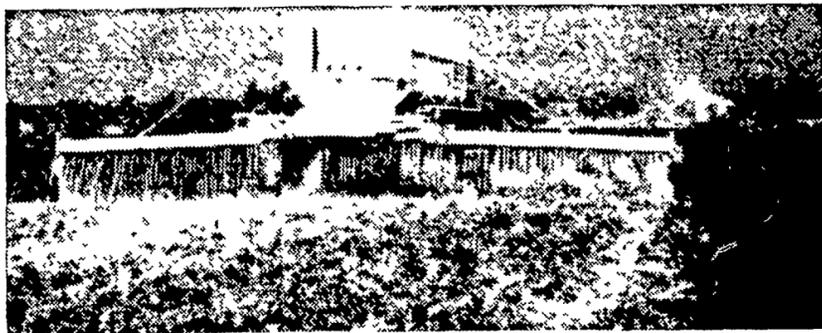
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