Alfalfa---"The Queen of Crops"

(Address of F. F. Gilmore, editor Kentucky Farming, before the Alfalfa Growers' Association during Farmers' week, Lexington, Ky., January 6, 1915.)

WITHOUT in any manner speaking in a slighting way of any or all other legumes in their places in the rotation of field crops of the state, I will address myself particularly to this greatest of all forage plants, this Queen of Crops, alfalfa.

My subject is "The Place of Alfalfa in Kentucky Agriculture." The question is, has it a place in the permanent agriculture of this state, a place in the proper rotation of crops? Has timothy an established place? Has clover a proper position in our rotation? These questions answer themselves; every Kentucky farmer knows the necessity of these two crops from childhood; they are a part of all of our farm-crop rotations. Our horses and cattle need both timothy and clover hay and our soils require the rejuvenation of a crop of clover regularly. Now the point is, has Kentucky room for another meadow crop in our permanent agriculture, another legume or clover that claims for itself more permanence than red clover? Red clover is good enough for Kentucky, but for some reasons, not now discussed, except by inference, red clover has failed us for years and is growing more and more shy, therefore I claim we must have something to take its place, and if we can find a crop that is as good or better in every way, more permanent, lasting for five, 10 and 15 years, instead of two, a clover that will produce one or two tons at a cutting and three to four cuttings per year and that will deposit more nitrogen and humus in our soils than clover, then it is evident Kentucky farming must have this clover, if it will grow in our state. That clover, gentlemen, is alfalfa, and it will grow on every farm in Kentucky, that is, it can be made to grow here. This is a broad statement that alfalfa will grow on every farm, because you and I have known men who have tried it and failed, others have seen it tried and seen it fail.

But for the good of Kentucky agriculture many of you men present, and hundreds of others in our great, old state, have proved that alfalfa will grow here, and grow bounteously, splendidly and yield enormous crops of the finest hay in the world.

We must have more faith. It takes faith and lots of work, too, to grow alfalfa, but it pays, as many of you know.

Kinds of Soil.

Alfalfa loves a deep loam full of humus. It will do best on such a soil, but it can be made to grow on almost any field in the state of Kentucky. I have seen it grow at its best on the alluvial lands of our rivers, where it seems all the elements necessary for its production are present in the soil. I have seen it do well on the level rich loam soil of Central Kentucky, as doubtless all of you have seen. It is growing well also in the western part of the state, and in the southern part, on all characters of land. There are hundreds of acres of it growing on the steep hillsides and mountain tops of Eastern Kentucky. Alfalfa is not over-particular of the character of land, just so the necessary elements are in that soil.

Preparation of the Soil.

The first requisite that alfalfa demands is drainage, the next is lime and then phosphate. If any lands have these requisites, then alfalfa will grow there. If they are deficient in one or more of these requirements, then the land must be supplied with them.

After drainage lime is the first necessity and this must be in the land in abundance. Four tons of ground limestone per acre is good, six tons better and eight tons still better. For ordinary use, however, four tons per acre is sufficient, and this should be put on after the land has been thoroughly broken in the Spring, broadcast and it can be best applied with a limestone spreader. The lime should then be thoroughly disked into the ground. I should have said in the beginning that the preparation for alfalfa should start at least one year ahead. Take, for instance, a field that will be planted in alfalfa in August; it should be sowed to rye or rye and vetch or crimson clover. This clover crop should be turned under in the Spring, the land broken deep and subsoiled, or a deep-tilling plow should be used, and the land left for a while for weed seeds to germinate. The lime should then be applied any time during the Summer previous to July first, disked in as already stated and thoroughly worked in order to get a compact subsurface seed bed, and the capillary attraction restored. Then during July or about the first of August 500 pounds of acid phosphate per acre should be applied and the land thoroughly disked again. If the field is well filled with humus it would not be necessary to turn under a green crop, but it is necessary to have a plenty of decayed vegetable matter thoroughly mixed through the soil, and the purpose of this humus is not only to furnish plantfood, but to put the ground in a proper mechanical condition so that the air and sunlight can get down into the ground, and so the soil will hold water like a sponge and not compact like a brick.

A heavy coating of barnyard manure would be good, with or without the green crop. With plenty of manure or a heavy green crop, ground phosphate rock, 1000 pounds per acre, would take the place of acid phosphate. Remember, alfalfa loves phosphate, but it demands lime, an alkaline condition of the soil. Limestone we have in abundance in the state, but it must be ground.

