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SOILS AND COMPOSTS

Best Suited for Pot Plants, Hot Beds, Seed Sowing, Etc.

Well-rotted, Tough, Fibrous Sod the best Basis-How to Prepare It-Substitute Potting Soil - Bone Meal a Valuable Fertilizer.

(Contributed by Ontario Department of Agriculture, Toronto.)

ECURING suitable soil or compost for all features of floriculture or horticulture is a very important matter if the best results are to be obtained.

The best basis for all ordinary potting soils is well-rotted, tough, fibrous sod, taken from loamy or light clay loam soils. Sod from an old pasture field, or from the roadside, from where the grass has been kept fed or cut down constantly, will give the closest growing sod, with lots of fibrous roots attached. These fibrous roots are one of the very necessary essentials in potting soils to keep the soil open and friable. The sod should not be cut from heavy clay soils, or where noxious weeds, especially "couch," "spear" or "twitch" grass is growing. The sod should not be cut from near pine or cedar not be cut from near pine of cetar trees as the turpentine in the leaves or pinnae of these trees is very de-trimental to plant life. It is also best not to cut the sod from very swamp soil. Well-rotted barnyard manure such as from an old hot bed, or cow manure, are both good ferti-liers to use for a soil compost. Horse manure alone is not a good fertilizer for a compost. About one-third horse manure and the balance cow manure will be suitable. Late in autumn or

early spring is the best time to pre-pare the soil compost, autumn pre-ferred.

How to Prepare.—The sod should be cut about four inches thick, and about eight to ten inches square. It should be stacked out of doors in an out-of-the-way part of the garden or grounds. A space six or eight feet long by five or six feet wide would be a good supply for a small green-house, or for a few hot beds for a year or two. Start by placing one layer of sod packed close together with the grass side downward over the space selected. Then add a second and third layer on top of the first layer. About four or five inches in depth of either of the fertilizers mentioned should now be spread evenly over the third layer of sod. Another three layers of sod should then be placed on top of the ferti-lizer as before. Then another layer of the fertilizer as before, and so on until the pile is four or five feet in until the pile is four or five feet in height. About two inches in depth of soil should be placed on top of the pile to finish off with. Place some wire netting or brushwood (not pine or cedar) all over the top of the pile to keep off chickens or animals. Keep the pile quite level while building, and draw it in slightly narrower toard the top. It should be flat on the top when finished. It may be necessary to give the pile one or two good soakings with water after it is finished, or during dry weather in summer, to hasten decomposition. In six to eight months it should be ready for use and will keep in good condi-

for about two years.

Preparing for Use.—When ready for use, trim or slice down, with a sharp spade, the quantity required from top to bottom of the pile so as to secure the proper proportions of soil and fertilizer. For potting pur-poses this should be put through a coarse sieve having a %-inch mesh. All the decayed fibrous part and the fertilizer, should be worked through the sieve. The partly decayed fibrous or organic matter that will not pass through the sieve readily should be chopped or pulled finely to pieces and put into the soil, if at all decom-

Tempering or Mixing Soils .- If the soil is of a heavy clay loamy nature about one part sand should be mixed at the time of using, with eight or nine parts of the sod compost for repotting purposes, for plants such as geraniums, roses, chrysanthemums and similar plants. If the soil the sod is taken from is of a light

sod is taken from is of a light loamy nature, a very little sand, if any, will be required.

For Begonias, Coleus, Callas (Arum Lilies), Gloxinia, Salvia, Ferns and similar plants one part of leaf soil, (rotted leaves) or black soil leaf soil, (rotted leaves) or black soil from the bush (decayed leaves), may be added to the compost and sand before mentioned. Black leaf soil from the bush alone does not make a good potting soil for but very few plants, it should be mixed with other soil as stated.

