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Scientific Americas

Agency for

WM. T. W. AYERS, Su., Manager

WATERLOO TTA T



FERTILIZERS FOR CORN.

fonchations Drawn from Ecottic Obtained at the Experiment Stations. Potash, nitrogen and pho-phoric acid are recognized as the essential elements in all fertilizers and manures. Often it mly one of these ingrodients is essential. At the Kentucky state agricultural experiment station the results of trials with fertilizers on corp made it appear on corn

sachusetts, similar trials were made last season, showing very much the same re-sults under different conditions of soil and climate. In the Massachusetts experiments it was found that while soils differ widely in their requirements pot-Belt is no experiment, as we have restored thousands to robust health and vigor, failed, as can be shown by hundreds of cases throughout this State, who would gladly whom we have strong letters bearing testimony to their recovery after using our Belt. ash more often or more largely proves beneficial to corn than either nitrogen or phosphoric acid. As a rule, it also most largely increases the yield of both grain

and stover, but its effect is greater on the latter. It is thought that the deyard manures, as a rule, lack this in-gredient, and farmers who use fertilizers have usually bought those rich in phosphorie acid, with little or no potash. Taking all the experiments of the station into account, the grand average increase in hard corn and stover per acre is as follows: For potash, 11.3 bushels; stover, 1.308 pounds; for nitrogen, 4.7 THE POWER OF MAN.

bushels, stover 359 pounds; for phos-phoric acid, 3.6 bushels, stover, 162 pounds. The increase due to potash, then, exceeded that due to nitrogen, as follows: Hard corn, 2.40 times: stover, 3.37 times. Over phosphoric acid the average increase was respectively: Hard corn, 3.14 times: stover, 8.08 times. It thus becomes evident that potash pro-duces relatively more effect upon the yield of stover than upon that of grain, and that it greatly exceeds either nitro-gen or phosphoric acid in this respect. Next to potash in its effect upon stover ranks nitrogen. Of the following two mixtures either one is recommended by the station as a good fertilizer for an acre of corn: First-Muriate of potash, 175 pounds: dissolved

COSMOPOLITAN DISPENSARY, Stockton, Market and Ellis Streets,

SAN FRANCISCO, - - CALIF. 100 pounds. Second-Wood ashes, 1,500 pounds; bone meal, 100 pounds; nitrate

EDAIR

COW TESTS AT FAIRS.

The Ohio idea That Has Evolved liself

GINSENG.

The Chinese prize, the Ginseng root, much more lightly than Opiour. They call is Ginaeng meaning the Power of Man. Whos serves the finest quality has been sold for \$100 per dimes. Now shy do they pay such a price? Beentasis they helleve it gives them the mainth usaired perve dotte. How many jappic suffer from weak-mean. What a distreming aliment You lack tim nerves force, energy, power. You feel all pero. You are charge perfug for strength, yet get-ting weaker and weaker. Listin to the voices of secon. Place your case before intelling all effer you can before intelling a letter you can have your case disgunged tree, also builting

r case disgnosed free, alsolu of all charges. Write to-day.

on this Subject. L. N. Bonham, secretary of the Ohio state board of agriculture, writes:

Two objections seem to hold against the common method of testing cows at fairs First, that under the excitement of removal from customary quarters and from change of feed and surroundings the flow of milk is not normal and the test made under these unfavorable conditions does not show the real capacity of the cow as a milk producer. Second, that comparatively few cows are in full flow of milk at the time of

MANAGEMENT OF BEES

An Iowa Woman's Plain Account of Her Methods in the Amory.

Mrs. Henry Lown an lowa terkerp er, gives the following straightforway account of how she manages bees in The American Bee Journal

In the spring i clipped the wimes of all queens that were not clipped ton ony No. 1 swarms. 4 nive u. No. , 18 queenless. I cut all queen cells out ct When No. 2 swarms I cage the queen and lay it on top of No. 1. The swarm will find their queen and settin occurs with certain soils and crops that on top of hive No. 1. I move the queen cage to the front of the entrance. they will begin going in. When partix in I give them their queen. Then was begins. I wet a rag with water and that only in those cases where potash was a chief ingredient was there any profitable use of a commercial fortilizer the rag in at one corner of the entrance. This gives them all the same scent and At the Hatch experiment station, Mas- they are peaceable. I manage all my

