

own development. Both foliage and seeds of the legumes are rich in a digestible form of nitrogen known as "legumin." When eaten by animals this is assimilated in the formation of albumen, lean meat, the casein or cheese principle in milk, nerve tissues, hoofs, horns, hide and hair. No animal could live without this element in its food, for it is the only chemical course of tissue repair.

When the roots and stubble of clover are plowed under they decompose and their nitrates become incorporated with the soil. A soil thus enriched produces a heavy growth of dark green foliage in all crops that may be planted therein.

Ten chemical elements are necessary for the growth of all agricultural plants. Economically they may be grouped as follows: "Oxygen, carbon and hydrogen are obtained in unlimited quantities from air and water; potassium, magnesium, iron and sulphur are found plentifully in most normal soils—enough to last for hundreds of years; calcium is plentiful in most soils, but poorly drained lands and those naturally deficient in lime become sour and need the artificial addition of calcium; phosphorus and nitrogen are limited in nearly all soils. Phosphorus is soon exhausted by heavy cropping and in a system of profitable farming must be replaced by applying to the land bone-meal, acid-phosphate and rock-phosphate.

As nitrogen is essential to the growth of plants as well as animals, the securing of this element is of vital importance in agriculture. Indeed, nitrogen is the limiting element in most soils, the exception being muck or swamp soils containing large amounts of decaying vegetation.

Ordinarily the problem of securing large yields of grain, vegetables and other farm products is one of supplying enough nitrogen. This is why the thrifty farmer includes clover, cow-peas, soy-beans, etc., in his system of crop rotation. If he is wise he will plow under a legume crop in full bloom at least once in four years, besides returning all the stable and barnyard wastes to the fields in order that their productive power may not be impaired.

Wild legumes add fertility to the soil in similar fashion by their yearly deposits of dead roots and branches.

From all these facts it is seen that instead of the lupine being a "wolf" or a "tare" it is one of Nature's happiest gifts to man. Without this tribe of nitrogen gatherers there could be no human life nor other life on the globe. Thru this knowledge it is easy to maintain the soil as a permanently productive asset, not as a natural resource, but as a "factory" for the conversion of crude materials into finished food products.

—Farming Business.

