History of Biodynamics (1)

Justus von Liebig (1803-75), agricultural chemist:
Organic Chemistry in its Application to Agriculture, 1840

Refuted traditional understanding that plants derived nutrition from humus and soil organisms
Emphasized soil mineral content and the role of nitrogen in plant nourishment
Worked to develop artificial fertilizers

After 3 generations of chemical use, farmers in Germany noticed falling fertility levels of soils and animals

History of Biodynamics (2)

In "*Agricultural Lectures*" (1924), Rudolf Steiner explained:

Chemical farming had decimated soil micro-biological life, Farmers had lost traditional understanding of what *life* is

Steiner urged farmers to restore humus levels through composts, stimulate soil organic life through preparations

Steiner urged an holistic view of agriculture to conceive of soil, farm, and cosmos as one integrated organism manifesting *life force*

History of Biodynamics (3)

Followers of Steiner (Maria Thun, et alia) developed lunar-astronomical calendar

BD laid groundwork for organic movement

BD fostered community supported agriculture (CSA), based on associative economics

BD promoted Aristotelian concept of *oekonomeia*

Biodynamic preparations (1)

2 field preparations:

1. **BD 500 (Horn manure), cow manure fermented in horn in soil. ¼ cup/acre, stirred 1 hr, sprayed. Promoted root activity, bacteria; regulates lime and nitrogen; releases trace elements; stimulates seed germination**
2. **BD 501 (Horn silica), ground quartz fermented in horn in soil, ½ tsp/acre, stirred 1 hr, sprayed. Enhances photosynthesis, crop color, aroma, flavor and keeping quality.**

Fungus control tea:

BD 508 (*equisitum arvense/Horsetail). Whole plant simmered in water, dried. 1 ½ oz/2 g water. Sprayed to prevent fungal disease*

Biodynamic preparations (2)

6 Compost preparations (inserted in compost pile):

1. **BD 502 (*Achillea millifolium*/Yarrow), flower fermented in stag bladder in soil. 1 tsp/10-15t. Attracts trace elements.**
2. **BD 503 (Matricaria chamomilla/German chamomile), flower fermented in intestine in soil. 1 tsp/10-15t. Stabilizes nitrogen.**
3. **BD 504 (Urtica dioica/Stinging Nettle), leaves fermented in clay tile in soil. 1 tsp/10-15t. "Enlivens" the soil.**
4. **BD 505 (Quercus robur/Oak bark), ground bark fermented in skull in soil. 1 tsp/10-15t. Combats plant disease.**
5. ***BD 506 (Taraxacum officinale/Dandelio), flower fermented in mesentery in soil. 1 tsp/10-15t. Regulates Si and K.***
6. ***BD 507 (Valeriana officinalis/Valerian), flower pressed and liquid fermented in bottle. 20-30 drops/1 g water, sprayed on compost. Stimulates phosphorus.***

On-farm Biodynamic research

"Biodynamic forage production" **(2004-7)**

Replicated field trials compared liming, BD preps and no treatment on a 1-acre plot, assessing the effects on pH, forage yield and quality