colonies in this way. I give them plenty of room. I have twenty-six colonies and work one-half for extracted honey and the rest for comb honey | i get the honey if it is to be had. In ten or fifteen days they will build queen cells and swarm out i cage the queen and lay the cage in front of the entrance; then I cut out all queen cells. The swarin then comes back and goes in and begins to work as if nothing had happened. Sometimes they will ficiency of many soils in potash may be accounted for from the fact that barn-second time. I then cage the queen and cut out queen cells, when they will come back, go in and give up swarming Sometimes I have three or four swarms

a day. As fast as they swarm I cut out queen cells, so as to be ready to double up all swarms that come. 1 had thirtyfour swarms the past season and doubled up all but one that I hived. I am fifty four years old and do all the work in the apiary myself. As it has benefited me in managing my aniary in this way 1 want others to be helped by it I found

it out by experimenting.

bone black, 175 pounds; nitrate of soda, composition and forms carbonate of am. bran monia. It is very rare that any atomonia c can be detected escaping from a monute of soda, 100 pounds. Apply broadcast heap. The fetid odor of a manure pile is not caused by ammonia, but by compounds of sniphur and carbon, the same

as those evolved by decaying eggs and on left At a meeting of Iowa farmers the hay loader question was discussed. One farm-nure is very slowly disengaged, requir ing a year or more before it is all procometimes injured by the loader. Possi- duced and evolved, and as the soil absorbs bly this may be the case, but not often. It freely there is scarcely any danger of says The Farmers' Review, in which is any loss of this valuable part of the ma-also expressed the opinion that the loader nure as it is commonly used. The pungent odor of a norse stable is caused to and its contemporary inventions for gent odor of a horse stable is caused by speedy work in the hay field have proved the escapang of aminonia, and farmers of inestimable value to the farmers. E. lose more of this element of manure in C.e. this way in one warm might from an unexpresses it as his opinion that the acclean horse stable than from their macusation of injury may apply to the swath loader, because a big patch has to be cut monia in manure is worth seventeen

A PATRIOITC WORK.

Every percent who is opposed to Free Trade Slavery and Lerors American Industrial Independence scenzed through the policy of Protection, should read the documents published by the American Protoctive Tariff League, As

a patriane entrem ill's your duty to place these dominants in the name of your friends. They are left setting soft a subserve, and embrace states of a spheric constraint question. or hanne multiples over 18 different doen-

ments, comprising nearly 40 pages of plainly printed, caratally edited and reliable informainn. Among the anthors of these documents

Frinta on left shoulder. Range in Grant courts, Keeney, Eli, Hepping, Or, Honses J L and see of clobe on left stille, hange in Unabilia and Norrow counties Lesley, M.C. Mothmaoli, Or -- A triangle Wiwith all lines extending pa thedy of figure of see on left shoulder, on eather dimension on left shoulder, split 10 right are used in the fister of Hange in Graut courts and to parts of John Day Lesley 1 W barren for M. tinn. Among the anthors of these documents inst. Among the anthors of these documents is been to third sender 5. M. (ultim, of this provide a state of the sender of the sender is the sender of the sender of the sender is the sender of the sender of the sender is the sender of the sender of the sender is the sender of the sender of the sender is the sender of the sender of the sender of the Arrientium of the sender flow for the Arrientium of the sender flow in the sender of the sender flow of the sender in the sender of the sender flow of the sender in the sender of the sender flow of the sender in the sender of the sender flow of the sender in the sender of the sender flow of the sender in the sender set of documents will be sent to any address, not for documents will be sent to any address of the sender flow, Senters, and Address, Withur F. Wakeman, Soc'y, No. 32 West Twenty-Third Street, New York. Leaher, J. W. Reppner Or. - Horses hearded 1 Non left shoulder: carries sime of her blar by the over right eg., three sline in right ear.

