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## Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?

Posted by [Paul Goettlich](#)

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[Paul Goettlich](#)

[Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

August 17, 2014 05:19AM

Registered: 10 years ago

Posts: 13

I got leaf tests done by a different company this year. It only gives results with no normal limits stated. I sent these data to a consultant who told me nothing much beyond it's "a little too low in ..." Besides feeling silly for paying for this "advice," I still need to know what to do about the situation. In the past 5 years I have been here I have never gotten such poor leaf test results. The previous years were done by a university. Help please.

### The Results

#### Tissue Analysis Report

Sample Location A7

Sample Name Liberty Graft

----- %

Calcium Ca 2.03

Magnesium Mg 0.27

Phosphorus P 0.23

Potassium K 2.40

Nitrogen N 2.38

Sulfur S 0.14

Sodium Na <.001

----- ppm

Boron B 30.65

Copper Cu 3.07

Iron Fe 72.94

Manganese Mn 63.54

Zinc Zn 11.77

Sample Location A5

Sample Name Gravenstein

----- %

Calcium Ca 1.75

Magnesium Mg 0.26

Phosphorus P 0.15

Potassium K 1.53

Nitrogen N 2.63

Sulfur S 0.13

Sodium Na 0.005

----- ppm

Boron B 23.03

Copper Cu 4.44

Iron Fe 83.75

Manganese Mn 35.09

Zinc Zn 9.2

Thank you,

Paul Goettlich

Rockin' Rooster Ranch

Coquille, OR

Sunset Zone 5  
USDA Zone 9a

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[Brian Caldwell](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

August 26, 2014 01:35PM

Hi Paul,

Registered: 10 years ago

Posts: 69

Those numbers mostly look within normal ranges to me. Why do you think they are low, particularly the P? Cornell says the normal range for P is .13-.33 (for New York) and both your samples are within that range. Zinc looks low; Mg, Cu, B a bit low. Maybe the consultant was right--

My zinc numbers are like yours and I'm pondering how to get more available Zn in the soil; next year I'll start with Zn foliar sprays but I'd like to feed the trees through the soil rather than the leaves.

[Hemlock Grove Farm](#)

Zone 5 in New York

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[Paul Goettlich](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

August 26, 2014 06:53PM

Brian,

Registered: 10 years ago

Posts: 13

Do you have a URL for normal ranges?

I have been unable to find my last two leaf test results. But I know I wasn't even close to being low in Cu. However, see hithe consultant's emails below please.

**email #1:**

*\* Liberty Graft tissue is very low in sulfur, copper and zinc.*

*\* Gravenstein tissue is low in magnesium, boron and copper and very low in phosphorus, sulfur and zinc.*

*\* How do these deficiencies correlate to your soils? A paste analysis will be necessary for correlation.*

*\* Soil applying KMag, copper sulfate and zinc sulfate might help resolving some of these issues, although foliar feeding copper and zinc will probably still be necessary. Be careful foliar feeding to much sulfur since it will burn the leaves.*

He made no recommendations for resolving the deficiencies until I requested recommendations, which follow.

**email #2:**

*Copper sulfate, 25% Cu and epsom salt should be relatively easy to procure.*

**email #3:**

*10-15#/100 gal Magnesium sulfate per acre ; 2-5#/100 gal /acre; zinc sulfate 2-4#/100gal/ac; sulfur should soil applied depending upon the pH, if the pH is low use calcium sulfate*

I think I need to find a source for normal ranges. I wouyld also like to feed the deficiencies naturally through ground and possibly folial sprays. But I just don't know where to turn for info.

Thank you for your message.

Paul Goettlich

Rockin' Rooster Ranch

Coquille, OR

Sunset Zone 5

USDA Zone 9a

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[Brian Caldwell](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 14, 2014 01:43PM

Hi Paul,

Registered: 10 years ago

Posts: 69

Sorry to be so slow!

Here are some ranges (in table 3)--

[\[californiaagriculture.ucanr.edu\]](http://californiaagriculture.ucanr.edu)

And another--

[\[www.vegedge.umn.edu\]](http://www.vegedge.umn.edu)

I hope these are useful.

I would also like to remedy my low values via soil treatments rather than sprays. I think bumping up my low compost applications should do it over time. Meanwhile, my zinc is low so I'll put on some foliar zinc.

