

October 2014

# Citrus Notes-Fertilization

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## Recommended Citation

Chapman, Charles C., "Citrus Notes-Fertilization" (2014). *Charles C. Chapman Citrus Speeches*. Paper 14.  
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CITRUS NOTES

"FERTILIZATION"

There is perhaps none of our work so unsatisfactory <sup>done</sup> to us <sup>most of us feel that it</sup> as fertilizing, and yet there is none of us but feels that it is necessary. <sup>most</sup> I suppose all of us have come to the conclusion that if we grow a crop of fruit <sup>after the trees are twelve years old</sup> we must furnish the plant food upon which to grow it, <sup>grown to be twelve</sup> after the trees have <sup>got to be a dozen years old.</sup> The magnificent fertility of our soil in Southern California <sup>can</sup> was is such that we could grow almost anything on it for a dozen years, without <sup>supply additional</sup> ever having to <sup>with many young groves</sup> put anything on it in additional plant food. That is true, <sup>regard</sup> but the time has come, and I see evidences of it all about me, when the soil will no longer respond to this and produce a crop. <sup>without putting into it necessary fertilizers</sup> It won't do it today. Why are there so many barren acres all about us? I think an orange grove <sup>one fully matured</sup> is barren that does not yield, <sup>now</sup> a good fully matured grove, more than two or three boxes to the tree. I call that barren. I see <sup>doing so</sup> so many groves today in <sup>more</sup> that way. It is a fact, Mr. Chairman, that we are not producing as much fruit <sup>now</sup> today as we were five years ago, and unless we mend our ways we won't produce any more than we do now, <sup>from our mature groves</sup> off our mature groves. <sup>we will have to rely upon the</sup> The new groves will produce the fruit.

I am just as confident as I am of anything, <sup>that our short crops are not caused by</sup> from my own <sup>unfavorable climatic conditions as some of us suppose.</sup> experience, that the trouble is not climatic trouble. We reason <sup>& console ourselves</sup> it out so nicely that climatic conditions prevent a good crops. That is not the case, <sup>generally. It may be</sup> without your trees are frozen down. The orange tree is a marvelous tree to respond to treatment, <sup>and it is in want of proper care</sup> and it is <sup>usually</sup> not climatic conditions today that will rob us of our crops.



*It is here that*

Of course we find some groves that have a crop on but we find, *See*  
and I am alarmed, a large number of groves that have not a crop *that are not bearing as they once*  
today. I prophesy they will have less next year provided you con- *that there*  
tinue along in the same way you have continued, using the same *using the same methods*  
methods. We must wake up and realize that the tree today has *been*  
nothing to subsist on. It has absolutely absorbed all the plant *for some years*  
food the fertile soil had in it. You have soaked the ground with *such gases*  
water, baked it out, and the soil bacteria are burned out. What *burned*  
do you expect? Are you going to produce something out of nothing? *until it is practically dead.*  
Look at the condition of your soil. Look at it, do not deceive *Investigate*  
yourselves. Look at the condition of your trees. See the character *you grow*  
of your fruit as well as the quantity. The fruit has not the *It is not of the excellent*  
quality, and I surmise instead of *it was years ago* ~~us~~ growing better fruit, if you  
will look at the character of your own fruit, unless you have at- *This is*  
tended to it properly, it is not what it used to be. Now that is *unnecessary*  
all wrong because there is no tree that will respond to treatment *as readily as*  
like the orange tree, and it is susceptible of the very highest  
development. I think the trouble is that the tree has been starved. *chief*  
It has used up the remnants of plant food in the soil and is not *starved*  
getting enough, in harmony with its ~~needs~~ demands, its needs. *what it needs & demands. If it did it would produce*  
Now a fertilizer must be furnished in harmony with the demands *you more & better fruit than it could*  
of the tree. Not a one-sided fertilizer. I would use barnyard *such for instance as I regard manure*  
manure only when my trees were run down, in bad condition, starved, *from being*  
needed some strong fertilizer. Then I would put on the barnyard *then*  
manure, and I would put it on - not spread on a little light *a heavy application*  
coating, that does not do you a bit of good. Put it on as thick *any*  
as you can. Do it with a disc plow, *plow it under & you may be forced to use a disc plow* but it on thick enough to make



an impression on the soil. Unless you do that you <sup>will</sup> have not accomplished what you <sup>are</sup> ~~have been~~ trying to. If you have only enough for an acre put it on an acre, not on five, ~~acres~~.