Loften, Stepnen, Luz, Or,-S L on left hat on cattle, crop and split on right car. Horses same brand on left shoulder, Hange Grant county. county, Lieualion, John W., L⁻¹ Or, -Horess branded half-cucle JL connected on left shoul-der. Cartle, same on left hip. Bange near Lex instan. Lord, George, Heppner, Or. -Horses have near tox inston. Lord, George, Heppner, Or. -Horses have near builde H connects Somotioness called a owing H, on left shoulder. Maxweil, M. S. tousselberry, Or. -Horses handle diom link on left shoulder, exting, some on d bip. Ear mark, ander but in left som distribution to be ander the left som right high threes M on first some on left should an left should some on left shoulder. McCamber, Jas A. Echo, Or. -Horses, M with har over on right shoulder. Mand. H. S. Long, Or. -Horses, old water Zus right hip; young stock, small zz on left should be and the source of the source of the source of the mand. H. S. Long, Or. -Horses, old mares ZZ on right hip; young stock, small zz on left shoulder.

-TOUS BRANDS

While you keep your subscription paid up ye

houlder. Morgan, Thos., Heppner, Or.—Horses, circle f on left shoulder and left thigh; cattle. Z ou which you brand in free of charge. Allyn, T.-J., Ione, Or. Horses GG on left, budders exits anne on left hip, under bit on uch ear, not upper bit on the left; range, Mor-Ton introducer and left thinks; cattle, Z on right thigh, Mitcheil, Oscar, Ione, Ot. – Horses, Ti on right tide, and the state of the state of the state of the state of the state McGarner, D. O., nownwrite, Or. – Horses, Finner & on such stated er, cattle, M2 or hard McKerk, W.J. Mount Vertuch, Or. – XI on cattle of right high corp, in right our, half crop, no left same brand on horses on left hit. Habse in Grant county.

ty. roma, J. C. Alpins, Or. -T with bar un-mileft shoulder of horses; cattle same

Allison, O. D., Eight Mile, Or. --Cattle brand O D. on left buy and houses same brand on right onney, McCarty, David H., Echo, Or. Horses branded Di connected, on the left shoulder; cattle same

O Don left huj and horses same brand on right chouster, Hange. Eight Mile. Address, T.C. Dayville Or-Straight mark across the thigh and two crops and a silt in the right en-rorses. J. upside down on the right shoulder, honge in Grant county and Bear valley. P.O. address also at Hardman.

DM sommetted, on the left shoulder; cattle same on hip and note. Mediar, Franck, Fox Valley, Or.—Mule shoe with toe-cock on cattle on ribs and under in each sur, Franck, Fox Valley, Or.—Mule shoe with toe-cock on cattle on ribs and under in each sur, horses name brand on left stiffs. McHailey, G. V., Hamilton, Or.—On Horses, S with half circle nucleo on left shoulder; on tatle, four bars connected on top on the right side. (lange in Grant Commy.) Neal. Andrew, Lone Rock, Or.—Horses A Non-metted on left shoulder; antite same on both tops, Newman, W. E., Hepper, Or.—Horses A Non-Nordyke, E., Silverton, Or.—Horses, canle I on left than i cas the same on left shoulder Nordyke, E., Silverton, Or.—Horses, canle I on left than i cas the same on left homilder of left and county. address also at Hardmay, Or.—Horses, JA con-Address also at Hardmar, Or.—Horses, JA con-address also at flark, cattle same on left hip. Ayers, Johnny, Lena, Or.—Horses, branded finance out ein hip, cattle same on right hip. descrop off right war and upper hit on same. Birth, Perry H., Heppar, Or.—Horses Roman true on right shoulder. Range in Morrow soundy. akman, Goo., Hardman, Or.-Horses, a fla

houste . Olp. Merman, Prairie City, Or. - On cattle, C Prompered on left hair horses on left stille Fork, Reeman, France CDS, OL. Ch. Anton, P. Commercial on last high borbase in last setting on most setting on the setting of the setting

ft snonider. Paper, J. H., Lexington, Or. -Horses, JE con-

needed to fait scientific, encoded and and the science of the scie

Girant county Olier, Perry, Lexington, Or.-P O on (ef)

Kenny, Mike, Heppner, Or.-Horses branden RNY on loft hip cattle same and grop off left car, under slope on the right
 Keller, Richard, Rianton, Grant county, Or.-E & In equare, cattle on left hip: horses same on left shoulder. Rauge heer ruley.
 Kirk, J. T., Heppner, Or.-Horses, 69 on left ishoulder, rathe, so on left hip.
 Kirk, J. C., Heppner, Or.-Horses, 17 on either finance out inft aide on left hip.
 Kumberland, W. G., Mount Vernen, Or.- 1 Lon entities of right and left hiles, would be first as in for bar and under coop in mint very Horses anne brand on left shoulder. Runge ar Grant south.

right source chains speech of the speech Franket with the second second

dight. Potter, Dan, Lexington-Horses branded MP connected on left shoulder; cattle same on right Borg, P. O., Heppner, Or.-Horses, P B on left

To same on the second Grad county, Cuth, Z., tabb Or = Y D on horses on left stille. Using unstate virtue over it, on left shouldor, and on left stille on all colts under 5 years, or left shoulder only or all horses over 5 years. All

cross with quarter-cricke over it on lort stiffe. Reninger, Chris, Heppner, Or.-Horses, C.R. on left should a.

