

Lime-Sulphur--Its Use as a Fungicide and an Insecticide

By Prof. P. J. O'Gara, Pathologist. Written especially for the Medford Mail Tribune. (Copyright, 1911, by Medford Printing Company.)

Eighth Installment. Use of Hydrometer for Calculating Densities of Lime-Sulphur Solution.

If the commercial brands of lime-sulphur, as well as the home made article, could be made of standard density, the matter of dilution for use in the orchard would be a simple matter. However, since there is a wide range in density, and, at the same time, a wide range in the different strengths necessary to give the desired results in controlling insect pests and fungous diseases, the only way to be accurate in the matter is to have at hand a conversion table showing the equivalent Specific Gravity for each degree Beume. This is with the understanding that the Beume hydrometer is the one used. The writer would feel inclined to discard the Beume hydrometer, but, since it is in such general use among fruit growers, it cannot be entirely done away with at once. Hydrometers may be purchased with both the Beume and equivalent Specific Gravity corresponding with the Beume graduations marked on the same scale. Such an instrument may be obtained from Bausch and Lomb Optical Company, San Francisco, California. In order to calculate densities the following table is appended:

Table Comparing Beume's Hydrometer and Specific Gravities

Table with 2 columns: Degrees Beume (0 to 45) and Specific Gravity (1.000 to 1.421)

This table has been taken from Kent's Mechanical Engineers' Pocket book, and while the decimal is carried to only three places, it is entirely satisfactory for our purpose.

If the density of the commercial solution or the home-made wash has been first determined by the use of a hydrometer, sprays of any desired density may be calculated by using the above table. Hydrometers do not detect impurities in lime-sulphur solutions; these can be determined only by chemical analysis. The rule for obtaining the number of dilutions is as follows: Divide the decimal of the concentrate by the decimal of the spray desired, the quotient will be the number of dilutions. Example: The concentrated lime-sulphur solution tests 3.4 degrees Beume which by the table is 1.288 Specific Gravity. It is desired to use the lime-sulphur solution to spray upon trees at 3 degrees Beume which is 1.029 Specific Gravity. The decimal of the concentrate is .288 which divided by .029 equals 14.4 which is the number of dilutions required, and which, of course, is obtained by adding 13.4 volumes of water to one volume of the concentrated lime-sulphur solution. This rule is based upon the general fact that the density of a solution heavier than water varies inversely with the number of dilutions. Another example: Supposing the decimal of the concentrate is known and the decimal of the spray? Let us take the figures in the example above. The decimal of the concentrate is .288 and 13.4 volumes of water are added to it. 13.4 plus 1 equals the number of dilutions. .288 divided by 14.4 equals .029 which is the

decimal of the spray and corresponds to 3 degrees Beume.

The rules may be stated in formula as follows:

- 1. To determine the number of dilutions. Rule: Decimal of the concentrate divided by decimal of spray desired equals number of dilutions.
- 2. To determine density of spray. Rule: Decimal of the concentrate divided by number of dilutions equals decimal of spray.

By applying these rules there can be no guess work, and sprays of definite density will be secured. The necessity for accuracy in diluting lime-sulphur is more important when it is to be used as a summer spray, especially when we consider the rather small margin between safe and unsafe densities in the use of the solutions on fruit and foliage. These rules apply to the dilution of clear solutions, or to solutions containing a small amount of sediment which may have a very slight effect in weakening the derived spray. When we come to the matter of treating the different insect pests and fungous diseases we will consider the amount of dilution necessary in each particular case; and a table will be added showing the number of dilutions for each degree Beume of the concentrate.

