

In the Field of Agriculture

HOW SEEDS TRAVEL

Some seeds make journeys with wings, and others travel from place to place by attaching themselves to the clothes of men or the hair of animals; still others make their journey in the stomachs of birds. These are facts that will interest the young people who are taking an interest in agriculture and are working in a garden at home or at school. According to the United States department of agriculture's specialist, the seed as the starting point in the life cycle of a plant may well be studied first by young gardeners.

The seeds of the maple tree are particularly interesting. They are provided with wings, and when they become detached from the parent tree a gentle breeze will carry them a considerable distance from the branch to which they were attached. There are many forms and modifications of the winged seed, as the linden, the hornbeam, the elm, and the pine. These are all common trees from which seeds for illustrative purposes can be secured.

Some seeds are also provided with parachutes or umbrellas, not for protection from rain and storm, but for purposes of locomotion. The seeds of the thistle, the milkweed, and the dandelion—in fact, the seeds of all plants which have a cottony growth—are provided for these aerial journeys.

Besides these, some seeds are provided with hooked appendages by which they can attach themselves to the clothing of men or to the hair of animals, so that they become transported from place to place. Other seeds have hard seed coats, or shells, which are covered in many cases by edible fruit. The fruits are eaten by birds, but the seeds are not digested,

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OINTMENT

and in this way become distributed from place to place. The groves of cedars which are characteristic of the landscape in many sections of the country, it will be noted are chiefly placed along the lines of fences or fence rows. The fruit of the cedar is an edible one, but the seed is not digestible, and in this way the existence of these hedge rows of cedars is explained. Cherries, grapes, and other fruits are to a considerable extent disseminated in like manner.

The hard nuts of our nut-bearing trees are not used as food by birds or large animals, but are usually sought by squirrels and small rodents, which are in the habit of gathering and burying them in various places or storing them in large quantities for winter use. The result is that a considerable percentage of those which are buried in this manner are never rediscovered by those hiding them, and in time nature causes the hard shell to crack open and the warmth and moisture of the soil brings the germ contained in the kernel into life and a tree springs into existence. It will be noted that the nuts which were buried by the squirrels did not germinate immediately after being buried, but waited until the warm weather of the spring came before they put forth their tender shoots. This is not because they willed it, but because the hard outer walls of the shell would not admit the air and water to the germ, so as to stimulate its growth.

It was necessary that the shell be frozen and broken by the action of the frosts and the weather before moisture could gain an entrance to cause the swelling of the germ. This peculiarity, when taken advantage of commercially, is called stratification. Seeds with hard shells, such as cherries, peaches, plums, and the like, have to be stratified—that is, they must be planted in the fall where the plants are to grow or they must be packed away in boxes of sand in a position where they will freeze and remain frozen during the winter. If seeds of this character are stored and kept dry during the winter they will not germinate if planted in the spring. Seeds with thin seed coats, however, like peas, beans, etc., if treated in like manner, will be destroyed by the action of the cold, and no plants will result from planting them in the autumn. Such seeds must, from the nature of the case, be retained in a dry and comparatively warm place during the winter season, in order that their vitality may not be destroyed.

NATURE'S RELIABLE GUIDE FOR GARDEN PLANTING

Nature furnishes guides for garden planting which are even more reliable than the calendar, according to the United States agricultural department's garden specialist. The old residents of the soil such as the maple, dogwood, and white oak are the best interpreters of nature's moods in spring, and quickly reflect them, so that the gardener who follows their silent suggestions may arrange the planting of his vegetables accordingly.

When the silver maples begin to put forth their leaves and the "catkins" appear on the willows and poplars, nature is indicating that the season is right for the planting of such vegetables as lettuce, mustard, onion seeds and onion sets, parsley, the

round-seeded peas, early Irish potatoes, radishes, spinach, and turnips. This, of course, is provided that the soil is in good order, which can be determined by taking a handful at a depth of 3 or 4 inches from the surface, compact it in the hand by closing the fingers, and if, upon opening them, the ball of earth gradually falls apart, it is ready to be spaded. Manure should be buried a full spade depth below the surface and the soil should be made fine and compact with an even surface.

Not until about 10 days after nature has set the date for the above-mentioned vegetables should such garden truck as beets, carrots, and kohlrabi be planted. A second sowing of peas can also be made at this time.