Left shoulder only on all horses over 5 years. All range is Grant contry. Clurk, Wm. H., Lena, Or.—Horses WHC con-nected, on left shoulder; cattle same on right into. Its ge Morraw and Umatila counties. Cate, Chas. R., Vineau or Leen. Or. Horses it C or right shoulder; cattle same on right hit-hance Morrow and Umatila counties. Cocher.n. Chas. Long Or.—Horses, HP cor-nected on laft shoulder; cattle, C on both left lapaned stiffs. Hange in Morrow county. Catheda, erop of right end, and sit in left car-our horses same brack on left shoulder. Bange of former same brack on left shoulder. Bange of the county. left shouldes. Rice, Dan, Hardman, Or.; horses, three panel worm feace on left shoulder; calls, DAN on worm feace on left shoulder: ca.tle, D.A.N. on right shoulder. Kange near Hardman, Houro, Wm. Long Crock, Or.,-Brands horses 8 of right-shoulder. Kange Grant and Morrow

Constant Strategy and Strate right hip and crop off right ear. Knuge in stor

Figure 1ap and crop off right enr. Knige in Mor row county. Knesh Bros., Heppiner, Or.,—Horses branded X on the right shouldner; cattle, IX on the self ap crop off left ear and dewing on neck. Bange I Morrow and adjoining countres. Rout, William, Probleton, Or.—Horses R on left shoulder; cattle, R on left hip, crop off right ear, underint on left ear. Sheep, R ou weathers, round crop off right ear. Kange Uma-tilla and Morrow unities.



in Grant county. Smith Bros, John Day, Or--H Z on cattle on le talonider.

and harrow in. Hay Loaders. er said that he had found that hay was

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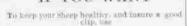
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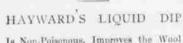




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cent, of the first premium for each animal en-tered and for each raiss in which its enters, except for the sweepstakes medal. Second -Only animals entered in both the exceptation in addition to the 5 per cent, entrance be the sum of five dollars must also accom-pany the entries made by each person, which am is to pay the traveling expenses from Co-lumbus and return of the person appointed by the state board of agriculture to make the test. The test will be made within one week after the entries have been revived. Fourth The test to be limited to two trials if desired by the owner, he to pay each time the leve dollars for traveling expenses of the toter, but no per diam, and the highest of the tweet. For the taken as the basis of the swerd. ward. Fifth-Entries and tests may be made at any

Fifth—Entries and tests may be made at any time prior to Sept. 1, 1895, but all cows entered for the test must be exhibited at the Ohio state fair of 1892, when the awards will be made. No awards will be made to any owner whose cow is not present during the fair unless in the meantime the cow has died. Sixth: Change of ownership of cow not to effect the award, provided all other conditions are compiled with.

H AVING purchased machinery for granding form Meal, we invite all our patrons to bring in their corn and get in ceturn a superior

energy the saved, provided all other conditions are compiled with. Seventh Tests will be made, so far as prac-ticable, by the same tester selected from the employees of the Ohio agricultural exper-ment station, who will seal the sample of milk as soon as drawn and deliver the same to the chemist of the station, together with the name, age and breed of the cowner. The chemist will make the analysis, keep record of the same and propage report to appear in the re-ports of both the station and the state board of agriculture.

ports of both the station and the state board of agriculture. Eighth Cows entered for the test may be fed at the discretion of the awner, but he shall lie with the severatory of the state board of agriculture before the result of analysis will be made known an affidivit that during the test and for two weeks prior thereto no drugs nor condiments were fed nor anything but water given to drink. Prizze- For largest yield of fat from twen-

water given to drink. Prizes-For largest yield of fat from twen-ty-four hours mills, taken at 8 o'vlock a.m. and 6 o'vlock p.m. of same day and determined by chemical analysis of samples taken by the tester from the experiment station, the cow prine, \$50. For largest yield of solids, not including fat, of the soil are favorable, such thin sow-