Preparation of Seed Bed.

During August the field should be disked in order to kill all germinating weed seeds. The land should be leveled and the top two inches should be put into the finest kind of tilth, just as you would prepare a vegetable garden.

When to Sow Alfalfa.

The ideal time for Kentucky is from the 20th to the 25th of August, provided there is moisture enough in the land, and if a large amount of humus has been plowed under and the proper surface culture has been practiced, there will be enough moisture preserved to germinate the seed readily. As late as the first of September may be safe, as we have proved in many cases, but it is best to sow between the 20th of August and the first of September in order to get a good growth of alfalfa before cold weather sets in.

The reason for sowing in August is twofold; first, the plant can get a good start in the Fall and make a vigorous growth in the Spring, smothering out all weeds, and then it is ready to produce its normal growth and number of cuttings during the year; the other reason is that Spring seeding is apt to suffer from the hot, dry weather in May. I have seen Spring seedings succeed, but would not recommend it on all soils. I call to mind one field that was seeded last April that produced three crops during 1914, but that grew on deep, rich, river bottom land. Ordinarily I would urge seeding to be put in during August in preference to Spring seeding.

What Kind of Seed to Use.

By all means I would recommend Western-grown seed and never imported seed. In the first place, the Western, or home-grown, seed, that is, from Kansas or Oklahoma, is acclimated. It has a robustness that no other grown seed seems to possess. I would never use imported seed, for the reason that you do not know what you are buying, and ten to one it would be Turkestan alfalfa, which produces a small plant of slow growth; and this imported seed has been domesticated, some calling it dwarf alfalfa, but I consider it as having no place in the agriculture of Kentucky.

In buying seed you should get samples and have them tested at your agricultural station and test them yourself, too; this is easily done between two pieces of blotting paper.

I have been often asked how much seed per acre should be used in Kentucky. I am a great believer in a plenty of seed, and would recommend from 25 to 30 pounds per acre. I have never yet seen a field of alfalfa that was too heavily seeded. If every seed that you put into the ground could be counted on to grow, then half this amount should be sufficient, but I believe in having the whole field covered not only with a heavy growth of hay, but with a vigorous growth of young plants.

How to Seed the Ground.

Some farmers who are clever in seeding clover either by hand or by the small seeding machine carried across the shoulder are expert enough in getting a good stand. Others use the wheelbarrow seeder and some use the seeding attachment to the wheat drill. I have seen good stands secured by sowing with the hand broadcast and crosswise. I would by all means recommend putting alfalfa in with the best seeding machine especially made for the purpose that can be purchased. I visited a field this past Summer that had been so seeded, and I do not think there was six inches of ground that did not have its proper proportion of plants growing. Proper attention to the seeding will secure uniform depth and even growth and a full crop. I would lay great stress on the seeding of alfalfa as well as other crops and would urge that good seeding machines be used for the purpose, as we must remember that alfalfa is a permanent crop for years, hence we should make our preparations, especially in seeding, very thorough.

(Concluded next week.)

Agricultural Exhibits at Fair

BY LEONARD CARPENTER.

ONE has only to look at the progress already made towards the completion of the palaces and buildings and at the exhibits being rapidly put into place to answer the question as to whether the Panama-Pacific International Exposition will be ready on February 20, the opening day.

The same is true of the question as to whether the European war has seriously interfered with the National and international character of the exposition. There has been no withdrawal from participation on account of the war and in several instances appropriations have been augmented.

The agricultural exhibits will be seen under four different heads. These are: Agricultural, horticultural, food products and livestock.

In the Agricultural Palace, which covers seven and one-half acres of ground, are on exhibit the farm machines and tools as well as the raw products of the earth.

Working Models.

The manufacturing companies have sent their products for demonstration purposes but not content with this have in all instances added working models and moving exhibits.

The International Harvester Company has mounted every type of machine which does its work by moving parts in the machine so that they are constantly operated by means of individual electric motors. In addition actual demonstrations will be given in the demonstration field provided for this work.

The Hold Caterpillar, the C. L. Best gas tractor, the I. H. C. tractor, the Case tractor and the Yuba Ball Tread are a few of the farm and road tractor companies which have their machines on exhibition.