Mention has been made several times of the use of lime-sulphur as a summer spray. It may be said that the Rogue-River valley is particularly fortunate in having no fungous diseases such as scab of the apple and pear, the various leaf spots, bitter rot, black rot, and other diseases common to most fruit growing sections. The commercial lime-sulphur solution really has no place in the Rogue River Valley excepting as a dormant spray. Whenever lime-sulphur is advised by the writer as a summer spray, the self-boiled mixture is to be understood. So far as the orchardists of the Rogue River Valley are concerned, it may be emphatically stated that if he will apply the dormant sprays thoroughly and timely there will be no need of a caustic lime-sulphur spray for summer use. There is always danger of foliage or fruit injury by the use of a caustic spray. The fact that Bordeaux mixture causes foliage and fruit injury is the very reason why it is used as a summer spray is being abandoned. We will have to be just as cautious in the use of the commercial lime-sulphur. During the past year the writer has had occasion to see the results of the ill-advised use of too strong solutions of commercial lime-sulphur as a summer spray on both peaches and apple. Weather conditions influence, to such an extent, the effect of a caustic spray that good results may be had one year and the next year the application of a spray of the same strength may prove disastrous. Temperature, precipitation and humidity all have an effect upon both the spray and the plant. Anyone, therefore, advising the use of such a caustic compound as lime-sulphur for a summer spray, should take into account the factors named.

RETURN HOME THROUGH THE SUNNY SOUTH.

When you arrange your eastern trip be sure to include the Sunset Route through New Orleans, El Paso, Los Angeles and San Francisco for return. It is a splendid educational journey, and at this time of the year especially delightful because so warm and comfortable. Every mile is through the sunny southland—the rice and cotton fields of Louisiana and Texas, the vast mirage mesas of New Mexico and Arizona now spread with bright green, the orange groves and semi-tropic charm of California, miles and miles along the ocean shore, and several of the most interesting cities on the continent. Ask your local railroad agent all about it.

ARE YOU INTERESTED IN A GOOD INVESTMENT?

One hundred acres Butte Creek bottom, under irrigation, perpetual water right. All for apples or pears; can make big money raising onions, celery, tomatoes and all kinds of vegetables; big money in subdivision; joins a new townsite and the railroad; all under new wire fence; can be bought for one-half the price of adjoining land. Buy from owner and save the commission. Address Box 35, Medford, Or.

NOTICE. J. D. McArdis will arrive in Medford the 25th inst. with plans and specifications for his hangar and garage to be built on Oakdale avenue, Medford. Contractors are invited to bid. Mr. McArdis can be seen at the Nash hotel.

SOUND KNELL OF LUNCH WAGONS

Merchants File Protest With City Council Against Use of City Streets by "Hot Dog" and Peanut Merchants

A petition signed by a majority of the downtown business men asking the city council to have the "hot dog" and other vending wagons prohibited the use of the streets was referred by the council last night to the license committee for their consideration.

Judge E. E. Kelly appeared before the council to plead the cause of the petitioners and in the course of his talk said: "Some of these nuisances have been converted into places almost permanent in character, many of the owners of them having gone so far as to have electric lights strung for their use. The allowing of the use of the streets to these people, who invariably pull their carts right up in front of the stores and restaurants is unfair to the store keepers in that the latter have to pay rents, which are usually high rents as the 'wagon' men only frequent streets where travel is large."

Judge Kelly intimated that even licensing stands would not atone for the injury done tax payers on the grounds that the streets, being public property, were not intended for the use of individuals conducting vending institutions.

CHAMBERLAIN PRESENTS OREGON MEMORIALS

WASHINGTON, D. C., Feb. 22.—Senator Chamberlain has presented in the senate the memorials of the Oregon legislature, favoring pensions for veterans of the Oregon Indian wars, opposing reciprocity with Canada until an opportunity is given the people to fully understand the question, favoring the Sulloway bill to increase pensions and favoring legislation requiring the marking of penitentiary-made goods.

Sues for \$100,000 Damage.

NEW YORK, Feb. 22.—Weeping almost constantly, Anna Gruspan testifying today in her \$100,000 breach of promise suit against William English Walling, socialist and author, said that Walling had given her 100 francs to relinquish her claims on him.

TO CURE A COLD IN ONE DAY Take LAXATIVE BROMO Quinine Tablets. Duggitts refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25c.

NOTICE.

Notice is hereby given that the undersigned will apply to the city council of the city of Medford, Or., at its regular meeting on March 7, 1911, for a license to sell spirituous, vinous and malt liquors in quantities less than a gallon at its place of business at No. 31 South Front street, in said city, for a period of six months.