I have observed that the <sup>constant use</sup> ~~content out~~ of barnyard manure will grow a magnificent tree, but produce no fruit. The tendency is to produce wood and not fruit. It is a one-sided fertilizer, and you cannot afford to use <sup>that much</sup> ~~a one-sided fertilizer~~ because you do not want to grow <sup>only</sup> wood. You want to <sup>want</sup> grow fruit. I like to use <sup>such</sup> ~~a~~ fertilizer as I see <sup>what</sup> ~~the~~ demands of the tree are. If it demands nitrogen I like to give it nitrogen. I <sup>will then</sup> like to give it <sup>on similar strong nitrogenous fertilizer</sup> tankage until the trees show vigor. You cannot grow fruit on a tree that is not vigorous. <sup>that is not well supplied with nitrogen</sup> When you need phosphoric acid put on your bone meal, and when you need potash put that on. <sup>do not fail to give it that</sup> I <sup>I have heard it reported that</sup> used to hear it said, I never saw it, don't know exactly what was said, but I know it was current among us that many of the groves on Southern California soils have an abundance of potash. I think it was Prof. Hilgard who said "you do not need potash, the soil has an abundance of it". Now I am not <sup>I have learned how</sup> a scientific man as you have already seen, but by experience and experiment, to grow fine <sup>plenty of them. To do this</sup> oranges, you must have <sup>your soil must have a harmonious</sup> well balanced fertilizer. <sup>I think the</sup> continued use of barnyard manure grows magnificent trees but no fruit. Of course the first two or three years it will, but then it will all go to wood. If you want to grow a fine orange put on your potash as needed, your bone meal as needed, and your nitrogen, and then in March when the tree is putting forth its blossom, to save the fruit, <sup>it is</sup> ~~(it is a tremendous~~ strain on the tree just at that <sup>is tremendous</sup> time) give it a little nitrate of soda on the surface, don't plow



it in.

Query: How much?

Ans. Well, that depends ~~also~~ <sup>from</sup> One and a half pounds - to two and a half pounds, if your trees are very large and not in very good condition.

Query: Cultivate it in, or irrigate?

Ans. No. The tendency of that is to go down readily. There <sup>you should plow under or drill in</sup> are fertilizers <sup>you</sup> you have to put down, but that naturally follows down to the moisture.

Query: How will you put your fertilizer in if you have a cover crop?

Ans. Put part in before you put in your cover crop. I believe instead of using the amount of fertilizer we have used we ought to use two or three times as much. <sup>It is a good time</sup> When ~~I am~~ plowing in <sup>the</sup> my cover crop that <sup>is the time to</sup> ~~is the time I~~ put in my bone meal.

Query: You tell us to put it in according to the appearance of the tree. <sup>How are you to tell</sup> ~~Now what we have got to learn is~~ how the tree looks when it needs a particular application.

Ans. In the first place you must be familiar with your orchard and know how it looks. <sup>I venture to say that</sup> Many of you are not. You <sup>perhaps</sup> think you ~~are~~ know how your trees look, but you do not. A man will say "I have the finest fruit that you ever saw. It is elegant, running about 75% fancy", and you go out there <sup>into his grove</sup> and you cannot find a dozen fancy oranges on a tree. <sup>He would not talk in that way if he knew</sup> That is because he does not know his orchard. Of course <sup>you</sup> I can <sup>easily</sup> tell when your tree needs nitrogen. When it looks impoverished, when the leaves <sup>look</sup> have not vigor, have not ~~any~~ of that bright rich color, <sup>last</sup> when there is no new development in the grove,



There is a demand for  
you must have <sup>it</sup> nitrogen, there. If your trees <sup>are</sup> not fruiting well  
give them an abundance of ground bone, or phosphoric acid in some  
form. I use bone because I like it better than any other form  
such as rock-phosphate. If your tree is not fruiting well, and is  
not in vigorous condition it needs <sup>such treatment</sup> that. If your <sup>it</sup> tree is growing  
a coarse orange, the skin is not of a fine texture, <sup>has</sup> got too much  
wood inside, is not rich and luscious, then I ~~say~~ give it potash.  
Do that at the same time you put on your bone meal. I <sup>I cannot talk</sup> do not know  
<sup>scientifically about this important question</sup> anything about it in a scientific way, but that <sup>in general is my method</sup> is what I do, and  
I grow pretty good fruit. I <sup>presume to say this</sup> say that because a good many of you  
<sup>complimented me by telling me so, as well as the price it brings in the market</sup> gentlemen have said it to me. My trees are twelve years old, and  
I have put on as high as forty pounds <sup>ground bone</sup> right along. The Valencia  
is a ravenous feeder, and naturally <sup>requires</sup> takes more food. We ought to  
never <sup>to</sup> allow an orchard to demand anything. Keep it evenly supplied  
so that it never indicates a lack of any of the  
essential fertilizing elements. Better be a little lavish  
than <sup>stingy in your applications</sup>. Your returns  
will ~~at~~ <sup>amply</sup> repay ~~for~~ you for being generous  
in feeding both your stock & your trees if you  
expect to work them hard.