Substitute Potting Soil.—A good substitute potting soil or compost may be made by mixing about seven or eight parts of good, light, loamy garden soil, or loamy sub-soil taken from underneath sod, with one part sand and one part leaf soil as before mentioned, mixed well together. One part of dry cow manure, which can be secured from the fields where cows have pastured, or one part of pulverized sheep manure should be added as a fertilizer for this substi-tute potting soil. The pulverized prepared sheep manure can be pur-

at the rate of about \$2 per 100 pounds. Or about one pound of fine bone meal or bone flour to each bushel of soil may be used as a substitute fertilizer to those named. Sheep and cow manure are two of the best fertilizers to use in connection with all horticultural work, whether incorporated in potting composis as stated, or used out of doors as liquid solutions for flower borders or the vegetable garden during summer, if the ground is not rich enough in fertilizers. Seepage from the barnyard diluted one-half with water makes a good liquid fertilizer for outdoor use where the soil is poor.—Wm. Hunt, O. A. College, Guelph.

TEMPERATURES OF AIR

The Atmosphere and Its Relation to Agriculture.

times Beneficial and Sometimes Hurtful - Old Sol the Primary Source of Heat and Light - An Interesting Study of Air - Live

(Contributed by Ontario Department of Agriculture, Toronto.)

TMOSPHERIC temperature has ever been a matter of much concern to agriculturalists. A high temperature, although necessary and beneficial in some cases, is detrimental in others, but in each case requires a liberal amount of precipitation. On the other hand the destructive frost of late spring and early autumn is an unpleasant but frequent visitor to the agriculturalist. Man has harnessed much of nature and made it his servant, but as yet no one can say that man can control the atmospheric temperature, although he may modify it in a few instances or overcome some

of its disastrous effects.

The primary source of all heat is the sun. Old Sol shines and heat and light travels the intervening 92,900,000 miles of space with a velocity of 186,000 miles per second. Some of this heat is absorbed in its transit by dust particles, water-vapor and the temperature of the air in con-tact with it. The latter has the great-

er effect on air temperature.

Local conditions have a great effect on temperature. Water requires about five times the quantity of heat to raise it's temperature one degree as does soil, thus large water areas tend to prevent high temperatures. Also, as there is always slow evaporation and it requires about 300 times as much heat to evaporate one gallon of water as to raise its tem-perature one degree, the temperature is kept more moderate. Large swamp and bush areas free large quantities of water to the atmosphere as well as retaining the spring water longer in the country and consequently has a moderating effect.

Frosts are also prevented by water. swamp and bush areas, because they a high hum so readily cooled as large land areas Air of high humidity acts as a better blanket as it were, than the dry air Also the temperature at which dew is formed is higher and the lowering of the temperature may be sufficiently arrested to eliminate any danger of frosts.

The type of agriculture in any secon is decided by its air temperature. Any new crops which are imported must first become acclimatiz-ed to that section before they are a success. Winter cereal crops of Ontario and hay crops are not affected by extremely low temperatures un-less growth is started by warm wealess growth is started by warm weather followed by low temperature or by heaving of the soil about the roots. Late spring and early fall frosts cause much damage. If the temperature does not drop below 28 deg. F. only the tenderest vegetation suffers, but if below it wholesale destruction results. High temperatures cause strong evaporation from the leaves of plants and thus the need of a large amount of precipitation to prevent stunting or death itself. In a pamphlet by A. J. Connor, of

the Meteorological Office, Toronto, an interesting relation between the growth and yield of wheat and the temperature is set forth. Both yield and growth are increased by a low temperature and a low range in temperature. A critical period appears to exist in the latter part of the 90 days following sowing, and if the weather in this period be warm, dry, with great temperature range, the wheat plants will head quickly and the harvest be light; but if the cool moist conditions exist heading will be postponed and the yield increased. Thus it remains a matter of seeding at the proper time to insure the cool moist weather in the critical period. In the Western Provinces the sowning is early named, the last of April. ing is early, namely, the last of April, throwing the critical period about the middle of July, the variability of the temperature of which is the critical factor. However, the rule there is the earlier the better, while in Ontario we are unable to sow spring wheat sufficiently early to procure that desired cool, moist weather, nor can it be obtained by late sowing.

