What all this means for our future farming success

Soil Health Workshop
The Dalles, OR
November 16, 2017

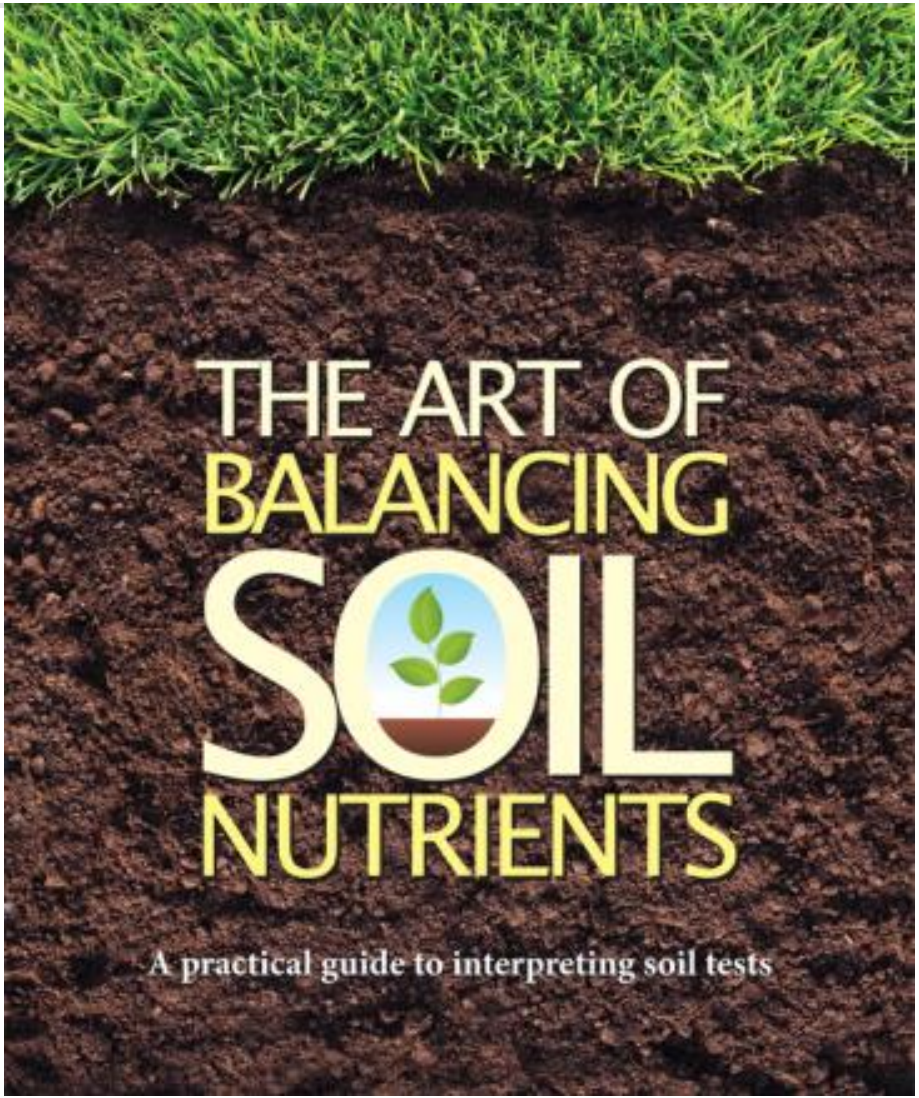
“More and more,” says Secretary of Agriculture Wickard, “**agriculture is becoming an exact science**.

To be successful, a farmer must know a great deal about his land and the products he plans to raise.

American Historical Association

Soil Stewardship

- Soils are not going to improve on their own
- Time will not solve acidity and nutrient problems
- Creative problem solving
- Working together to learn, repair, and improve
- Leaving the land better than we found it



Author: William McKibben

Soil bacteria and soil fungi are the start of the soil food web that supports other soil organisms and the functions of a healthy soil

Can American soil be brought back to life?

A new idea: If we revive the tiny creatures that make dirt healthy, we can bring back the great American topsoil. But farming culture — and government — aren't making it easy.

JENNY HOPKINSON *POLITICO*

Both winter wheat plants are 8 months since planting

*** At least 80% of the soil in northern Idaho and eastern Washington (Palouse) will someday require lime to produce maximum potential crop yields.**

Mahler 1986

We started farming in the Palouse in 1890. We started with wheat production and transitioned into a wheat, pea rotation later on. We started transitioning out of peas in 1992 to chickpeas. We continued our same fertility/tillage program until around 2006. We wanted to raise more DNS so decided to use bio-solids to help with our nutrient requirements.

We were starting to see variable yield results in our wheat and legumes. We went away from the plow. In 2013, we started to notice problems in our club wheat (twisted roots, double cotyledons), but really did not address the issue at that time. We thought maybe there might be a soil fertility issue but let it go.

In the spring of 2014, we had major issues in our chickpeas. Pythium resistance was found in large patches throughout some fields. WSU addressed the issue and Intego was registered in time for our next garb planting (2017). The following wheat crops (2015 and 2016) were adequate in the those affected fields and we did not notice any difference. In 2017 we called WSU again because our garbs looked like #!!@ in the same areas as 2014. We thought resistance to Intego: no, that was not the problem.

What the HE double toothpicks is going on?

Soil samples taken and analyzed within the last month between good and poor sections of field.

