

LIME FOR LAND.

Will it pay to sow lime on land? What quantity per acre, on high or low land? On which kind of land, high or low, will it give best results.

W. D.

Northumberland Co., Ont.

Ans.—Lime is composed of calcium and oxygen, both of which are essential elements of plant food. They are, however, usually present in sufficient quantities in soil for the requirements of plant growth. Lime improves the texture of clay soils by causing a flocculation of the fine clay particles, thus destroying their sticky nature; and it makes sandy soils, containing organic matter, firmer by binding the soil particles together. Lime also acts chemically on the soil, liberating plant food held in an unavailable condition. Heavy clay soils and soils rich in organic matter contain large amounts of unavailable plant food, which lime tends to bring into an available condition. Lime, therefore, gives its best results on such soils, whether they are high or low. As lime is only a liberator of plant food, it should be applied in moderate quantities at intervals of a few years, so as not to render available more fertilizing constituents than can be made use of by the growing crop. On the class of soils mentioned, lime could be profitably applied at the rate of one or two tons per acre at intervals of five or six years.

R. HARCOURT, Chemist.

Ontario Agricultural College.

BREACH OF AGREEMENT.

1. Father and son buy from a neighbor a heifer calf for so much money. The neighbor said the calf was pure-bred and agreed to register it. The father has died and willed the calf to his son. The son has raised the calf, which is now a cow and has a daughter, and both cow and heifer are now with calf to a pure-bred bull. The son finds out now the neighbor has not registered the calf and cannot register it. That puts the son out of four cattle that would register if the cow and heifer raise their calves. Can the son come on his neighbor for damages? If so, how much do you think he should have?

2. Do you know any reliable man in Australia and New Zealand that I could correspond with for certain information about those countries?

D. A.

Ans.—1. We think that at this late date damages such as suggested are hardly recoverable. It is just possible, however, that some compensation might be adjudged in respect of the breach of agreement to register, but to what amount it is impossible to predict. If action be taken, it ought to be by the executors of the father.

2. Try Editor Australasian, Melbourne, Australia, and Editor Otago Witness, Dunedin, New Zealand.

GROWING MIXED GRAINS.

I plowed a field of sod, which I intend sowing with a mixture of oats, barley, grass peas and Goose wheat. How much should I sow to the acre, and what proportion of each?

Middlesex Co., Ont.

W. J. SMITH.

Ans.—In growing oats, barley, spring wheat, and peas, singly and in eleven different combinations for grain purposes, in each of six different years, it was found that oats and barley produced the largest yield of grain per acre. In another experiment now in progress, in which nine proportions of oats and barley have been used for two years in succession, it has been found that a combination of one bushel of oats and one and one-half bushels of barley per acre has produced the largest yield of grain.

In answer to the above question, I would suggest the following mixture for an average soil: Oats, 3 pecks; barley, 3 pecks; grass peas, 2 pecks, and Wild Goose spring wheat, 2 pecks. When grains are grown in combination, more seed can be used to advantage than when the grains are grown separately.

C. A. ZAVITZ.

Ontario Agricultural College.

SUGAR BEET.

I understand that white carrots are good feed for horses; also, that sugar beets are excellent for milch cows, leaving no bad flavor in butter, and also fattening. I was going to sow about one acre of land in turnips this coming spring, but if sugar beets are a more favorable root, I would make use of that patch to raise the beets instead. Will you please let me know: 1. Is it safe to feed carrots in quantities to working horses? 2. Will pigs and cattle do as well on sugar beets as on turnips? 3. Is it much more difficult to keep beets through the winter than to keep turnips?

A SUBSCRIBER.

Simcoe Co., Ont.

Ans.—1. In moderation, carrots are an excellent addition to the ration for a horse.

2. Many who have used them prefer sugar beets to turnips for cows or pigs. For fattening cattle or sheep, the latter are most highly esteemed.

3. Like mangels, sugar beets are more susceptible to frost than turnips, but put in clean and kept from frost, we see no reason why they cannot be preserved in first-class condition.