B. S. RADCLIFF & CO.

POLK'S OREGON AND WASHINGTON

State Gazetteer and Business Directory. Just issued for 1911-12, is the most complete work of the kind ever published. It contains an accurate business directory of every city, town and village in Oregon and Washington, and the names and addresses of country merchants and professional men, lumbermen, etc., who are located adjacent to villages; also lists of government and county officers, commissioners of deeds, state boards, statutory provisions, terms of courts, names of postmasters, postoffices, express, telephone and telegraph offices, justices of the peace, hotels, daily and weekly newspapers, besides much other information useful to all classes of business and professional men. A descriptive sketch of each place is given, embracing various items of interest, such as the location, population, distances to different points, the most convenient shipping stations, the products that are marketed, stage communication, trade statistics, the nearest bank location, mineral interests, churches, schools, libraries and societies. An important feature is the classified directory, giving every business arranged under its special heading, thus enabling subscribers to obtain at a glance a list of all houses manufacturing or dealing in any particular line of goods. The work generally is compiled to meet the wants of the business community and is so thorough as to deserve their liberal patronage. Price \$9. Seattle, Wash. Haskins for Health.

CITY NOTICES.

ORDINANCE NO. 443. An ordinance assessing the property adjacent to and benefited by the 8-inch lateral sewer constructed along North D'Anjou street from Sixth street to Third street for the cost of constructing the same and providing the manner of carrying said assessments into full effect.

Section 1. Whereas, the council did heretofore provide by ordinance for the serving of the owners of property adjacent to and benefited by the construction of the lateral sewer hereinafter described, and appear before said council and show cause why said property should not be assessed for the construction of said sewer, and did fix a time for hearing of any such protests, which notice was given in accordance with said ordinance more than ten days before the beginning of the construction of said sewer, but no protests against the cost thereof was made by anyone and said sewer was, by said council ordered constructed; and

Whereas, the cost of the construction of said sewer has been and here by is determined to be the sum of \$27,390. Therefore, said city doth ordain and declare that each parcel of property described below is adjacent to and benefited by that certain lateral sewer 8 inches in size, constructed on North D'Anjou street from Sixth street to Third street, and that the proportion of the cost of said sewer which each of said parcels of land should bear, based on the benefits derived respectively by said several tracts of land is the amount set opposite the description of each parcel below, that each of said parcels is actually benefited in the amount set opposite its description below by the construction of said sewer, and that said several amounts represent the proportional benefits of said several parcels from said sewer. And each of said parcels is hereby assessed the amount set opposite its description below for the construction of said sewer.

ASSESSMENT FOR AN EIGHT-INCH LATERAL SEWER ON NORTH D'ANJOU STREET FROM SIXTH STREET TO THIRD STREET.

Assessment No. 1.—Mary E. Wallace. Lot 17, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 70, page 23, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 2.—Sherman C. Godlove. Lot 16, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 68, page 627, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 3.—Sherman C. Godlove. Lot 15, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 68, page 627, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 4.—James Armstrong. Lot 14, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 36, page 41, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 5.—James Armstrong. Lot 13, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 36, page 41, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 6.—Bertha S. Barnum. Lot 12, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 7.—Bertha S. Barnum. Lot 11, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 8.—Bertha S. Barnum. Lot 10, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 9.—Bertha S. Barnum. Lot 9, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 10.—Anna Jeffrey. Lot 8, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 11.—Anna Jeffrey. Lot 7, block 22, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 45, page 345, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 12.—John A. Smith. Lot 18, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in Vol. 58, TR. 25 feet; rate per foot \$1.18; amount \$29.50.

CITY NOTICES.

townsite of the City of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 31, page 487, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 15.—Bertha S. Barnum. Lot 15, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 31, page 487, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 16.—Bertha S. Barnum. Lot 14, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 31, page 487, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 17.—John W. Chapman. Lot 13, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 19, page 38, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 18.—John W. Chapman. Lot 12, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 19, page 38, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 19.—Alida R. Miner. Lot 11, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 85, page 155, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 20.—Alida R. Miner. Lot 10, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 85, page 155, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 21.—Alida R. Miner. Lot 9, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 85, page 155, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 22.—Alida R. Miner. Lot 8, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 85, page 155, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 23.—Alida R. Miner. Lot 7, block 23, original townsite of the city of Medford, Oregon; frontage 25 feet on the east side of North D'Anjou street, and described in volume 85, page 155, county recorder's records of Jackson county, Oregon; 25 feet; rate per foot \$1.18; amount \$29.50.