Good	Poor
pH = 5.54	pH = 5.19
OM = 6.22	OM = 5.46
NO_3 = 64	NO_3 = 39
S = 13	S = 16
Mn = 72	Mn = 102
Al = 10	Al = 12
Base sat = 75	Base sat = 72

Conservation and low-impact farming keep the land healthy for future generations.

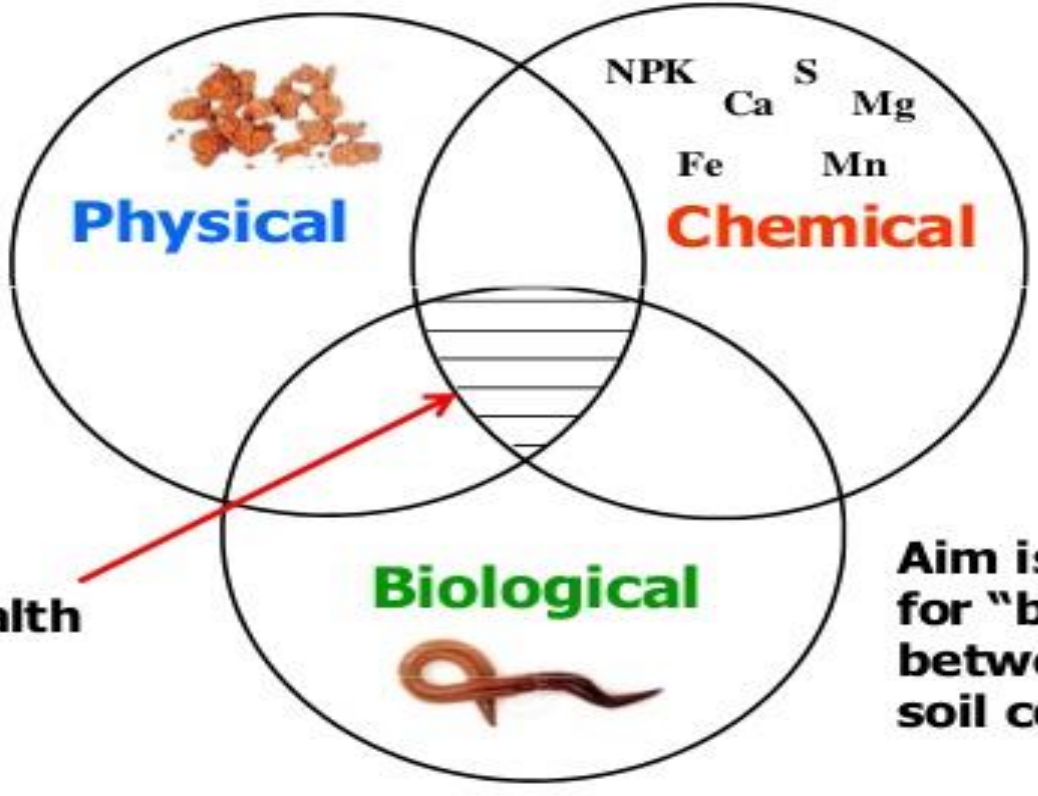
“God willing I’ve got another 20-plus crop seasons in me,” he says, “so if that’s the case, then I’ve got some time to improve my land, not just for me, for the next generation as well.”

https://news.nationalgeographic.com/2017/08/sponsor-content-conservation-for-the-future-of-the-family-farm0/

Ross started farming when he was 19 years old, and he realized fairly early that to stay in the game he had to think down the road to preserve his land and protect the health of his soil. His commitment is visible in his fields.

He knows that the land will endure and while the farm is in his hands he will continue to make conservation a strategic part of sustaining their farm. “It’s a learning process every year and every day,” he says.

Soil quality is the capacity of a soil to function (in a farm or ecosystem) and thereby sustain productivity, maintain environmental quality, and promote plant and animal health

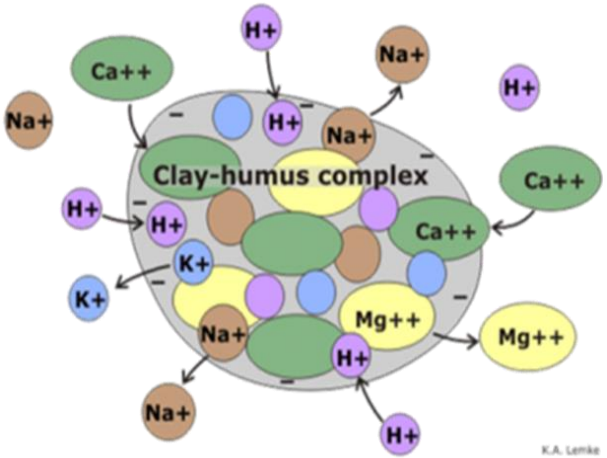


Aim is to manage for "balance" between all three soil components

“You cannot escape the responsibility of tomorrow by evading it today.”

Abraham Lincoln

Soil Stewardship



pH

affects everything in the soil

Nodulation

Root Growth

Overall Soil Biology

Nutrient Use Efficiency

Herbicide Efficacy and Carry Forward

Mid-Columbia Small Grains

Soil pH Workshop

Learn about:

- Significance of soil pH in the region
- Soil pH and nutrient stratification surveys
- Essential nutrients
- Impact of cropping systems
- Economics of liming
- Impacts of pH on crop diseases and pesticides
- Current research in mitigating pH issues

Wasco County Conservation District

MCP

SWCD Sherman County Est. 1950

USDA

Washington State University Extension

Oregon State University Extension Service Wasco County

ATI
Morrow County Grain Growers
North Central Ag
Simplot

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