The gas engine exhibits are very numerous. Engines are shown driving every sort of farm tool and pump. The model irrigated farm is shown with a gas engine driving the pump which supplies water to the main ditches. From these the water is led through the laterals to fields of growing crops and under the expert handling of the attendant, the different methods of irrigation are performed; such as the check, the rill and the flood methods.

Washington Exhibit.

The State of Washington has a big exhibit installed in a pavilion made of native wood covered with bark. Here are the grains, the fruits and the fodders of the state in all of the varieties and exhibited by the different counties.

Missouri has an elaborate exhibit dedicated to corn and the hog. The aim has been to show the wonderful corn which is grown there, due to the constant selection of better seed.

The United States Government is making an exhibit of the postal service as related to the farmer. In this exhibit will be shown the possibilities of the parcel post as related to the producer on the farm and the consumer in the city. This will be shown by means of actual specimens and also by charts and maps. Various methods of reaching the consumer in the first place and of building up the business afterwards will be fully explained and illustrated.

The Philippine Island and the Japanese government exhibits are both very full. These show the tools and methods used in the very intensive farming which is necessary in these countries.

New Zealand has a large space filled with the products of her fields and especially with the raw and finished fiber products. These are hemp and flax; rope, twine and woven goods. The pastoral activities are shown by wool, fleeces and hides and by frozen meat.

Palace of Horticulture.

The Palace of Horticulture is divided into two sections in one of which are growing tropical and equatorial plants and in the other are the exhibits of fruits and flowers from the different growing sections here and abroad.

Palm trees, bananas, orchids, mosses and other tropical trees and flowers are growing under the huge glass dome in the warmed air.

The exhibits of fruits is complete. All of the great growing districts have booths in which they have collected their very best. Apples, pears, grapes, pineapples, oranges and all of the common and uncommon fruits from both hemisperes have been brought together here for inspection.

The exposition grounds are series of beautiful gardens. Thousands of trees have been transplanted from the mountains to the north and from the valleys to the south. These trees are fully grown and are of every variety. Shrubs and flowers have been used unsparingly around all of the buildings and bordering all the walks and drives are acres of lawns and flower beds.

The Food Products Palace houses all of the finished materials of the fields. It is not, however, merely a display of the foods themselves, but many of the processes by which the raw products of the farm are turned into the finished products of commerce are shown.

The Sperry Flour Company has a working flour mill in which all of the steps by which the raw grain is turned into flour are shown and explained. In addition to the mill there are cooks from ten different nations who make the flour into bread and other flour products.

Pure Foods Exhibit.

The department of pure foods has a laboratory exhibit showing the methods used in testing foods and also in the preparation of formulae and receipts for home and commercial canning. In connection with this exhibit is the cannery in which the actual operations of canning all of the common fruits and vegetables will be carried on. Also the products of this cannery will be on exhibit.

The livestock exhibits are in two divisions, the permanent herds and the competition animals.

The permanent herds are at the exposition during the whole period that the fair is open. These animals are also eligible for the competition but the idea is to have typical animals of all the different breeds on exhibition continuously.

The dairy barns and the creamery will be operated during the entire period of the exposition and all of the operations necessary for the successful carrying on of the dairy business will be the subject of constant study and demonstration.

The International Egg Laying Contest for pullets was started on November 23 and will run for one year. There are 60 pens of 10 birds each entered. The Tom Barron White Wyandottes, from Gatforth, England, are of the same strain with which Mr. Barron has already won three contests. The "Oregons" are daughters of the 303-egg-per-year hen and of the Oregon hen which laid eggs during the past four years.

Novel Fowls Shown.

The Japanese government has on exhibit six Long-Tailed Phoenix fowls, which are the first to be sent out of the kingdom. The cocks have tail feathers 10 feet in length and are handled in the most careful manner because of the sacred associations with which they are held.

Persian fat-tailed sheep, from which is procured the astrachan so much valued as a trimming; Chinese chow chow dogs, Chillingham wild white cattle, which were found upon the British Isle by Julius Ceasar, Persian and Arabian horses are some of the interesting special exhibits of the livestock department.

The interesting problems of rural life and education are fully illustrated and explained in the Educational Palace, where also are to be found all of the data that have been collected in connection with the back-to-the-soil movement.

In the Oregon State building there is a complete display of the agricultural resources of the state.

In most of the other state buildings, however, are to be found the objects of historical interest to the people of the state. These buildings have been built with the desire to give a common center at which the residents can register and can meet friends. The official state functions will take place in the state buildings and constant social affairs are planned in all of them.