

Nut Culture.

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Nut Culture.

Until recently, the world has depended chiefly upon the wild trees for its supply of nuts. They were never used as a staple article of food, but were merely incidental features in our living. It is probably for this reason that nuts have never been cultivated. We are not impelled by necessity to plant and rear such trees as hickory and walnut, even though we may like their fruit.

Our forests are rapidly disappearing and there is liable to be a time soon, when nuts must be raised in our orchards, if we are to have any at all. The edible nuts, though they never have been so used, may profitably be made staple articles of food. They have a high nutritive value, and could well take the place of some of the other foods.

If more of the natural products of the earth were eaten and less of artificially prepared and adulterated articles, mankind would be much the better for it.

One reason, perhaps, why so few nut-trees are planted, is the prevalent idea that they require so many years in which to make their growth that the person who planted them would never reap the reward. This, however, is not true. Under favorable conditions walnuts will bear the fourth year from the seed.

Nut-trees can be made to answer other purposes; for instance, in this state of dry, hot, south winds, we find a great need for wind-breaks; and if nut trees are not planted, some other nearly worthless ones will be.

Here too, comes the question of shade trees for the yard and roadside. Many of the nut trees are ornamental, and give a good shade; yet men will persist in planting miles and miles of highway with such varieties as elm, maple, and boxelder, which require just as much care and attention, and yet bring no return; while nut-bearing trees would thrive just as well, and at the same

time help to fill the empty purse, not only for the present, but in generations to come.

Several of the nut trees are among our most valuable timber trees. The black walnut, for example, is a profitable tree when grown for its lumber alone, and adding to this, its value as a nut-producing tree, we find it to be one of our most profitable crops.

Location.

Nut trees require a deep soil in which to grow their long tap roots, which are necessary to firmly anchor a tree as large as the hickory and black walnut. They may be grown in groves, on the uplands, though they are more profitably cultivated on waste land which is good for nothing else. Sloughs and flats along rivers, being unavailable for anything else, may be profitably utilized for the growing of nuts.

The leading growers do not agree as to the best method to be followed in establishing nut orchards. Some

advise growing in the nursery for one, two or three years, and then transplanting, while others advocate planting seeds where the trees are to remain. The only argument in favor of the latter method is that it avoids cutting the tap root, and even this is a doubtful benefit. It has not been demonstrated by experiment that within the ordinary life of a healthy tree grown by either method, there is any perceptible difference in the aggregate product of nuts. If grown in the nursery, the tap root must be pruned, in order that there may be fibrous roots near the surface at replanting time.

Propagation.

Trees may be produced directly from the seed, or the seedlings may be budded or grafted. In the former case, only the largest, best-flavored and thinnest shelled nuts should be planted, that by selection the trees may improve in quality and quantity of nuts produced.

The nuts should be stratified in moist sand during the winter, that

They may absorb moisture enough to burst the shell. They should be planted one and one half to two inches deep, or even deeper if the soil is dry. If in the nursery the rows should be three and one half to four feet apart in the row. They may sometimes be safely planted closer, if a large proportion are liable not to germinate. If planted where the trees are to stand, the ground should be well worked up around the site of each tree, and several nuts should be planted, a few inches apart, to insure a good stand of trees. Extra trees can be easily thinned out afterward.

Budding and Grafting.

The methods of perpetuating varieties by grafting and budding, vary with different species of nuts. In some varieties, it is hard to make buds or grafted scions grow, to a greater extent than fifteen percent. But, considering that it costs no more to care for a good grove of nuts than for a poor one; and that grafted or budded trees

come into profitable bearing three years earlier than seedlings, it will pay to use them, even though the young trees may cost a little more.

Improvement.

There is a vast field open for improvement of nut-bearing trees. It is probable that nuts may be improved by cross fertilization, to as great an extent as were our common fruits. This improvement should be toward increased productiveness, larger kernels and thinner shells.

The nuts which might be profitably cultivated in Kansas, are the black walnut, pecan, hickory, hazelnut and chestnut. These all grow wild within the state, and are, therefore, suited to the climate and conditions. We can raise nuts here just as well as in Europe and save the two million dollars which we spend for European nuts every year.

Walnuts. (*Juglans*)

Walnuts are of three species of commercial importance. These are the

Blackwalnut, *Juglans nigra*, and the Butternut, *Juglans cinerea*, which are native; and the Persian or English walnut, *Juglans regia*, which has been introduced from the old world. The Persian walnut will not grow successfully in Kansas, but does well in California.