All cereals are best adapted to the emperate regions and especially

temperature range. Consequently the above temperature effect is applicable to all. Fruits as a rule require a higher temperature region, but not a high-temperature range. Many fruits, however, have a wide distribution and is the result of variety.—R. C. Moffatt, O. A. College, Gueinh.

Live Stock Notes.

This is the time of year when horses are in danger of getting too much hay and too little exercise. Idle horses will keep in much better condition if given regular exercise, and if their supply of hay is wisely restricted.

restricted.
Stables that are well ventilated and lighted, even though on the cold side, are more comfortable and more healthful than dark, steamy, warm Young cattle and breeding stock of

beef breeds enjoy a short outdoor run every day during winter, and treatment of this kind promotes health. Breeding ewes must have abun-

dant exercise if vigorous, healthy lambs are looked for. Good alfalfa or clover hay, with about four pounds roots, or two or

three pounds of silage, per ewe, per day, makes a good ration. Roots fed to horses not at hard work will cut down the cost, as well as add variety, to the ration.

ILL-FITTING COLLARS

The Cause of Sore Shoulders in Farm Horses.

The Skin Scalds and the Hair Falls Out -- Abscesses or Tumors May Form - Treatment Suggested -Planting Field Beans.

(Contributed by Ontario Department of Agriculture, Toronto.)

THEN a horse has been properly fitted for hard work, the collar fits properly and the driver observes reasonable precautions to avoid trouble, it is seldom that shoulder trouble occurs, but where the horse has not been prepared for work, or the collar does not fit properly, or the driver is careless, trouble is very liable to occur. When the horse has a long coat of hair in the spring it is good practice to clip the parts with which the collar comes in contact, as a preventive measure. In fact, in many cases it is wise to clip the whole horse.

Shoulder troubles are usually caused by ill-fitting collars, but in horses not accustomed to work, may occur

even when the collar fits properly.

The most common shoulder trouble is practically a form of scalding. The skin becomes inflamed and tender. continued the parts become raw. This is often due to neglect in cleaning the face of the collar regularly, also ughly cleaning the should regularly, and failure to remove the collar at meal times to allow the shoulders and collar face to become dry, and then clean them before putting the collar on again. For treat-ment, a lotion made of one ounce each of acetate of lead and sulphate of zinc in a pint of cold water, is probably the best application. This should be applied three or four times daily, and, if possible, the animal should be given rest or worked in a

breast collar. Abscesses or tumors may form on the shoulder as a result of pressure of the collar. One form of this trouble appears suddenly. A swelling of considerable size is noticed. It is not very tender or sore to pressure, and is found to be soft and fluctuating when handled. This is called a "serous" abscess. It contains a thin fluid, about the consistency of water called "serum" which is situated just beneath the skin.

Another form appears more slowly. The horse evinces pain when pressure is put upon the shoulder, and examination reveals a swelling. The animal can work and evinces little pain, except for a short time after he is put to work, until after he is allowed to stand for a few minutes. The soreness and enlargement gradually increase, and while the swelling may not appeal to the touch, as solid and hard as at first, it has not the fluc-tuating condition of the serous ab-The walls are thicker. contains pus or matter, and is called a purulent abscess. Treatment in either case consists in making a free incision through the walls of the abscess at the lowest part, to allow free escape of the contents, and then flushing out well three or four times daily until healed, with a five percent, solution in water, of one of the coal far antisentics or earbeits acid. coal tar antiseptics or carbolic acid. In this case the patient must have rest, or be worked in a breast collar.

Another condition from like causes is a fibrous tumor. This forms slowly, is more or less sore, in fact acts much the same as a purulent abscess. In some cases it is not pos-sible to diagnose definitely between a tumor and a purulent abscess with very thick walls, without exploring. A small incision is made right into the centre of the enlargement. If even a very little pus be present it

abscess, but if no pus be present the only treatment is dissection. The whole fibrous growth must be carefully dissected out, the wound stitched, except a portion at the bottom to allow escape of pus which forms during the healing process, and treated as an abscess.—Dr. J. H. Reed, O. A. College, Guelph.

