

THE FARMER'S ADVOCATE

AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

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conformation which well-informed judges look for in a bull of the dairy breeds; but if he is deficient in the indications of robustness, no matter how great the records of his ancestors, he should be sparingly used, if used at all, as a breeder, until his offspring has proved to be well up to the standard in constitutional vigor, and also in milk and butter production. While the axiom is true, that as a rule like begets like, or the likeness of some ancestor in regard to conformation, quality, and even prepotency, yet the well-known and recognized laws of physiology must be observed if health, thrift, vitality, and fecundity are to be retained and maintained in the family or the herd; and it does not follow with geometrical certainty that the daughter of an extraordinary milker is equal, or superior, to her dam in this regard. If it were so, there would be little skill needed on the part of the breeder. It would be simply a question of mathematical demonstration. Indeed, it is well known that in many cases the daughters of phenomenal milkers have proved quite below mediocrity, even when they were sired by sons of cows having abnormal records. This being the case, and it being also conceded that in many cases close inbreeding results in impaired constitution and a predisposition to disease, as well as unshapely forms in the offspring, we submit that it is unwise to slavishly follow a fashion which produces so large a proportion of blanks to prizes. It is safer to look first to health and vigor, which is associated with a broad chest, deep and well-sprung ribs, and a large stomach, giving capacity for working up large quantities of food into milk and butter or beef. The same general principals apply in all classes of stock.

Soil Moisture and Fertility.

We are indebted to Prof. A. E. Shuttleworth, of the staff of the Ontario Agricultural College, now continuing his studies in Gottingen, Germany, for a translated copy of an interesting experiment conducted last winter under the supervision of the Agriculturist at the Experiment Station at Gottingen, Prof. Von Seelhorst, assisted by Mr. G. M. Tucker, of Kingston, R. I., now a student in agriculture at the Gottingen Station. Among the numerous photographs illustrating the experiments which the potash syndicate at Stassfurt, Germany, have conducted are those that present the influence of potash upon the development of the roots, stems and fruit of the coffee plant. These photographs suggested a similar comparison of the respective parts of the oat plant as they might be influenced

by the various quantities of water in connection with nitrogen, potash and phosphoric acid in varying proportions. For this experiment pots were used, which were sown to oats in view of carrying out an experiment to observe the influence of the water content of the soil upon the ash ingredients of the plants.

Although it is not claimed that absolutely correct figures can be obtained from small pot culture, yet relatively the results are of value in determining, to a considerable extent, the influence of the several factors indicated. The copy of the experiment is lengthy and somewhat complicated, and we cannot afford the space at this time requisite to its reproduction entire, but we propose to summarize the main points in the hope that it may be of interest to at least some of our readers. Each pot was filled with soil (dry substance) moistened with water and fertilized. The pots were divided into three groups, according to the amount of water given, which was in varying proportion. The several groups receiving from 14.35% water=41.6% of the absorptive power of the soil to 16.44%=48.8% of the absorptive power of the soil at the first, which was increased from time to time until the quantity used was from 18.43%=56.1% to 22.59%=70.6% of the absorptive power of the soil. The pots were watered daily and fertilized in varying proportions with potash in the form of carbonate, phosphoric acid in the form of calcium phosphate, and nitrogen in the form of nitrate of soda. When the grain was ripened the soil was washed from the roots by means of a hose and all the particles of gravel and sand removed by means of a needle, and the mass of roots with fragments, after being air-dried, were carefully weighed. Duplicate pots were taken in each case, so that the results given are the average of the two pots and the results which are given in tabular form are considered as accurate as it was possible to make them. From the tables there are three lines of consideration to be noticed in relation to the development of the plants: 1st, The water content of the soil; 2nd, The fertility of the soil, i. e., the actual plant food contained therein; 3rd, the combined influence of the water content and the fertility. From the three groups of tabulated results we select the following:—

Fertilizer.	WEIGHT OF STRAW AND GRAIN IN GRAINS.		
	GROUP NO. 1.	GROUP NO. 2.	GROUP NO. 3.
	Quantity of water.		
	Smallest.	Medium.	Largest.
O.....	41.5	47.2	68.5
K P.....	67.5	83.6	99.5
K P N.....	68.5	93.4	119.5
K P 2 N.....	68.5	94.0	135.0
K N 2 P.....	38.5	40.0	63.5
K N 2 P.....	79.5	108.0	127.5
P N.....	75.5	101.5	138.0
P N 2 K.....	74.0	99.5	117.5

*K means 1 grain potash in the form of carbonate; 2 K, 2 grains of the same; P, 1 grain of phosphoric acid in the form of acid calcium phosphate; 2 P, 2 grains of the same; N, 1 grain of nitrogen in the form of nitrate of soda; 2 N, 1 grain of the same.

The results of the experiment briefly summarized show that not only under favorable soil conditions will the product of the oat plant be increased, but at the same time the proportion of roots to straw and grain undergoes a change. The root mass becomes relatively smaller while the weight of straw and grain becomes relatively larger than is true in cases where the soil is deficient in water or fertility or both.