Good luck!

[Hemlock Grove Farm](#)

Zone 5 in New York

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[Paul Goettlich](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 15, 2014 07:04AM

Brian,

Registered: 10 years ago

Posts: 13

Thanks so much for the links. You're the only one who responded. I'm wondering if my questions are too sophmoric for this bunch.

Another question. Might having chickens around those same trees have an affect that would be indicated by the data I quoted?

Best regards,

Paul Goettlich

Rockin' Rooster Ranch

Coquille, OR

Sunset Zone 5

USDA Zone 9a

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[Paul Weir](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 16, 2014 08:46PM

You mentioned chickens around the apple trees and whether this might have an effect on the results.

Registered: 11 years ago

Posts: 187

I would say the environment around the trees will likely see a result, from the chickens or anything else you do in a focused manor around them, sooner or later.

Chicken manure and the work those birds do around the trees is generally seen as a good thing. So long as the trees are not within the permanent coop area, in question, I think you are perfectly fine to free run the birds around the orchard and even occasionally pen them into an area of the orchard (or around a specific tree) for more intensive scratching and foraging . . . Net result, in my opinion, chickens are a good thing.

This said, when you mentioned chickens and the apple orchard, a paper published from Washington State University came to mind.

Here is a link to it [[county.wsu.edu](http://county.wsu.edu)]

Good luck,

[Gopher Hill Apples](#)

Zone 8 in California

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[Brian Caldwell](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 17, 2014 05:04AM

not sophomsoric, just not easy!

Registered: 10 years ago

Posts: 69

I'mt not sure what effect the chickens would have--!

[Hemlock Grove Farm](#)

Zone 5 in New York

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[Paul Goettlich](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 17, 2014 07:53AM

Being new to all this I am hesitant to ask a lot. But I'd rather ask tough questions than easy ones. And I am thankful for your responses.

Registered: 10 years ago

Posts: 13

The Washington State University paper shows no statistical difference in apples, with some in pears. That is interesting. I never would have guessed that.

This is the 4th year chickens have been around the trees. Before that, the last owner actually encouraged elk and deer by feeding them. A lot of damage had occurred. I move them to and from another nearby area at the rear of the chicken coop, mostly because in the winter it rains a lot and the ground gets muddy. It gets so wet and muddy I have to spread 1-1/2" crushed stone so I can walk without slipping. By the time things dry out, the stone is almost incorporated into the soil. We feed the chickens pretty good stuff. It's unprocessed whole grains and seed plus minerals and supplements by Scratch and Peck out of Bellingham, WA. Organic. 3rd-party non-GMO certified.

Winter rain is the thing for us. It's quite heavy at times and washes out a lot from the soil. In our gardens, phosphorus, calcium, boron, and copper are low, with pottasium being very high. It's almost time for the gardens to be tested again. One last thing is that the gardens were built from existing soils plus purchased organic compost and soil. Next year will be the first year we can begin using our own compost made from animal (chicken, goat, sheep and turkey) and green manures. It's grown to a "massive" heap of dark fluffy stuff.

Paul Goettlich  
Rockin' Rooster Ranch  
Coquille, OR  
Sunset Zone 5  
USDA Zone 9a

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[Paul Weir](#)

[Re: Leaf Tests Show Low Mg, S an Cu. . .and Very Low P?](#)

September 17, 2014 08:40PM

Hi Paul,

Registered: 11 years ago

Posts: 187

No worries at all. As Brian said, not sophomoric, but complex and also a busy time of year for many fruit farmers, especially those of us focused on apples. If you ever see another grower who posts a similar situation or condition that might be similar to something you are experiencing, feel free to send them a 'private message' directly. All of the grower members of the HON are listed in a drop down list when you click into the private message system.

Please continue with the tough questions and situations that arise for you and yours, as you work to bring your orchard back into a healthy and holistic balance.

We were all new apple farmers once too. I know, I keep one foot firmly planted in my humble beginnings too as I never want to feel like I have it all figured out. There is always so much to learn. As Michael said in a recent post . . . we only get [50 chances](#) to get it right.

Keep up the good work!

[Gopher Hill Apples](#)

Zone 8 in California

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