Planting Field Beans.

Of the various kinds of field beans the greatest demand is for the Common White, of which there are several named varieties such as Early Wender, Scholfield, Elliott, etc. It is important to secure an early strain, to test the germination, and to plant early in the month of June.

Field beans are grown successfully on a great variety of soils. They do particularly well on fertile land which may be classed as loam, sandy loam, gravelly loam, or gravelly clay. All soils for bean production should be well underdrained either naturally or artificially. With proper drainage even clay soils have produced beans satisfactorily in regard to both yield and quality. Beans do particularly well after clover or grass sod and are frequently followed by sod and are frequently followed by winter wheat in some localities and by spring grains in other sections. It is of great importance to have the land thoroughly cultivated and a seed bed which is both moist and mellow.

In those sections where field beans are grown extensively, bean planters are sometimes employed. On the ma-

ever, the quantity might be reduced slightly. When the tops of the grow-ing crop are dry the beans should be cultivated occasionally throughout the season to destroy the weeds and to form a fine surface mulch.—Dr. C. A. Zavitz, O. A. College, Guelph

Roots, cabbage, fine alfalfa hay, or even a little silage, will be relished very much by sows, and will keep them in good health.

Women and Asthma. - Women are numbered among the sufferers from asthma by the countless thousands. In every climate they will be found, helpless in the grip of this relentless disease unless they have availed themselves of the pro they have availed themselves of the proper remedy. Dr. J. D. Kellogge's Asthma Remedy, despite its assurance of benefit, costs so little that it is within reach of all. It is the national remedy for asthma, far removed from the cl. ss of doubtful and experimental preparations, Your dealer can supply it.

In order to insure a healthy condition and to enable the sows to keep control of themselves, they should

have exercise every day.
Good alfalfa hay and soft cormake a splendid roughage feed, alfalfa being rich in protein and the corn in carbonhydrates, the one bal-ancing the other.

Even with special effort devoted

to sheep breeding and lamb raising it will be several years before the increase in flocks will be sufficient to catch up with the demand for wool and mutton.

Leaf Mold for Garden

Autumn leaves collected in piles in out of the way places will decay and furnish some excellent leaf mold for green house or garden work. Oak leaves are better than soft wood trees like box elder and soft

To Protect Ontario's Eyes.

After its defeat at the polls on tober 20, the Hearst Government October 20, the Hearst Government devoted itself almost entirely to routine business until relieved by the new administration on November 14. The former Government, however, had fathered the Optometry Act in the Legislature last session and one of its last official acts was to bring that measure into effect. The act was made effective from November 1, and made effective from November 1, and the Board of Examiners provided for, has been appointed. The board, which serves without salary, is made up as follows:

W. J. Maybee, of Toronto, for five years; Dr. A. C. Mackay, of Toronto, and E. Culverhouse, of Stamford, for four years; J. S. Collinson, of Dun-das, and Thern T. Barnes, of Sault Ste. Marie, for two years. The or-der-in-council makes Mr. Maybee chairman and Mr. Collinson, secre-tary. The former is a leading mem-ber of the Optometrists' Association

Dr. Mackay is principal of the Cen-tral Technical School. The important feature of the Op-The important reature of the Optometry Act is that it places a ban upon the peddling of eye glasses by men who have no technical knowledge of the goods they are selling and who often give eye sufferers glasses that aggravate their trouble, when the goods are not worthless. The act prohibits the "selling, fitting or supplying of everlasses from The act pronions the "selling, fitting or supplying of eyeglasses from house to house or in any other manner than from a permanent place of business. Penalties of \$10 to \$100 are provided for those who violate the act and similar fines for persons who call themselves "optometrist" or eptician" unless entitled to do so.

As a vermifuge there is nothing so potent as Mother Graves' Worm Exterminator, and it can be given to the most delicate child without fear of injury to