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C17

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a tiny bottle of cents, sufficient corn, soft corn es, and the ca

# Humus and Plant Food for the Orchard

soils is one of the important wheels factory yields of celery. orcharding. Humus is so important spring, however, seem to have been because a soil lacking it has very quite independent of manure, and, with Tatting exhibit. Pattern Exchange for the Farm Home, Programme Planacts like a sponge in that it absorbs grown practically as well on the plots

enters the plant, outside the carbon the cabbages." dioxide gas from the air, must dis- Second: Can fertilizers substitute solve in the soil waters before it can for part of the manure? be absorbed and taken up by plant. The Rhode Island Station's answer

Humus gives body to a sandy soil and opens up or aerates a heavy clay 16 tons plus fertilizer.) soil. Humus also forms the home and food for soil bacteria; those microsstantly at work in the soil.

Humus by its very decay in the during the first round of rotations. soil—which decay is largely due to . "The fertilizers used analysed about bacterial growth—causes the libera- 4-10-2 and 5-4-5."

The term "Humus" is used rather I dams, Ottawa, Dr. Shutt compared March: House-cleaning Made Easy. Dairying, Landscape Gardening, or Music. Success with Flowers, Plants other lines of Agriculture for women, means the decaying plant and animal matter in the soil. Strictly speaking, humus is the close black rubbory sub- analysis of fertilizers, and reported humus is the close black rubbery substance that is the product of decay, as fellows:but for practical purposes we shall use the term "humus" to mean the decaying substances of plant or varieties:

animal origin in the soil. and stubble of the field. The humus Acid Phosphate 400 lbs., Muriate of of manure is of special value because Potash 120 lbs., equal to 650 lbs. of it is alive with bacteria hence is a 2-10-10. carrier of quickly available plant-

humus in storage. Investigators give per acre. the following figures for losses:-

Manure changing to mellow condition loses 20 per cent by weight of its A=124 bus. 48 lbs. per acre. loses 40 per cent by weight of its A = 20 bus. 12 lbs. per acre. humus, by complete decomposition Test No. 2.—(C) Manure 30 tons

whether in the garden or the orchard acre of 4-8-11. If the full physical benefits of manure | Celery-Largest gain for D over C

#### Two Questions.

High transportation charges on

have on soil humas? Fertilizers cause (F) Manure 15 tons plus fertilizers tive in the prevention of Early and day's quotations on butter and cheese tive in the prevention of Early and day's quotations on butter and cheese

bacterial activity of the soil which is Tomatoesthe reason why the humus of fertifized E=5 tons 1,424 lbs. per acre. Aver-Branch at Ottawa.

more rapid use of soil lime, hence could be added a large number of more attention must be given to lim- "practical" experiences.

vastly increased root growth, hence if by a practical farmer in 1921. lowed or if cover-cropping is practiced, in 1921 by F. W. Warmica nead Al-nevertheless proving of great value in ticular in regulation of temperatures. the supply of humus can be success- landale, on clay soil. The final report promoting trade in this connection.

is carrying on a test to find out if of the farmers in that district. The follows: Arrangement with the railfertilizer applied to three successive farmer undertaking the experiment way companies for 160 iced refrigerahay cross will increase three grain thought he could prove beyond a doubt tor cars weekly during June, July and The world's a room crops which follow the hay and if that barnyard manure was better than August for the transportation of With likes in the window! Let growing are enumerated.

on the hav crop may so increase the considerably better than this one so growth of sod as to add a very con- heavily manured, and moreover this siderable quantity of organic matter could be seen with the eye. He fre-

both physical and chemical, that is, and some fertilizers is much better ful experience. manure not only supplies humus but than a lot of manure, and that a liberal it increases the supply of available dose of fertilizer is equal to the plantfood. Hence a representative heaviest application of manure for enthe evening of that never-to-be for could verify by his own senses the

(2) Substituting fertilizers for one-half the manure.

(3) Using green crops (cover crops mostly) and fertilizers as a substitute for manure.

peas and cats eight tens of manure two of the best poisons to use. Paris

Spirit has to be received. A living, sion. But there is a higher quality of

aggree faight is required in the regiment. faith, which does not demand the ari and 2.500 dbs. of about a 4-8-4 ferti- green should be mixed in the proper.

