

GROWING ALFALFA:

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The majority of the western farmers are of the opinion that none of the clovers will succeed in Western Canada, whereas nearly all of them will give fair returns if properly sown in suitable soil. Clovers of all kinds may be made of great service to our farmers; they yield excellent forage for all kinds of farm stock, while at the same time enriching the soil. The clover plant in common with all other legumes have the ability to collect free nitrogen from the air and to store it up in their stems and roots, and actually leaving the soil richer than it was previously. Clover also improves many soils mechanically, the roots penetrate deeply and break up the hard subsoils and bring up fertility from a great depth; clover also fills the soil with roots which become excellent plant food as soon as they decay. This additional humus is also useful for holding moisture for future crops. Clover owing to its dense foliage, greatly aids in keeping down weeds. Very few of them can force their way through a heavy crop of clover. I have never found it necessary to introduce clover bacteria into the soils of this country, apparently it is present in the soil through all parts of the province.

Alfalfa clover is by no means a new plant as it has been cultivated for two thousand years, both the ancient Greeks and Romans knowing it well. The latter esteemed it highly for feeding their war horses. It is at the present time cultivated largely in Italy and Spain. Alfalfa is pre-eminently a dry land plant and has always made the most rapid progress in countries having a somewhat light rainfall, although introduced into England over two hundred and fifty years ago it is still very little grown there. The plant of alfalfa is not at all like the red clover plant, being more erect in its habits. The blossoms are purple instead of red, and the leaves are smaller. The most striking feature, however, in this clover is its very long tap root, which has been known to reach five feet in one summer. This extensive root system enables the plant to thrive and produce a good crop of forage even on sandy soil and in a climate of light rainfall. The crowns of the Alfalfa plant, from which the stems grow, increase greatly each year, until at the age of five years as many as thirty stems are produced from each plant, largely increasing the yield of fodder.

This plant is a very decided perennial as fields have been known to remain productive for fifty years, and in this country, when planning to grow a field of it, arrangements should be made to leave it unbroken for at least five or six years. The seed is expensive and it will never pay to grow it for one or two years and then break it up as we do timothy and other grasses. Seeing that the seed is expensive and the crop likely to occupy the ground for some time, great care should be exercised in preparing the land and sowing the seed; the soil should be plowed fairly deep in spring and well harrowed; the plants are more delicate when young than most grasses, and rough soil is a great objection, and low wet land is very unsuitable.

Although it is possible to grow a fair crop of this clover with a nurse crop of grain, we have always had the best results from sowing it without a nurse crop of any kind. Our usual practice is to plow grain stubble late in May, harrow once, then sow the alfalfa broadcast by hand or with a Thompson wheel-harrow seeder and harrow a second time. I would prefer sowing the clover with a drill when possible. This has been accomplished, I understand, by mixing the seed with a quantity of chopped grain and sowing the mixture with a common grain drill.

When sowed on spring plowed stubble the volunteer grain and weeds come up quickly. These should be cut with a mower when about a foot high and the cuttings left on the ground. They should not be raked off as they will act as a mulch and help to keep the moisture in the ground. Very shortly after the weeds have been mowed the clover will come up thickly, and the plants should be strong and well rooted by fall. In weedy land it may be necessary to cut the weeds again during the summer. This frequent

mowing not only keeps the weeds from going to seed, but also encourages the clover to send out fresh stems, increasing future crops. A crop of clover is not usually obtained the first season, and stock should not be pastured on it until it is at least a year old. Although quite hardy when well established, the young plants are somewhat delicate the first year and should not be pastured closely the first fall, but considerable stubble left to catch the snow.