The butternut is very fine flavored, but because of the difficulty of cracking the shell and removing the kernel, it is not of great commercial importance.

The Black walnut is of the greatest importance in Kansas. There is little incentive to graft or bud it, because there is very little difference found in the size of the nut or the thinness of the shell. Ring budding and cleft grafting at the collar of the stocks, are reasonably sure to succeed. The walnut is a handsome tree, and is one of the best to be planted along the roadside. The nuts would scarcely make them profitable in a grove, but as shade trees they answer their purpose well. Their timber value is perhaps as great as the profit derived from

their nuts. Walnut lumber is used for gun stocks and cabinet work, and for anything that requires a high polish. Its value is likely to increase, as the native forests are cleared away. The greatest profit from the lumber will not be realized during the life of the planter. The trees are slow growing and long lived, and an acre in walnut trees in fifty years will have brought in more money than if planted to field crops every season.

The Hickories. (*Hicoria*.)

The principal species of Hickory are the Pecan, (*Hicoria pecan*) the Shagbark, (*H. ovata*) and the Shellbark (*H. laciniosa*.)

Until quite recently the propagation was confined to the growing of seedlings from selected nuts. The improved pecans, however, do not reproduce themselves perfectly, so budding and grafting are used. Annular budding, root grafting, and cleft grafting are the most successful.

The Pecan is of the greatest pomological importance, and is found wild in

eastern and southern Kansas. It does not thrive here quite as well as in Texas, where the best nuts are produced. It bears a few nuts when quite young, but a paying crop is seldom borne until the trees are ten years of age. They come into full bearing at the age of twenty or forty years. A tree will produce from one to twenty bushels of nuts each year, which sell at eight to ten cents per pound, forty four pounds being required for a bushel. Some of the popular varieties sold for planting in 1891 and 1892 at from fifty cents to a dollar and a half per pound.

With the recent invention of a machine for cracking these nuts, pecan meats are coming into general use. Three pounds of nuts make about one pound of meats which sell at from forty five to fifty cents per pound. Inferior and small nuts are used for making oil, and if some means could be devised for removing the shells before expressing the oil, the refuse would surpass either linseed or cottonseed meal for feeding animals.

The Shagbark Hickory bears an angular nut varying in form from long oval to quadrangular. The kernel is plump and sweet, and parts readily into halves, free from the shell. There are few profitable crops, but it is susceptible to improvement which may make it profitable. The price per bushel varies from twenty cents to three dollars.

The Shellbark Hickory has large, edible nuts, but they will be of little pomological importance unless they can be developed to grow thinner shells.

All the hickories are very useful for their wood, which is used for axe handles and wherever strength and elasticity are required.

Hazelnuts. (*Corylus*.)

Hazelnuts are perhaps the most profitable nut crop that can be grown here. There are several species, *Corylus avellana* and *Corylus tubulosa* being European, and are the most extensively grown. The American species are too small for profitable cultivation.

Hazelnuts are propagated by budding,

grafting, layers, suckers, or even by cuttings. They thrive in any soil that is rich enough to produce a good crop of corn. They are monoecious, the pistillate flowers being borne on old wood and the staminate flowers on the new wood. The staminate flowers are often so early as to be killed by frost, in which case, pollen from wild varieties must be secured by hanging a branch in the top of a cultivated tree when in blossom. European Hazelnuts should not be grown near the native wild ones, because of a fungus disease which will completely destroy them.

Chestnuts. (*Castanea*.)

There are three principal species of Chestnuts, the American (*Castanea dentata*), the European (*C. sativa*), and the Japanese (*C. Japonica*).

These are, by some authorities, considered to be different varieties of the same species. The American is most widely grown in the United States, though there are some varieties

widely grown which are descendants from the European. The imported nuts do not thrive except in rare instances, and it is from these few that the best nuts now cultivated were propagated.

They are propagated by grafting or small seedlings of the American chestnut. Some of the most popular varieties are the Paragon, Mumbo and Ridgeley. Reports differ as to the success in grafting and budding. Growers report that the union must be as perfect as possible, for success. In the eastern states where the chestnut is native, the wild trees are cut down, and improved varieties are grafted on the new shoots which come up from the stump.

The age of bearing varies from two to twenty years, according to variety. The prices vary in different states from fifty cents to ten dollars per bushel, a tree bearing all the way up to five bushels per year.

In planting nuts, growers should make sure that the variety they are

planting will be successful before
going into the business to extensively.

With careful methods, the next twenty-
five years will probably show marked
advances in the cultivation of the nut
in Kansas.