Because of significant tons of manure two of the best potents to use. Paris spirm has to be received. A fiving, sign. Dut mere is a night quality of least faith, which does not demand the evidence of sight and tonch. That being of

# By Henry G. Bell

The supply of humus in orchard of fertilizer has not resulted in satis-

the machinery of successful "The cabbages grown the following water to the extent of three to four where green manure was plowed in Clothes Repairing and Pressing prior to celery, as where a fresh ap- Roll Call. Exchange of Bulbs. Water is absolutely necessary to plication of sixteen tons of manure plant growth because everything that in addition to fertilizer was made to

to this question is as follows:-(Comparing 32 tons of manure with

"The fertilizer has always replaced half the manure successfully from the sopic forms of plant life that are con- crop production standpoint, in fact, gave 8 per cent. greater average yield worth while. Music. A Girl's Preparterms.

tion of plantfood for your growing. In the 1917 report of the Division of Chemistry, Dominion Experimental The term "Humus" is used rother Farms, Ottawa, Dr. Shutt compared

> Dominion Experiments, 1917. Increase obtained from various

Test No. 1.—(A) Manure 30 tons Manure is Nature's first great vs. (B) Manure 15 tons plus fertilizers source of humus outside the grass made up of: Nitrate of Soda 130 lbs.,

Manure loses much of its valuable gain for B over A=69 bus. 33 lbs.

Turnips Largest gain for B over A = 264 bus. Average gain for B over burnus, changing to spotted condition Parsnips—Average gain for B over

loses 50 to 60 per cent by weight of vs. (D) manure 15 tons plus fertilizer made up of: Nitrate of Soda 240 lbs., These figures show the great neces- Acid Phosphate 480 lbs., Muriate of sity of working manure into the soil, Potash 200 lbs., equal to 900 lbs. per

> = 12 tons 1,080 lbs. per acre. Average gain for D over C = 7 tons 40 lbs. per

ncreased plant growth—hence fertili—made up of: Nitrate of Soda 120 lbs., Late Blight. A formula for making to anyone applying for them; circulations of dairy nows letter on the sers cause the using of more soil Acid Phosphate 500 lbs., Muriate of the mixture is given by the Dominion tion of a dairy news letter on the

soils is used more quickly than that age gain for F over E=2 tons 26 lbs. Increased use of humus means the To these Experimental Station tests

Corne'l University on a typical soil "The test certainly opened the eyes spection and publicity nature, are as humus of the soil. The conclusion with manure or alone, and put on bec and Halifax; arrangement for a Easter is here, and Spring! reached upon careful measurement of nearly 30 tons to the acre of manure "pick-up" refrigerator car service over the crops and physical examination in an adjoining plot to the one we

"The use of commercial fertilizers Much to his surprise two plots were to the soil when the sod is plowed quently stated that he never would have believed it possible, considering Comparing fertilizers to manure, the amount of manure put on his plot. the conclusion was that commercial Had I known he was undertaking this fertilizer, while not superior to farm little demonstration on the side, I fertifizer, while not superfor to farm little demonstration on the sate, a manure (ten and twenty tons per would have measured the piece and A.D. 30; a house in Jerusalem. Of course the effect of manure is quite satisfied that a little manure had told the disciples of her wonderience, and must have met Thomas with
these words of exultation. Except I

som manure, vs. those derived from reen manure and fertilizers.

Since 1917 Rhode Island Experifertilizer substituting for one-half that they were marked men. Association of the property o ment Station has been conducting just the usual amount of manure will protion with Jesus had made them objects such tests. The truck gardeners of duce large and paying results. Not of suspicion to the Jewish authorities. disciples saw Jesus' bodily presence Shode Island in co-operation with the only is the optimum amount of plant-Agricultural Experiment Station, laid food supplied, but the increased root Jesus appeared suddenly. Then to calm day of the second week. Thomas was the increased root beginning to the second week. Thomas was a station of the second week. Thomas was a station of the second week.

Protecting the Potato Crop.

High has the wield nearly approached tien of eight curves to forty gallens Vs. 24, 25. Thomas. called Didymus. faith, Jesus calls "blessed" the same

# For Home and Country

## Ideas Culled from the Spring Programmes

ROCKFORD (Grey County.) March: How to create and preserve

to the home. Music. The Twentieth of Agriculture, Toronto. April: Washing of fine blankets, woollens and bedding. Music. Home

Nursing and First Aid. CHERRY VALLEY (Prince Edward County.)

ation for Life. April: Present Day Problems. Music. How Shall I Tell My Child? REDNERSVILLE (Prince Edward

and Buns. Uses of Cheese.