DECEMBER 5, 1908

## CALIFORNIA FRUIT GROWER

chief trouble is that the tree has been starved. It has used up all the plant food stored in the soil, and is not getting what it needs and demands. If it did, it would produce you more and better fruit than it ever did.

A fertilizer must be furnished in harmony with the demands of the tree—not a one-sided fertilizer, such, for instance, as barnyard manure. I use it only when my trees are run down, in bad condition from being starved, and needing some strong fertilizer. I would then put on barnyard manure, and put on a heavy

Cable Address: "TRESTER".

application, not spread on a little light coating. That does not do any good. Put it on as thick as you can plow it under, and you may be forced to use a disc plow to do it. Put it on thick enough to make an impression on the soil. Unless you do that you will not accomplish what you are trying to do. If you have only enough for an acre, put it on an acre, not on five.

I have observed that the constant use of barnyard manure will grow a magnificent tree, but produce no fruit. The tendency is to produce wood, and not fruit. It is a one-sided fertilizer, and you cannot afford to use that kind, because you do not want to grow wood only. You want fruit. I want to use such fertilizer as I see the tree demands. If it demands nitrogen, I like to give it nitrogen, and I will then use tankage or similar strong nitrogenous fertilizer until the trees show vigor. You cannot grow fruit on a tree that is not vigorous; that is, not well supplied with nitrogen. When it needs phosphoric acid, put on bone meal; when it needs potash, do not fail to give it that. You must have a well balanced fertilizer, as well as plenty of it. Your soil must have a harmonious complement of the essential elements. If you want to grow a fine orange, put on your potash as needed, your bone meal as needed, and your nitrogen, and then in March, when the tree is putting forth its blossoms, to save the fruit (the strain on the tree just at that time is tremendous), give it a little nitrate of soda on the surface; do not plow it in.

From one and a half to two and a half pounds is necessary if the trees are very large and not in very good condition.

If a cover crop is used, put part in before putting in the cover crop. I believe instead of using the amount of fertilizer we have used we ought to use two or three times as much. It is a good time when plowing in the cover crop to put in bone meal. You can easily tell when your tree needs nitrogen. When it looks impoverished, when the leaves lack vigor, and have not that bright, rich color, and when there is no new development in the grove, there is a demand for nitrogen. If your tree is not fruiting well, give it an abundance of ground bone, or phosphoric acid in some form. I use bone because I like it better than any other form of phosphate. If your tree is not fruiting well, and is not in vigorous condition, it needs such treatment. If it is growing a coarse orange, the skin is not of fine texture, has too much rag inside, is not rich and luscious, then give it potash. Do that at the same time you put on bone meal.

We ought never to allow an orchard to demand anything. Keep it evenly supplied so that it never lacks any of the essential fertilizing elements. Better be a little lavish than stingy in your applications. Your returns will amply repay you for being generous in feeding your stock and your trees if you expect them to work hard.

### FERTILIZATION OF THE ORANGE TREE

Extract from address of Charles C. Chapman before the Riverside Citrus Institute, Riverside, Cal., February, 1907:

There is perhaps none of our work so unsatisfactorily done as fertilizing, and yet most of us feel that it is necessary. We have come to the conclusion that if we grow a crop of fruit after the trees are twelve years old we must furnish the plant food upon which to grow it.

I am confident that our short crops are not caused by unfavorable climatic conditions, as some of us suppose. The orange tree is a marvelous tree to respond to treatment, and it is a want of proper care and not climatic conditions that usually robs us of our crops. It is true we find some groves which have a crop on, but we see a larger number which are not bearing as they should. We must wake up to the realization that the tree of such groves has today nothing to subsist on. It has absorbed all the plant food the fertile soil had in it. In addition to this, you have soaked the ground with water, and baked and burned out the soil bacteria until it is practically dead. What do you expect from soil in that condition? Are you going to produce something out of nothing? Look at the condition of your soil. Investigate it. Do not deceive yourselves. Look at the condition of your trees. See the character of the fruit as well as the quantity you grow. It is not of the excellent quality it was years ago. This is all wrong and unnecessary, because there is no tree that will respond to treatment as readily as the orange

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