WINDOWS FOR BASEMENT AND VENTILATION.

I am building a barn with concrete basement. 1. Which is the best style of window? I do not like the sliding, as it is impossible to move them in the winter, on account of swelling. Do you think a window with 6 panes 12x14 glass would give satisfaction, swinging on a pivot in the center? If I remember right, I read in the "Advocate" some time ago where a man strongly recommended putting windows in the same as in a house, viz., up and down. What is your opinion on that? I am thinking of putting in a window the top of which will open up like a door, while the lower half will be stationary. 2. I would like to put in some system of ventilation which will be cheap as well as satisfactory. Would an 8-in. tile laid on front of the manger and carried below ground some distance outside and then up to the surface give good ventilation?

Lambton Co., Ont.

CONSTANT READER.

Ans.—1. To construct a stable window that will move freely up, swing around or slide back into a space provided in the wall, and at the same time be close enough to exclude the cold wind and drafts of winter, is not easy. Moisture will cause the sash and fittings to swell. The house style of window (like that of Jacob W. Manning, described in Feb. 1st issue) is well liked by those who have them, especially for lighting the stable. To have the upper half swing open into passage as suggested will answer if high enough to be clear of heads of men or horses. Why not put the hinges at top and swing up, holding it up with cord and pulley or hook and staple? In that case a half-inch strip between the lower and upper sash, projecting out, would throw storm water off. Some approve of a pocket in the wall, into which the window is slid when necessary for admission of air or for ventilation. Will some of our readers who have thoroughly satisfactory stable windows send us a description of them for the benefit of "Constant Reader" and hundreds of others who are building this year.

2. We have been in stables where the tile-below-feed-alley-system of ventilation worked well, and in others where it did not. It should be open at each end and clear above ground, so as to catch wind from different directions. If carried underground some distance from stable, then a galvanized-iron or other pipe with cowl that will turn freely above ground, catching the wind as in sub-earth ducts for factories, must be provided. Within the stable there must be provision for carrying off upward the heated foul air. Though not regarded by experts as efficient, there are some costly barns that have for ventilation simply tiles through upper part of walls at opposite sides or ends. For a description of various plans of ventilation we would refer "Constant Reader" to Prof. Grisdale's article, March 1st issue of "Farmer's Advocate," 1901; Mr. H. S. Foster's, April 15th, 1901, and Prof. J. B. Reynolds', June 15th, 1901. Efficient ventilation without considerable expense is probably expecting too much.

WINTER BARLEY TRIALS.

What has been the experience in growing fall barley in Ontario?

Ans.—We have sown one or more varieties of winter barley at the Ontario Agricultural College at Guelph in each of the past twelve years, and have found that in mild winters the winter barley usually comes through admirably and produces a heavy crop, which gives a large yield of grain per acre. In severe winters, however, it is generally killed out completely. Taking one year with another, we have not yet found a variety of winter barley which we could safely recommend for general cultivation in Ontario.

C. A. ZAVITZ.

Note.—In a recent report received from the Tennessee Experiment Station, winter barley and oats have been found valuable crops in that southern State, keeping the ground covered, thus preventing leaching by winter rains. Large crops are realized, less subject to rusts and insect pests, and the ground can be used to produce a second crop following the early harvesting of the first. The natural conditions in Tennessee are, of course, very different from those of Canada.—Ed.

TROUBLESOME WILLOW STUMPS.

We have some willow stumps in wet, low land that shoot out every spring. How can we kill them? We do not wish to drain the land, as the springs there are very valuable and do not cover much ground.

C. W.

Oxford Co., Ont.

Ans.—Will some reader suggest a better plan than "grubbing" or pulling them out with a stump machine?

PLANNING A BARN.

I am building a barn 110x50, with an L 21x36 for a pigpen. Give me your idea how to lay out the stabling to the best advantage?

York Co., Ont.

SUBSCRIBER.

Ans.—By studying the plans given in the Jan. 15th, Feb. 1st, and the present issue of the "Farmer's Advocate," "Subscriber" can lay out his barn to suit his stock and conditions probably better than we could.