Lecture Possibilities. Every Institute which undertakes to provide for the entertainment of secured by applying to the Departthe speaker while at the place of ment of Agriculture, Toronto: Carrots—Largest gain for B over A to the nearest railway station, is en- Products. meting, and transportation from and 221-Food Value of Milk and Its = 184 bus. 40 lbs. per acre. Average to the nearest ranway station, is en-products. the Department of Agriculture.

Among the subjects to be dealt with are: Health Problems, Labor Saving

Promoting Canada's Trade

in Dairy Produce.

AUGHRIM (Lambton County.) | Methods and Devices, Installation of ning and the General Conduct of the Institute, Organizing the Community for Study, Recreation and Amusement, Laws Pertaining to Women and Children, the Food Value of Milk and

Its Products. Application should be that atmosphere which gives character to the Institutes Branch, Department

Lecturers for more than one meeting during the year may be secured upon conditions announced from time to time. When a community has some special problem requiring help from outside the Department is also pre-March: Some things that make life pared to render assistance upon liberal

Where the Institutes wish to secure special instructors along such lines

Bee-Keeping, Poultry Raising, manure versus these from 15 tons and Shrubs. Seeing the Brightest they should communicate with the Agricultural Representative for their April: Progress of Cemetery Work. district. If there are inquiries for other Music. The Making of Bread, Rolls information along agricultural lines, he will also answer direct or refer WHAT FATHER ONTARIO WILL lege, Guelph, or to the Agricultural the inquiry to the Agricultural Col-School, Kemptville.

Household Economics Literature. The following literature may be

245-Food Values. 263-Mushrooms. 273—Community Halls.

vines are wet, apply one pound of specified routes for the transportation Paris green to fifty pounds of slaked of butter and eggs in any quantity to lime, land plaster or any perfectly dry Montreal, Toronto and Halifax from powder. Arsenate of lead paste used May to September; inspection at Toin the proportion of two to three ronto, Montreal and Halifax of iced pounds to forty gallons of water, or butter and cheese cars; maintenance powdered arsenate of lead at the rate of staffs of inspectors at Montreal and of one to one and a half pounds, ad- Halifax and in the winter at St. John, heres better to the foliage than Paris N.B., and Portland, Me., and of ingreen and is a good poison to use, spectors at London, Liverpool, Man-Spraying with Bordeaux mixture and chester, Glasgow, Bristol, and Cardiff; manure, and decreasing yields are = 9 tons 1,800 lbs. per acre. Average smallness sometimes escapes notice, the close of the year; issuing of night smallness sometimes escapes notice, the close of the year; issuing of night sausing gardeners and orchardists to gain for D over C = 4 tons 557 lbs. but is indicated by the presence of lettergrams to different provincial of-Potash 175 bbs., equal to 900 bbs. per Horticulturist in his bulletin on "The tenth of every month to those concern-

Largest gain for F over on application to the Publications seven full-time inspectors and three place among the field crops of Canada, more particularly in the province of part-time inspectors for the enforce more particularly in the province of Act. Thermographs or self-recording

# The Sunday School

#### EASTER LESSON

St. John 20: 19-31. Golden Text—The Lord is risen indeed. St. Luke 24. 34. Time and place—Sunday, April 9, There is no use in speculating why

First as to substitution of green should and can be fought and conHe now gives them their definite comprocess. Thomas must check his dismission as His ambassadors. Thomas must check his dismanure and fertilizers for stable quered if the well-known and thoroughly tested preventives are used," says

The new gives them their definite comprocess. Thomas must check his distask is the carrying on of His own said. My Lord and my God. It by tested preventives are used," says task is the carrying on of His own said. It is not for a moment to be supposed revelation of God. He breathed on is not for a moment to be supposed that Thomas actually but the matter "In 1919 more tomatoes were prothe Dominion Horticulturist. Spray- them: the symbol of imparting to that Thomas actually put the matter duced after rye where about a ton ing for the potato beetle should not them his own spiritual life. (Compare to the test. Seen of 5-8-5 fertilizer was used than where be delayed until the vines are badly Gen. 2: 7, where the same emblem is not seen thirty-two tons of only manure had injured. The longer the spraying is used of the natural life.) Receive ye Faith that rests on sight can be, of delayed the greater the loss will be the Hely Chost. There was nothing course, a genuine faith, and Jesus "Only where there was applied with Paris green and arsenate of lead are mechanical about the gift. The Holy fully accepts Thomas' eager confession. Spirit has to be received. A living sign. But there is a higher applity of

that from thicknown tons of monors of water with about four cunces of "Thomas" (in Hebrew) means "a word which he applied to Peter's great twin." "Didymus" is the Greek confession of his Messiahship, St.