Colonel F. D. Coburn believes it is possible to hibernate a hog as a bear hibernates—hole him up through the winter in a straw stack or some such a pig here. I am of the opinion that WE HAVE YOR SALE ALL GINDS OF UN-

nd year after birth Third year after birth. ourth year after birth. ixth year after birth Eighth year after birth

nth year alter birth. This table shows the largest number of eggs in the third year; yet many of our poultry writers tell us that it is a mistake to keep hens after they are two years old, as they are then past the best laying period.

Sowing Wheat.

Professor Blount, after ten years' ex-periments in thick sowing of wheat, says: "In all cases and under all conditions, except late sowing, it has been found that thirty pounds of good, sound and pure wheat is enough for an acre, drilled or broadcast. In a bushel of com-

mon sized wheat there are in round numbers \$22,000 kernels, half of which, if sown evenly upon an acre, would place them less than four inches apart each way, giving each kernel about twelve naving been milked out clean by the tester the square inches on which to grow and de-evening before the test, first prize, \$100 second velop. If soven early and the conditions velop. If sown early and the conditions

For largest yield of solids, not including the first prime, SNS second prime, SNS. To the cove showing the most milk, most fait and most solids, sweepsiakes prime, all we medial, in addition to any other prime or prime the prime of the solid second pri

Beans for Stock in England. Beans are raised in large quantities

 Second, that comparatively few cover are in full how of milks the time few more than the optimized apper bin in early without consists in immersing the second test optimized apper bin early without consists in immersing the second test optimized apper bin early without consists in immersing the second test optimized apper bin early with early and aude is all and aude the ovarium of a fowl is composed of 600 ovals or eggs, and consequently a hen cannot lay more than 600 eggs in her Other portions of the seed are treated in the portions of the seed are treated in the seed are treated in bit side of one is some band

> 100 to 1:39 .120 In 135 100 to 115 60 10 30

Other portions of the seed are treated in the same way. The temperature of 1321g degs, is maintained by adding hot or cold water as may be required.
A Good Bean Crop.
Now that improved methods of harvesting have relieved the severe back aching labor incident to pulling beans they may be grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger scale with loss forebodings. They are best grown on larger from heavy texture bat for this could er attile, for might hip of thigh. Go, Henry, Heppner, Or.-Gittle, LE on left shoulder.
Biorence, R. P. Heppner, Or.-Gittle, LE on left shoulder.
Biorence, S. P. Heppner, Or.-Gittle, J. Go, Henry, Heppner, Or.-Gittle, U. Go, Henry, Heppner, Or.-Gittle, Core field.
Biole, Frank Heppner, Or.-Gittle, Son left shoulder.
Biole, Frank Heppner, Or.-Gittle, Son left shoulder.
Biole, Frank, Heppner, Or.-Horses transfer de shoulder.
Biole, Frank, Heppner, Or.-Horses transfer de shoulder.
Biome, Jone first staff, Con left shoulder.
Biome, Jone th should con the shoulder.
Bi 50 10 00 35 to 40 15 to 30 1 to 10

this crop, and on a clover ley plower after the clover has nearly got in blosson the yield is often twenty-five to thirty bushels per acre. It pays better that a standard of the state action and the provide the state action and the

W drawed lamber in allow as the winter in a straw stack of some static in a straw state feet have come from bad shoeing. Let

fork in righ, ear, underbit in feft. Swagart, L, Alpine, Or.—Horses, S S on right shoulder Sup. Thos., Happner, Or.—Horses, S A P on left, hip; cattle same on left hip. Shirtz, James, Long Creek, Or.—Horses, 3 on Shirtz, James, Long Creek, Or.—Horses, 3 on Shirtz, James, Long Creek, Or.—Horses, 3 on Shirtz, John, Fox, Or.—AC connected on burges on right hip; cattle, same on right hip, crop off right ear and nuder bit in left ear. Kange in tireat county.

Humpson K. Ridge, Or.-Horses branded Hint, Wm. E. Ridge, Or.-Horses branded ar cross on left shoulder: cattle same on left Wyland, J H. Hardman, Or.-Circle U on left thus