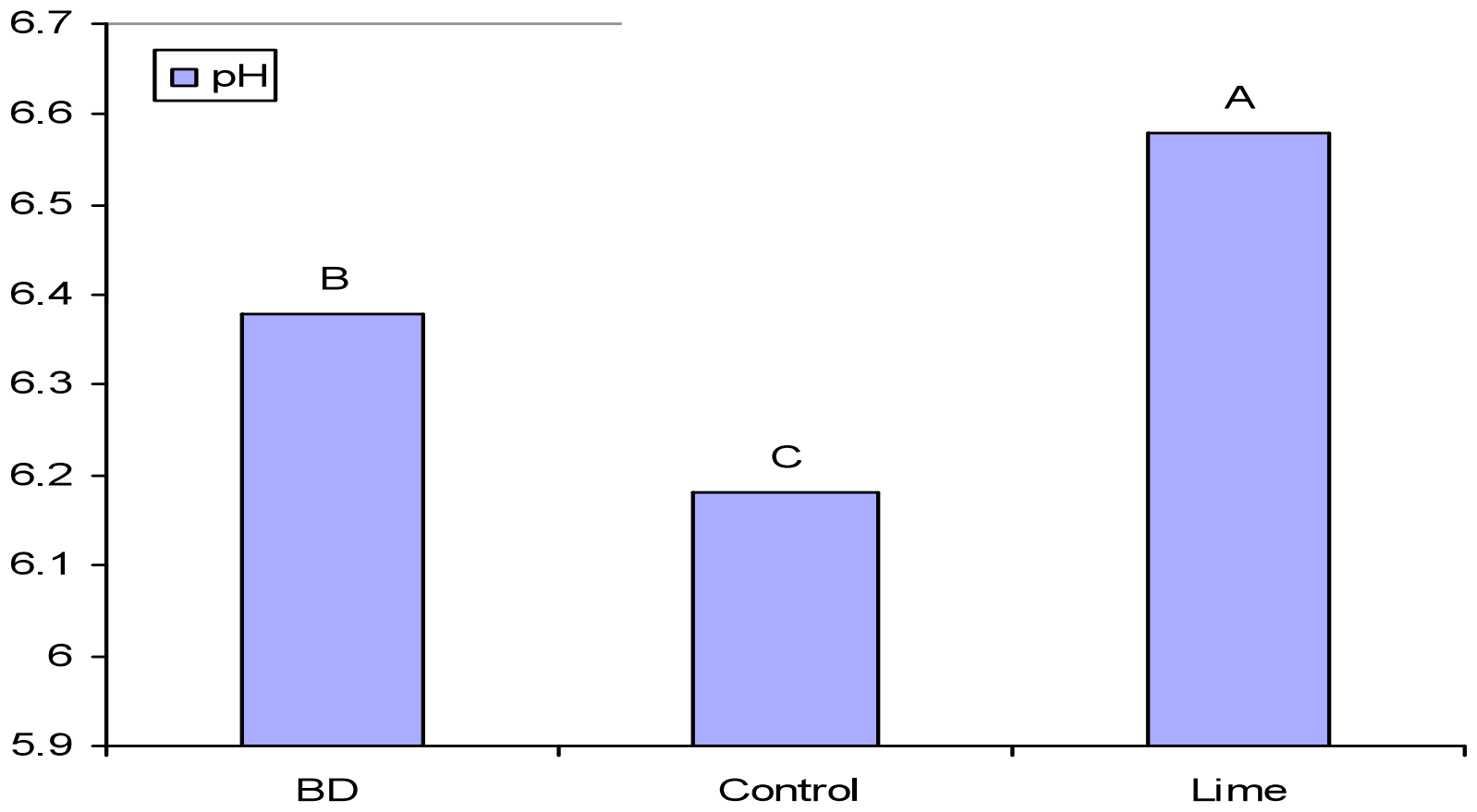
Research team included a WSU forage specialist, a WSU soil scientist, 2 WSU microbiologists