It is very important that alfalfa should be cut for hay on the very first appearance of the blossom. The stalks are then quite tender. The hay will be of the best quality and the aftermath heavy. If cut when the blossom is well advanced, the hay will be woody and the aftermath light. The leaves of this plant are easily broken from the plant and the hay should be cured as much as possible in the coil, and not handled more than is absolutely necessary. It can always be cut twice in this country and in a very favorable season three times. The yield is usually from $2\frac{1}{2}$ to 3 tons of hay per acre. Cut early and well cured, all classes of stock are very fond of it. In the United States one ton of it is worth three tons of prairie hay. Even hogs will eat this clover, and it is ideal feed for dairy cows. With

776 lbs. of pork for each acre of pasture. Fed to brood sows, either as hay or pasture it prevents poor, sickly litters and keeps the sow in good health. The hay is excellent for sheep, but they are liable to bloat on the pasture if turned into the field when the clover is wet or frosty. After cutting the clover it is an excellent plan to run a disc harrow over the field, but the harrow must be set so that the discs run nearly parallel, so as not to cut too deeply. There are several varieties or strains of alfalfa offered on the market. Perhaps the most suitable for this country are: Grimms alfalfa and Turkestan alfalfa; northern grown seed is preferable.

A DISCOVERY OF IMPORTANCE

Mr. W. C. McKillican, Alberta representative of the Dominion seed branch, writes:

I have just completed a little experiment that I believe will be of interest to your readers. In making germination tests of Turkey Red Winter wheat I have often observed that the result was disappointing, i.e., wheat that looked good and sound would be slower in germinating than one would expect. The opinion is occasionally met that the crop of winter wheat does not do as well when sowed again immediately after harvest, as when seed a year old is used. To arrive at something definite, the following experiment was conducted. Twenty samples of good-looking sound Turkey Red Winter wheat were chosen. These samples were of the

they have germinated. In the first test, while a fair percentage ultimately grew, the germination was very slow as indicated by the four day test. In the second test, not only was there a greater percentage germination, but practically every live seed started in the first four days. The fact that every sample out of the twenty gave the same result would indicate that there must be some definite law at the back of this; at the same time I should like to see the test repeated another year before coming to any definite conclusion.

ALBERTA RED TESTED		TESTED	
WHEAT	JAN., 1909	WHEAT	JAN., 1910
Sample No.	Percent germination in 4 days	Sample No.	Percent germination in 4 days
397	32	78	99
672	30	79	99
683	30	77	97
686	59	87	97
692	23	81	96
695	47	85	92
712	31	81	96
713	33	77	94
715	26	82	97
722	23	83	96
817	44	86	88
822	27	87	94
825	23	85	92
881	27	94	95
889	19	93	100
891	19	88	97
905	15	84	99
947	55	89	99
950	16	78	98
957	14	69	93

Average of 80 in four above cases was: 29 7-20; 82 9-10; 93 9-10; 96 1/2

SASKATCHEWAN'S CROP STATISTICS

The following figures compiled by the statistical branch of the Department of Agriculture, Regina, show the complete returns of the Saskatchewan Grain Crop for 1909.

The figures are of especial interest as showing the area under crop in each of the nine districts, the total yield for each district and the yield per acre.

WHEAT			
District No.	Crop Area Acres.	Total Yield Bushels.	Yield Per Acre.
I	1,684,000	30,480,000	18.1
II	523,000	12,923,000	24.7
III	121,000	3,440,000	28.3
IV	280,000	7,018,000	25.1
V	1,037,000	25,847,000	24.3
VI	198,000	4,742,000	23.9
VII	26,000	601,000	23.1
VIII	90,000	2,313,000	25.7
IX	108,000	2,842,000	26.8
Prov'l.	4,083,000	90,215,000	22.1

BARLEY			
District No.	Crop Area Acres.	Total Yield Bushels.	Yield Per Acre.
I	81,000	2,365,000	29.1
II	11,000	385,000	35.0
III	3,000	123,000	41.0
IV	64,000	2,176,000	34.0
V	46,000	1,518,000	33.0
VI	6,000	186,000	31.0
VII	7,000	227,000	32.4
VIII	18,000	605,000	33.6
IX	8,000	248,000	31.0
Prov'l.	244,000	7,833,000	32.1

OATS			
District No.	Crop Area Acres.	Total Yield Bushels.	Yield Per Acre.
I	753,000	31,626,000	42.0
II	251,000	13,679,000	54.5
III	54,000	3,046,000	56.4
IV	473,000	23,792,000	50.5
V	415,000	19,990,000	48.0
VI	107,000	5,179,000	48.4
VII	41,000	1,931,000	47.1
VIII	85,000	4,377,000	51.5
IX	61,000	2,745,000	45.0
Prov'l.	2,240,000	103,463,000	47.1