The Elevator Combine Monopoly.

The wheat-growers of Manitoba and the Northwest appreciate with a force not understood in Eastern Canada the seriousness of the grain elevator monopoly and the restrictions placed by railways upon the free handling of grain by preventing farmers loading a car from their own wagons or a flat warehouse. It enables the elevator companies to squeeze out independent dealers, and causes hardship and loss through elevator charges and holding down prices to the wheat producer so that he cannot realize what he should from his crop. Farmers have been charged sufficient for simply putting wheat through the elevator to carry it from points in Manitoba to Fort William or even Buffalo.

This may look like a threadbare subject to Northwest readers, but the abortive attempts at legislation recently made at Ottawa tend to show that the subject is very imperfectly understood even by the representatives of Western constituents, whose business it should be to know all about the subject. The original bill introduced by Dr. Douglas, Patron representative for Eastern Assiniboia, was imperfect and showed lack of knowledge of the question at issue. The compromise bill, which was evidently dictated by elevator lobbyists, with the endorsement of the

C. P. R., and which got the approval of the committee, would, had it ever become law, impose legislation upon the Western producers placing them in a worse position than they are under existing conditions. At the last moment Dr. Douglas abandoned his bill, and it was shelved for this session at least. It is difficult for the interested observer to arrive at an intelligent understanding of these futile attempts at legislation to overcome a simple regulation made by a railroad company in reference to the handling of a certain kind of freight, but it looks as though the wheat-growers of Manitoba and the Territories are indebted for the shelving of this bill to the efforts of the representatives sent to Ottawa at the last moment by the Central Farmers' Institute and the independent grain dealers.

Mr. Robertson, of Elva, represented the Central Institute, and Mr. John McVicar the independent grain men. The former is one of the largest wheat farmers in Manitoba, having over 700 acres in wheat this year. The latter has been a successful farmer near Otterburne for about twenty years, and for a number of years has also been in the grain business, operating principally on the C. P. R. and Emerson Branch of the Northern Pacific. Mr. J. K. McLennan, of Winnipeg, also representing the independent dealers, accompanied the delegation.

As the matter now stands, the Privy Council is to take up the question after the session, and if the railroads will not abandon their unjust elevator regulations, legislation is promised to remedy the evil.

We do not believe any legislation necessary if the railways are made to comply with the common law. The C. P. R. hold the key to the situation, and can, whenever they choose, bring this long fight to a close. Just why they should be at so much pains to maintain a "regulation" for the benefit of the elevator combine is a mystery beyond our comprehension, especially in view of the fact that if the desired amendment were made the railroad traffic would not be impeded, as is practically demonstrated on the Manitoba & Northwestern Road. It goes without saying that when farmers are justly dealt with they will patronize the elevator every time in preference to a flat warehouse.

Below we publish a memorial to the Government which was prepared by the farmers' and independent dealers' representatives, with the assistance of the late D'Alton McCarthy, and submitted to the Government by the Western members. It will be seen that practically nothing is asked for further than the abrogation of the troublesome protective "regulation" of the railroad companies:

1. Every railway company engaged in the carriage of grain in the Province of Manitoba and the Northwest Territories shall at every station on its line of railway from which grain is shipped, grant to any person who demands it in writing the privilege of erecting, maintaining, and using on its station grounds, not required for railway purposes, adjoining the main track, siding or spur at such station, an elevator or flat warehouse for the purpose of storing and shipping grain therefrom, but the said elevator or flat warehouse shall not be used for any other purpose.

2. The right or license so granted by the railway company shall continue so long as the warehouse or elevator is used for the purposes mentioned in this Act, but not exceeding the period of twenty-one years. Provided that if the company require the land on which the elevator or warehouse is erected for railway purposes prior to the expiration of the said period of twenty-one years, the company may, on giving to the owner thereof twelve months notice in writing, determine the license on payment of the value of the elevator or warehouse erected on the station ground, which value in case of dispute shall be ascertained by arbitration and the provisions of "The Consolidated Railway Act" as to arbitration respecting the value of lands taken thereunder shall so far as the same are applicable apply thereto.

3. In the event of the railway company notifying the person who has made the demand in the preceding section provided for, of its inability to permit the erection of an elevator or warehouse on the station grounds owing to their being required for railway purposes, it shall be the duty of the railway company on the request of the person so applying forthwith to build and thereafter to maintain a side track or spur from said station grounds to any land or premises near thereto where such person has built or acquired or is building a flat warehouse or elevator for the receiving and shipping of grain by such railway. Provided always that should the said elevator or warehouse be at a greater distance from the said station grounds than three hundred yards that the additional cost of building and maintaining the said track or spur shall be borne and paid by the person applying for the said privilege or by the owner of such elevator or warehouse.

4. The company shall on reasonable demand on that behalf supply cars for the purpose of carrying the grain received or stored in the said elevators