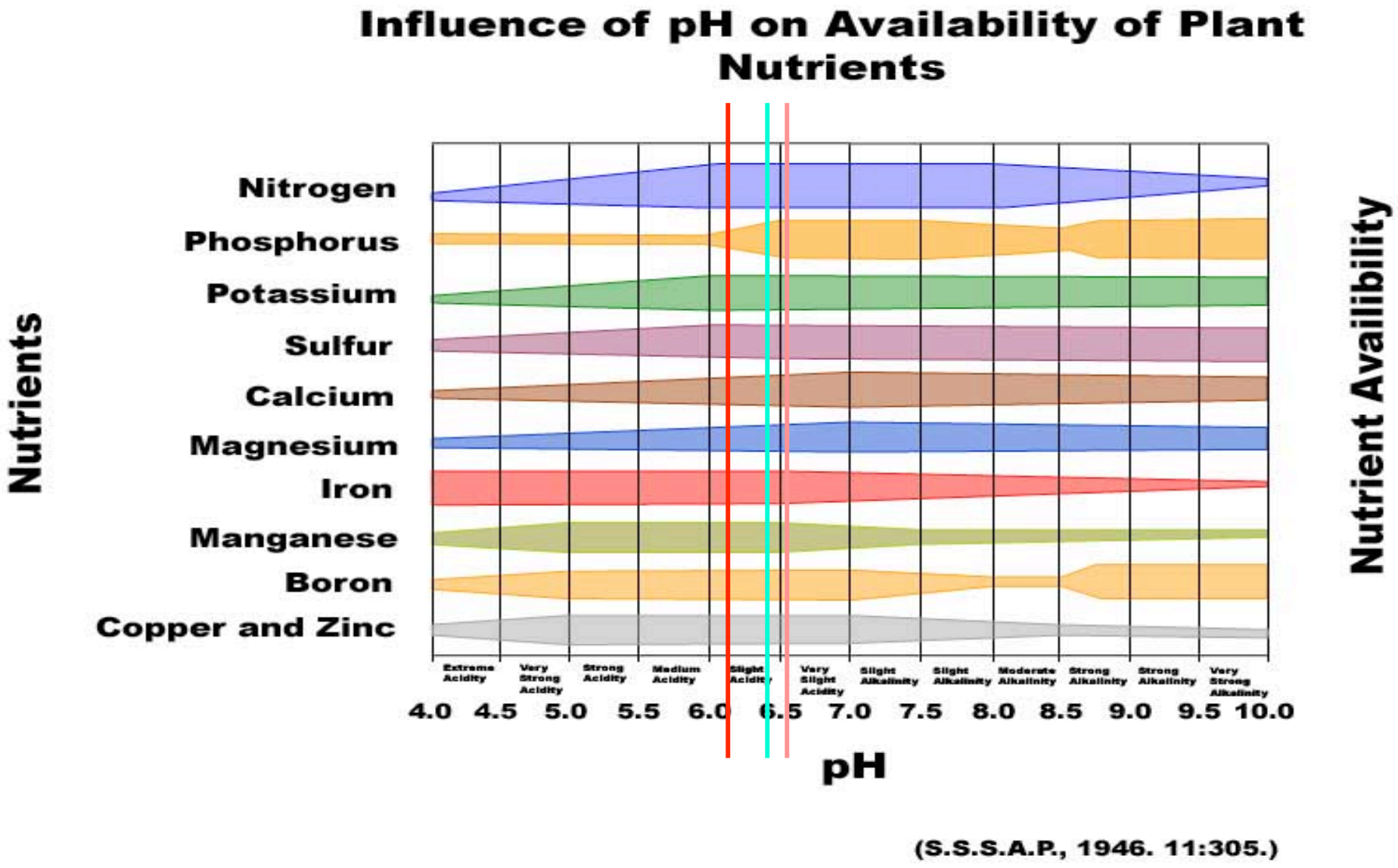
Lime applied @ 2000lbs/acre

BD preps applied @ 2 oz/acre

Repeated soil and forage sample evaluated in WSU labs

FIGURE 1. Soil pH as measured in 12 field plots over two years treated with Pfeiffer Field Spray, lime, and nothing.



