

Agricultural.

How Apple Trees Grow.—If we make a hole with a drawer in the substratum of the earth, fill it with sand and mellow soil and plant apple seed in autumn near the surface of the ground where the hole was made; the next spring the seed will throw out a root directly downward, until the end reaches the strata of perpetual moisture, provided the earth is not so firm that a root cannot extend further; and a stem will commence pushing upward, at the same time bearing the apple seeds on its tendril, to the surface, where the kernel will separate in equal parts forming the seed leaf of the young tree. Meanwhile, the top part continues to obtain a firm hold of the soil, which supports the tree against injury incident to dry weather. In a congenital soil resting on a porous top soil, a tree of a few inches in diameter will extend farther by actual measurement into the earth, when the tree is three or four years old, than the top has grown upward. But, when the trees have been produced from pieces of roots planted in nursery rows, they rarely send down tap-roots. Consequently such trees can be taken up and transplanted more advantageously than if the top root was severed and left in the ground. So long as vegetation does not suffer from protracted droughts it will make no difference whether a tree has a tap-root or not. But when the roots near the surface can not imbibe one drop of moisture out of the dry soil, if there be no tap-root to bring up moisture to the leaves, the fruit must fail, and the tree will receive such injury that the half-formed buds can not yield fruit the season.

Every tree ought to spring from the seed where that tree is to grow. If a hole a few feet deep, and filled with sods or mellow soil, and an apple seed or a pair seed, is planted or hickory nut were planted in autumn, and the soil kept clean, or were mulched during summer, when the land is poor, a tree would push upward over twenty feet in one decade of years, and if the ground were rich it would grow thirty feet in the same period.

WHEAT CULTURE AND ITS EMBODIMENT.

Wheat culture is the most important of all agricultural products, and has more influence upon the world than any other. Wheat is the staple for bread, and the progress of civilization and intellectual culture can be traced by the extent of its growth and consumption.

Over 200,000,000 bushels of wheat are annually raised in this country, and we have the soil and machinery for an almost unlimited expansion of the product. The best soils for wheat are the clays, clay and lime, clay and sand, clay and loam. There must be clay for a succession of good crops. Much of the vegetable deposit is not adapted to wheat culture, because it produces large wheat stocks, and but little oil or grain.

Underground water sufficient to promote the growth of wheat on most soils, than any one thing. Clay contains the food for the wheat plant, but it is also the most retentive of water, and an excess of water is death to the winter wheat. After draining off a heavy clay soil, a few hundred bushels per acre of sand completes the work of improvement, and such a soil can be made always to yield remunerative crops. A pure sand cannot be made a remunerative wheat soil. Clay can always be made so by the application of sand, lime, wood ashes and barnyard manure.

Both early and late sowing have their advocates. If there were no Hessian fly in the land, the last of August would be the best time to sow wheat in the Northern States but early sown wheat is liable to be destroyed by this pest. As it is, probably the best time would be about the middle of September, especially that it may not occur before that date.

Rich, moist, well-prepared soil may be sown later than its optimum.

There is a great gain in frequent plowings and the use of a cultivator before sowing.

The selection of seed for wheat is as important as the selection of stock for breeding.

Seed wheat should be grown separately, harvested separately, threshed separately, and kept separately for this special purpose.

The wheat crop can be increased by attention to this subject. In sowing ten acres of wheat, select one acre of the best land, give it special attention, sow ashes, plaster, salt and lime mixed together upon it; add a few loads of rich compost, give it extra cultivation, sow pure wheat, and while growing go through it often and pull out all foreign stuff. It should be well ripened when cut, and not threshed with a machine nor allowed to heat in the bin.

Saint is a greater enemy to the wheat crop than any other, but it is a formidable pest. But it is also one of the pests which the wheat growers are obliged to encounter. The saint is found in the condition of the soil and damp warm weather. The disease occurs to the greater extent on soils deficient in silicates, which are needed to give stiffness and strength to the straw, and abundant in vegetable and animal deposits, which give a rapid growth to the plant. When wheat weather sets in, the cells of the stalk burst, the juice runs out, and the grain receives but little nourishment. The wheat is shrunk and nearly dead.

The preventive of this disease is the application, at the time of sowing, of sand, wood, ashes, or potash and lime.

The wheat point louse is sometimes abundant on all the ears of wheat in the field, sucking the juice and impoverishing the grain. The mild or red weevil, by its depredations, is the cause of the failure of the wheat crop in some sections, by causing the abstraction of many of the grains in the heads attacked by it. The Hessian fly makes its attack upon particular varieties of young fall wheat attacked by this pest, and causes by the loss of its juices. The only preventive is good seed, high culture, and the application of ashes and lime.

National Agricultural.

Chores of all kinds are destructive to the productivity of orchards. The soil must be restored and kept in good condition, by applying manure mixed with vegetable mould, decaying leaves, lime, wood ashes, and salt. A compost formed of these substances would be excellent; or one formed in part by soap-suds and refuse slops, chip-dirt, turf, etc., well rotted. Then trim them of dead limbs, and those that cross and gall each other, and of all such chores that feed upon trunk or limb.

The buckwheat crop is good in this part of the country.

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