Assessment No. 24.—Lillie Patterson. Lot 12, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet on the east side of North D'Anjou street, and described in volume 85, page 255, county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 25.—Lillie Patterson. Lot 11, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet; on the east side of North D'Anjou street, and described in volume 85, page 255; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 26.—Jesse Honck. Lot 10, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet; on the east side of North D'Anjou street, and described in volume 75, page 535; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 27.—W. S. Barnum. Lot 9, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet on the east side of North D'Anjou street, and described in volume 22, page 348, county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 28.—Anna Danileson. Lot 8, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet on the east side of North D'Anjou street, and described in volume 22, page 348, county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 29.—D. H. Miller. Lot 7, block 24, original townsite of the city of Medford, Oregon; frontage 50 feet on the east side of North D'Anjou street, and described in volume 22, page 348, county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 30.—Almira Miller. Lot 6, block 29, original townsite of the city of Medford, Oregon; frontage 50 feet on the west side of North D'Anjou street, and described in volume 54, page 342; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 31.—Almira Miller. Lot 5, block 29, original townsite of the city of Medford, Oregon; frontage 50 feet on the west side of North D'Anjou street, and described in volume 54, page 342; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

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Assessment No. 34.—Bertha S. Barnum. Lot 1; block 29; original townsite of the city of Medford, Oregon; frontage 50 feet on the west side of North D'Anjou street, and described in volume 21; page 608; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 35.—Oregon & California Land Co. That portion of the right of way on north D'Anjou street, between Sixth street and Fourth street, and fronting 600 feet on the west side of north D'Anjou street, and described in volume 21; page 608; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Assessment No. 36.—Oregon & California Land Co. That portion of the right of way on north D'Anjou street, between Sixth street and Fourth street, and fronting 600 feet on the west side of north D'Anjou street, and described in volume 21; page 608; county recorder's records of Jackson county, Oregon; 50 feet; rate per foot \$1.18; amount \$59.00.

Section 2. And it is hereby ordered and ordained that said several assessments and the liens thereof be entered in the lien docket of said city, and that thereupon notice be given to the owners, or reputed owners, of said property, and that the same be enforced and collected in the manner provided by the charter of said city for the collection of assessments for the improvement of streets therein.

Section 3. It is further ordered that the notice above provided for be published three times in the Daily Mail Tribune, a newspaper published and of general circulation in said city, in the manner provided by ordinance No. 250 of said city.

CITY NOTICES.

The foregoing ordinance was passed by the city council of the city of Medford, Oregon, on the 17th day of January, 1911, by the following vote: Welch aye, Merrick aye, Emerick, absent, Wortman aye, Elfert aye, and Demmer aye.

Approved January 18, 1911. W. H. CANON, Mayor. ROBT. W. TELFER, City Recorder.

NOTICE.

To the real estate men will meet tonight at the Commercial Club room at the Natatorium at 8 p. m. All requested to be present.

A REAL CITY STORE. New, Clean Merchandise Displays. New, Modern Store. Everything is new from floor to ceiling. The groceries carried in this store are FIRST QUALITY and everything is sold at reasonable prices. Allen Grocery Co. South Central Avenue Half a Block From Main Street. Main Street Business Property. Nets Over 8 Per Cent Interest. Best location. Great increase in value. Lot 50 feet by 140 feet. Splendid buy for investment or speculation. Special price for quick action. Address Owner, Medford P. O. BOX NO. 477.

The Medford National Bank. Capital, \$100,000.00 Surplus, \$20,000.00. SAFE DEPOSIT BOXES FOR RENT. A GENERAL BANKING BUSINESS TRANSACTED. WE SOLICIT YOUR PATRONAGE.

GET THE HABIT. Of calling us if you have any electric work of any kind. We can fix you up in the best possible style. It is a Good Habit and Will Cost You Nothing. Electric Construction Co. PHONE MAIN 6501 220 WEST MAIN STREET