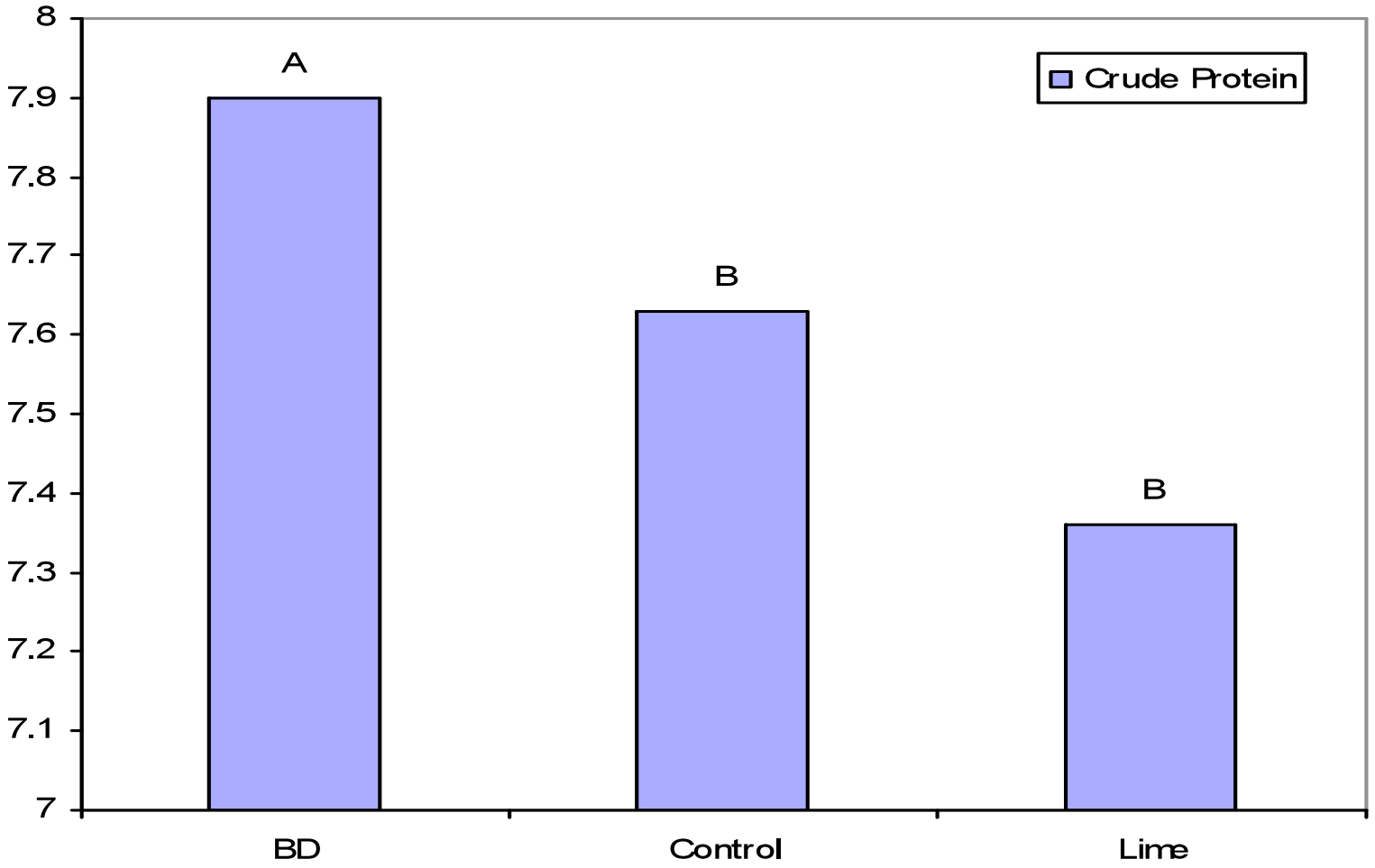


(S.S.S.A.P., 1946. 11:305.)

References:

"On-Farm Research: Biodynamic Forage Production on S&S Homestead Farm,"
Biodynamics (Summer, 2008)
SARE: http://www.sare.org/reporting/report_viewer.asp?pn=FW04-305

FIGURE 3. Crude protein content of forage as measured in May 2005 (sample b) in 12 field plots treated with Pfeiffer Field Spray, lime, and nothing.



Conclusions

- BD farming is based on an holistic view of nature
- BD farming embraces natural science but calls for a complementary science of the spirit
- BD farming embraces an cooperative model of economic viability
- BD farming practice is *practical*
- BD farms integrate plants and animals, biodiversity
- BD farms respond to the dynamic flow of biological life shaped by the diurnal and seasonal rhythms
- BD farmers aspire to be Aristotle's *oekonomoi*, stewards of the household, garden plots or farms entrusted to them for a short while or lifetime