FLAX			
District No.	Crop Area Acres.	Total Yield Bushels.	Yield Per Acre.
I	101,500	1,319,500	13.0
II	146,000	2,192,000	15.0
III	6,400	97,500	15.2
IV	7,300	94,900	13.0
V	49,100	648,100	13.2
VI	6,500	71,500	11.0
VII	400	5,600	14.0
VIII	600	8,500	14.2
IX	1,300	13,300	10.2
Prov'l.	319,100	4,448,700	13.9

LESSON IN CO-OPERATION

Apples in Lambton district, sold through co-operative associations in 1907, average \$81 per acre; other orchards, in same neighborhood, sold in ordinary way, yield \$32.

In Michigan cost of carriage to market reduced in same way by 75 per cent.—Toronto Weekly Sun.

TO CURB THE BEEF TRUST

The Abattoir Bill has been introduced in the Manitoba Legislature and has been given its First Reading.

The bill, which is entitled "An Act Respecting the Live Stock Industry," provides for an appropriation of \$30,000 for the purpose of acquiring a site and assisting in establishing, equipping, operating and maintaining a public market and abattoir.

The bill gives the government power to enter into an agreement with the council of any city in regard to the matter. The council into which any agreement is entered is given power to incur debt not exceeding \$200,000 to help establish the market and abattoir.

For the purpose of expending \$30,000 and carrying out the provisions of the act, power is given to appoint three commissioners to be called the board of abattoir commissioners.

Provisions of Bill

The bill reads as follows:

1. For the purpose of encouraging, fostering and developing the live stock industry of the province, and bettering the conditions of those engaged therein, there may be appropriated from and paid out of the moneys to the credit of the consolidated revenue fund of the province a sum not exceeding fifty thousand dollars for the purpose of acquiring a site for and assisting in establishing, equipping, operating and maintaining thereon a public market and a public abattoir for the slaughter of cattle and other live stock, together with a suitable cold storage plant.

2. For all and singular the said purposes the government may enter into an agreement or agreements with the council of the city, containing such mutual covenants, provisions and conditions as may be agreed upon, and the council of any such city shall have power to enter into such agreement or agreements with the government.

3. Upon and after the executions of the agreements hereinbefore referred to, the council of the said city shall have power and authority by bylaw, and without the submission thereof for the approval of the electors qualified to vote on money bylaws in said city, to incur a debt or debts not exceeding the sum of two hundred thousand dollars by the issue and sale of debentures. Such debentures shall bear such rates of interest, not exceeding five per cent. per annum, payable at such times as the council of the said city may direct, and the principal of the same shall be payable at the time fixed by the council, not more than fifty years (50) from the issue of the said debentures.

Board of Commissioners

4. For the purpose of expending the said moneys and carrying out the provisions of this act, and any matter or thing set forth in any agreement or agreements made pursuant thereto, the said government shall have power to appoint not exceeding three commissioners, who shall be designated "The Board of Abattoir Commissioners," one of whom shall be the mayor of the city for the time being.

5. In addition to performing the duties prescribed by this act, the said commissioners shall do and perform such other duties as may be set forth in any agreement or agreements between the government and the city made pursuant to the provisions of this act.

6. No liability of the said government greater than the sum of fifty thousand dollars shall be created by this act.

7. This act shall come into force on the day it is assented to.

stall fed steers it will take the place of bran, cottonseed meal, etc., as it furnishes the farmer a feeding material rich in protein.

There is no way in which alfalfa can be utilized better than by hog pasture. A good crop will support ten hogs per acre if a little grain is fed with it; it is somewhat soft feed for them if fed without grain. The Kansas experimental station fed alfalfa hay in connection with grain and made 868 lbs. of additional pork from a ton of hay. Pigs at the same station fed with very little grain in addition to alfalfa pasture, made a gain of

crop of 1908 and had been first tested in January, 1909, about four months after being harvested. They were from all parts of the province of Alberta and most of them were seed fair prize winners, but when tested for germination they gave rather disappointing results. They have been stored for a year and have now been tested again in January, 1910, about sixteen months after harvest. The results as shown in the accompanying table are most striking.

Without exception they have given a good test in the second trial. The striking part is the rapidity with which