TREATMENT OF SPRUCE HEDGE.

I planted a white spruce hedge, spring of 1901. Plants were set 15 inches apart; are now two feet high and thrifty. What treatment should they receive in spring of 1902 and thereafter in order to secure a perfect hedge 4 ft. 6 ins. high?

H. D.

Ans.—Cut back the center upright shoots. This will have the effect of inducing growth in the lower limbs. Repeat the process in after years until the lower part of the hedge has become thick and strong. What may be called the shoulder limbs, and straggling ones also, should occasionally be cut back, the design being to bring the hedge into the conical or pyramidal shape, in which shape only will it remain vigorous and green from top to bottom. It may be allowed to grow to the full height desired after the lower part has become close and thick, but not before. Until the full height has been reached it is better to prune with a knife rather than shears, especially with evergreens.

MILK FOR CALF—FARMERS' HANDBOOK—STOCK SPECULATION.

1. At what temperature should milk be fed a young calf under two months old? 2. What miscellaneous book, giving measurements, tables, etc., is most suitable for farmers' use? 3. In what way can a person find information about railroad and other stocks, Chicago grain markets, etc., with a view to speculating in them?

W. I. O.

Huron Co.

Ans.—1. About the same temperature as when drawn from the cow, or say from 90 to 95 degrees.

2. Woll's Handbook for Farmers and Dairy-men is a good one; price, \$1.50. Order through this office.

3. The daily newspapers contain quotations of the daily (or hourly) fluctuations of various stocks, and the stock brokers or "bucket shops" afford facilities for gambling thereon, which we advise "W. I. O." to let severely alone, or he will burn his fingers.

HORSE TRAINING.

"Horseman."—In reply to your question, we believe Prof. Brush's book on breaking and handling horses is very good when a person wants to handle a perfectly green full-grown horse in a hurry, but for one who is willing to take time to teach the colt in a rational manner, his own common sense and knowledge will prove more satisfactory than the devices of the professional "horse-breakers." Read "Whip's" excellent article on the subject in the "Farmer's Advocate" for January 15th, entitled "The Education of the Horse." We are not aware where Prof. Brush's book is published.

MAINTAINING A DITCH.

I built a Russell fence—a line fence. My neighbor changed his water course, where a large amount of water comes down in spring. He dug the ditch about six inches from my stakes, and the water has washed my fence down. The ditch has washed into the line. Which of us will have to maintain ditch, which is through black ground and washes away fast on my side?

G. R.

Peel Co., Ont.

Ans.—It is for your neighbor to maintain the ditch; and in doing so he must see to it that your premises are not injured thereby; and he ought, moreover, to make good to you such damage as has already been occasioned.

TILING A CREEK.

Have an open ditch running through my farm and I want to put tile in. It starts at the line fence between my farm and A's. A three-inch tile would carry my water and I think a five-inch would carry it all. 1. Can I close it? 2. If so, can I force A, if he wants his water to run, to pay the difference between a three- and five-inch tile? 3. If he does not, might I dam his water back and drain my own?

ENQUIRER.

Middlesex Co., Ont.

Ans.—1, 2 and 3. We must assume, from what you say, that the "ditch" in question is a natural water course, and must answer all three questions in the negative.

TRAINING COLLIE—PIG PEN FOR 100-ACRE FARM.

1. Would you please give me some advice how to train a collie dog? I have a pup about eight months old; he appears quite sharp and I think if he had the right training he would make a good farm dog.

2. I intend building a pigpen next summer, and would like to see a plan of pen for 100-acre farm.

Ans.—1. See article by Evan McIvor, on "Training a Collie," in this issue.

2. Such a plan as asked for is now in course of preparation, and will appear in an early issue.

MIXED GRAINS.

Kindly inform me whether oats, goose wheat and grass peas would be likely to yield well sown together? If so, the proportions of each to sow per acre, and suggest other grains that would likely do well sown together?

W. G. S.

York Co., Ont.

Ans.—See answer to W. J. Smith, in this issue.