Criticism of Experimental Work

Editor, Farm and Dairy,—As usual at this season of the year the various newspapers are publishing, under large headings, the reports of the results of the cooperative experiments conducted by members of the Experimental Union, which held its annual session at Guelph this week.

Professor C. A. Zavitz, the secretary of the Union, has always been the most prominent speaker at these meetings, and we heartily acknowledge his claims to recognition on account of the work he has done towards the improvement of our cereal crops, but the results he has obtained from his fertilizer experiments and the conclusions he has doduced from them are most unconvincing to those who are conversant with the principles of soil fertility and fertilizing.

THE EXPERIMENTAL PLAN

The experimental plan which Prof. Zavitz adopted years ago and has tenaciously adhered to ever since, is as follows:

Plot I.—Check plot—no fertilizer.

Plot II.—160 lbs. nitrate of soda per acre.

Plot III.—160 lbs. muriate of potash per acre.

Plot IV.—320 lbs. acid phosphate per acre.

Plot V.—213 lbs. complete fertilizer per acre (containing one-third of each of above quantities).

Plot VI.—20 tons farmyard manure per acre.

Without consideration to the nature of crop, soil or other conditions, Prof. Zavitz has enforced this plan, without variation in sum or substance, and like the laws of the Medes and Persians, it altereth not.

The famous "Law of Minimum" was promulgated by Liebig more than 60 years ago and has long been recognized by soil chemists. Briefly, this "law" states that the plant food substance present in smallest quantity in a given soil, governs the yield of crop in that soil. Another way of expressing the same law is: "The strength of a chain is that of its weakest link."

ALL FERTILIZERS MUST BE PRESENT

The plant food ingredients applied in fertilizers are nitrogen, acid phosphate and potash and sometimes lime, and except under exceptionable conditions a fertilizer should be compounded proportionately of these; it is seldom advisable to apply them singly, for if the other ingredients are deficient, the one applied would be ineffective. What benefit is derived by applying 160 lbs. muriate of potash an acre, alone, to the oat crop, when, in presence of a sufficiency of other plant foods, the crop could only use profitably half of the potash applied? The "complete fertilizer" consists of a mixture of nitrogen, muriate of potash and acid phosphate—in all 213 lbs., or just enough to give the potato crop an "appetizer."

It is generally considered advisable to use fertilizers in conjunction with barnyard manure for hoed crops, but Prof. Zavitz loses sight of this in his experiments. True, there is one manured plot included in the plan, and the manure is applied at the rate of 20 tons an acre, the total value of this being given at $6 for the 20 tons! Surely a very low estimate of the average value of farmyard manure in Ontario, and there must also be reckoned the cost of haulage and application—perhaps this, too, is included in the $6?

THINGS TO THINK ABOUT

Perhaps Prof. Zavitz or some other authority would answer the following questions:

1. What would be an average price per ton of ordinary mixed cow and horse manure in Ontario, and what would be a fair estimate of the cost of handling same?

2. Is Liebig's "Law of Minimum" considered generally applicable?

3. What problems in fertilizing is Prof. Zavitz' plan of experiment designed to elucidate?

4. What would be a more suitable and efficient plan than that at present employed by Prof. Zavitz in the cooperative tests?

We consider this subject of very great importance and shall be glad to know the opinions of your readers on the same.—F. V. Thomson, York Co., Ont.

Another Satisfied Cow Tester

W. J. Seaman, Queens Co., N.B.

We have tested our cows regularly once a month for the last two years and weighed the milk for four years. We have made more money out of our cows in that period than we ever made before in twice that time. We have been able through cow testing to weed out the low testing cows and leave the best ones in the herd. We take a greater interest in the herd and give more attention to feeding, attending and milking than we otherwise would.

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It's big enough for the biggest advertisers and we have them.

And it's not too big for the small advertiser, and we want and ought to have more of them.

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We've always time for small advertisers, and we're never too busy to pay them personal attention.

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NEW AUTOMATIC OILING

The most important Cream Separator improvement since the introduction of the present type of De Laval machines.

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The new system of De Laval automatic oiling is distinctively different from any other splash or spray system in that there is a constant regulated feed of fresh oil and discharge of used oil. Other splash systems use the same oil over and over, until it soon does more harm than good.

In the new automatically oiled De Laval machines all gears, shafts and bearings practically float in a mist-like spray of oil and literally never touch each other during their operation.

De Laval agents will be glad to exhibit the new machines and demonstrate the working of the new automatic oiling system, which more than ever enhances De Laval superiority in every feature of cream separator practicability.

DE LAVAL DAIRY SUPPLY CO. LIMITED

173 WILLIAM ST., MONTREAL 14 PRINCESS ST., WINNIPEG

In 1911 our cows did not give as large a yield as in 1910, because of the lare pasture and shortage of fall feed. Our corn did not give very good results. It was a good growth, averaging about eight feet in height, but it got frozen early in September and did not appear to be much better for feed than straw. Although our cows were in much better order this spring than they were in the spring of 1910, their test was much lower and very irregular. We cannot account for this, unless the testing was not properly done.

We like Farm and Dairy exceedingly well and admired your stand on the reciprocity question. We were surprised to see the farmers as a class so ready to listen to the paltry yarns of politicians. We trust that the day is not far distant when my brother farmers will see things in the light in which Farm and Dairy endeavored to show them.

Our Veterinary Adviser

SUPPURATIVE MAMMITIS.—One-quarter of cow's udder became inflamed in July. It beals and breaks up, but gathers and breaks again, etc W. M., Renfrew Co., Ont.

When an abscess forms open up freely with a knife and flush the cavity out well three times daily with a 4 per cent. solution of carbolic acid in water. Keep abscess open until it is healed at the deep-seated parts. Give internally four drams hyposulphite of soda three times daily.

CORNS.—The shoes were not reset on one of my horses for three months. He now has corns.—E.K.J.

The treatment he received is well calculated to cause corns. Remove the shoes, pare down well at the seat of corn, and apply hot linseed meal poultices. Change the poultice every six or eight hours until heat and tenderness disappear. Get the shoes changed every four weeks and have the wall of the inside quarter rasped down so that there will be little or no weight upon the shoe at that part.

UNTHRIFTY COW.—Cow stays thin. She is well fed. She eats the manger.—E. J.

The symptoms indicate tuberculosis, for which nothing can be done. The only method of making a definite diagnosis is the tuberculin test applied by a veterinarian. If she does not eat well give her a tablespoonful of the following three times daily, viz: Equal parts sulphate of iron, gentian, ginger and nux vomica. The eating of wood indicates a want of phosphates in the system. For this allow free access to salt and give her two drams calcium phosphate three times daily until the habit ceases. In the meantime cover the manger with tin or zinc to prevent her eating it.

CURB.—Six months old colt has a curb. I have been working at it with all kinds of dope without success.—J. G., York Co., Ont.

If what you consider a curb is a congenital conformation (which we think probable) you may as well use "dope" as anything else as the enlargement cannot be reduced. But if it really be a curb, the result of sprain of the ligament, it can be reduced in time. Get a liniment made of four drams each of biniodide of mercury and cantharides and four ounces each of glycerine and alcohol. Keep colt quiet in a box stall and rub a little of the liniment in once daily. It will probably take some months to reduce the enlargement. Treatment is helped when the patient is shod with a shoe high at the heel. This tends to lessen the stress upon the ligament, but the advisability of shoeing so young an animal is question-able.