these words of exultation. Except I from monure, vs. those derived from These practical results point un- which gave its foundation to the nailed to the cross, Thomas felt it gotten day of our Lord's resurrection, reality of that body which he had seen Christian hope. Doors. shut. fear of impossible for him to believe in a

out a system of crops and fertility and stubble growth resulting from the their startled bewilderment, He speaks with them. Although he felt unable liberal application of plantfood in fertilizers takes care of the upkeep of humus other than that returned by the humas of the hum humus other than that returned by the He could be unmistakibly recognized. Ver.); a sudden appearance as before. Vs. 27-29. Saith he to Thomas. He to leave them again, but was to be knew his disciples through and the key-note of all their missionary through, and so he answers Thomas In "Market Growers Journal," of be kept intact and in a thrifty condi"peace" was the restoration of perless, but believing. Literally Decome March 15th, 1920. Director Hartwell then if a maximum crop is to be observed to be some confidence, the second "peace" not faithfiess, but faithful." Faithlessis reported re the tests as follows: tained, and both insects and diseases was the preparation for work. ness, as well as faith, is really a process. Thomas must check his dis-

# SMOKE

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# Easter and Remembrance

Easter and remembrance—of women in a garden, Of lonely women who at dawn approached their Master's

The tomb of Him whose dying breath had craved the Father's

For those who mocked Him, saying, "Himself He cannot

Easter and remembrance—that the One they sought had risen Over Death itself had triumphed, so the white-robed angel To fulfil His wondrous promise Christ had burst His earthly

As a conqueror victorious had arisen from the dead.

Easter and remembrance—that our Lord to Heaven accended, That in the princely courts on high He rules as King of love, Remembrance that it was for us He to the grave descended, And that He waits our presence in the spacious realms above. -Christina W. Partridge.

Growing Corn for Ensilage.

ment of the provisions of the Dairy Ontario, where about thirteen million Industry Act and the Oleomargarine bushels are grown annually. In addition to the crop for grain, Canada The activities of the Dairy and Cold branch in the holds of vessels carrying ensilage. Of this about four and a On the other hand, fertilizers cause in Ontario in actual one-fifth acre tests partment of Agriculture designed to it is claimed that Canada is a greater tario. It is estimated by Dr. J. H. Grischale Deputy Minister of Agricult. s suitable order of cropping is fol.

The test was on ensilage corn grown duce, while not generally known, are country, and therefore the most particle in about forty thousand is housed in about forty thousand silos. In the March-April number of The Agricultural Gazette Dr. Grisdale has issued a statement covering the history, production, and utilization of corn in agricultural practice in Canada. In this the advantages of corn

Lesson 2. Large returns per acre. The average crop in this period of time has been equal to about 5 tons of clover hay per acre 3. Best crop on which to apply

manure

up a sod field.

4. Best crop to use when breaking

9. Best crop for supplementing dry pastures 10. Best crop to help induce cattle to consume coarse and poor roughage. 11. Cheapest and best succulent food that can be grown in the province of Ontario and Quebec.

5. Best crop for cleaning land.

weather conditions.

6. Easiest crop to harvest as

7. The crop most cheaply housed.

8. The crop most easily handled to

12. The crop that permits of the carrying of most live stock per acre. Referring to varieties Dr. Grisdale mentions Wisconsin No. 7, Golden Glow and Early Learning as most satisfactory in Eastern Ontario, but he mentions having seen an extraordinarily good field of Eureka grow-1. It is an exceedingly cheap feed the past four years, when all costs since, over a period of 20 years, costs were high, corn was produced at the Mary Carolyn Davies. have run from \$1.50 to \$3.92 per ton Experimental Farm at Ottawa at an when labor and supplies were most average cost of \$57,62 per acre, or

\$3.52 per ton, with an average yield of 16.4 tons per acre. Out of Doors. In the urgent solitudes Lies the spur to larger moode; In the friendship of the trees, Dwell all sweet serenities. -Ethelwyn Wetherald

### Easter

With dripping from the roofs when noon is high And murmurs from black water under snow, With fluff of swansdown on the far blue sky And beat of wings that swiftly northward go, The south wind, softly treading, passes by, The tenderest of all the airs that blow!

Then something in the heart awakes again Forgetting all the sorrows of dead days. To triumph over weariness and pain In larger hope for sombre untried ways.

With violets and snowdrops in her train Comes April, with the face of one who prays! -Nina Moore Jamieson.

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