The dogwood and the white oak begin to show signs of awakening at a time when other vegetables may be planted. These include bush and pole beans, sweet corn, cucumbers, muskmelons, watermelons, and various other kinds of squash. The gardener and housewife will rarely plant too early if they but wait for nature to tell them what to do.

INVESTIGATE FARM PRODUCTION COST

Investigations made by the college of agriculture of the University of Missouri show that on fourteen farms the average cost of keeping a work horse a year was \$88.23. This cost was divided as follows: Feed, 77.4 per cent; labor, 10.7 per cent; miscellaneous, 11.9 per cent.

It was found that the average cost a day for horse labor was 7.9 cents. This cost varies with different months being 5.2 cents in May, and 15.9 cents in February.

The following table gives the hours of labor required to produce an acre of various crops:

Crops	Man hours	Horse hours
Corn	23.92	42.32
Oats	10.83	19.48
Wheat	11.78	21.37
Soy beans	11.78	21.37
Cow peas	24.25	40.06

The dollar cost of producing some farm crops was found to be as follows:

Corn	\$13.53	Clover	\$ 8.10
Oats	10.87	Cow peas	13.60
Wheat	12.30	Soy beans	13.53

The cost of keeping a milk cow for supplying home needs only was found to be \$49.95. This was apportioned to feed, labor and miscellaneous in the following proportions: Feed, 55.92 per cent; labor, 37.66 per cent, and miscellaneous, 6.42 per cent. The cost of keeping a cow on a dairy farm was \$85.10.

The cost of keeping a brood sow a year was \$25.91. One farm was able to reduce this cost nearly one-half by using winter pasture crops.

The cost of keeping a hen a year under farm conditions was 65.7 cents.

MANURE THE BEST FERTILIZER

Data from the Nebraska Experiment Station which were obtained in co-operation with Nebraska farmers in several counties show that the average annual yields of corn from manured fields during a period of three years were 10 bushels greater than from adjoining fields which were not manured. The average annual yields from the unmanured fields

were 26.81 bushels an acre and the yields from the manured fields were 36.76 bushels an acre. According to data from other experiment stations the lasting effect of farm manures is at least 20 years; that is to say, a farm may continue to contain increased annual yields for several years after a good application of farm manure or the turning under of organic matter in some other form.

The increases in crop yields for a period of years at several of the best experiment stations were sufficient to give to the manure applied an agricultural value of from \$1 to \$7 a ton, depending upon the climatic conditions, rate of applications, kind of manure, crops manured, etc.

ORGANIZE NEIGHBORHOOD MARKETING ASSOCIATIONS NOW

Now, and not just before harvest, is the time to organize marketing associations for whatever products you are going to raise this year, says The Progressive Farmer. No matter what it is—cotton, corn, tobacco, peanuts, truck crops, or what not—better prices will be obtained, better grading will be assured, and more business-like consideration will be allowed in every point if a group of farmers will sell together instead of marketing individually. And if they are going to sell together, they should have success predestined by making arrangements now. Those who wait till the crops are about ready to harvest will find unexpected and unimagined delays, and will only get experience in 1915 when they will probably need profits more than experience. As the West Point (Va.) News well says in a talk to its farmer readers:

"The world wants all you can raise this summer. It needs far more than can be produced on our American farms, but how is your produce to reach the place where it will bring you the most money?"

"Unless the farmers organize and market their crops under some cooperative system next summer, they are going to be greatly disappointed with prices. The middlemen are organized; they know just where to place every product and they are going to push the consumer up to wartime prices, and hold you, Mr. Farmer, down to over-production rates if possible.

"Your only hope for a fair division of this great wave of prosperity, which is surely coming during the next eight months, is to get together. Form associations and plan your crops so that your output may be combined and shipments made in car lots, to markets already arranged for."

HOW FARM AGENTS ORGANIZE YOUNG FOLKS

A bulletin of the Missouri agricultural college tells of the efforts being made in that state in behalf of farm young folks:

"In eight of the fifteen counties in Missouri which have farm advisers there are 770 schools. Five hundred of these schools were visited by farm agents and in many of them the boys and girls were organized to compete against other schools. This competition consists of athletic contests, baking, sewing, cooking, stock judging, and grain contests.

"First in these eight counties the boys and girls of each district had an all-day meeting, their parents being present, in which they competed in numerous events. Then all the schools in a township met for a big day and the fittest alone survived for still another final competition that was to take place. This consisted of the Missouri round-up or county meeting, held in five counties last year. The round-ups were under the super-