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Healthy Soil — Healthy Plants — Healthy Livestock

Written by Phyllis Tichinin January 2006

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Can farming be profitable and sustainable? Farming as if it mattered Dr Arden Andersen

Highlights only version:

With input costs soaring and returns declining the impacts of the agricultural chemical treadmill are becoming more obvious and what was hailed as an upward lift in production 50 years ago, has become a downward spiral. A sustainable and profitable approach to agricultural production is required to address these problems. Arden Andersen delivers such an approach based on sound science and real experience. It is called Biological Agriculture.

Dr Andersen is at the cutting edge of American biological agriculture. He has a BSc. in agricultural science, a Ph.D. in biophysics and a medical degree. He has tens of thousands of acres under consultation in the USA ranging from cherries to dairies. Andersen has been teaching in Australia for 10 years and Lawrie Co. Biological Farms of South Australia report tremendous soil and productivity responses under the programme that focuses on re-mineralisation and feeding the microbes.

In Andersen's opinion, agriculture has "paradigm paralysis": meaning that our prejudices and what we've been brought up believing prevent a level-headed scientific perspective on the problems and possible solutions. He points out that yields and animal health before extensive pesticide use were at least equal to what they are today. Moreover, the 30 to 60 percent drop in the vitamin and mineral levels in agricultural products over the last 50 years has been linked with our general health crisis. Problems of yield decline, soil collapse, diseases, insect susceptibilities, and poor nutrition levels, are directly related to the low levels of bio-available nutrients in most soils.

He asserts that a change is needed to preserve the productive capacity of our soils. Our markets are demanding residue free, high nutrition food produced in an environmentally friendly manner. He confirms that biological agriculture can address all these dilemmas while also putting the fun and sense of accomplishment back into farming.

Biological farming is a blend of conventional and organic practices which

- Combines chemistry, physics, biology and microbiology sciences with sound farm management practices.
- Addresses and solves weed, disease and insect problems at their root causes, rather than merely masking the symptoms with chemicals.
- Maximises yield, quality, nutrition and profit potentials.

Andersen will be returning to New Zealand in August to teach three-day courses on soil quality management in Christchurch and Tauranga. He has a knack for making the sciences understandable and relevant. His theme of



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energy flow in agricultural systems coupled with an emphasis on soil biology is a fresh and valuable perspective.

Complete Version:

With input costs soaring and returns diminishing the impacts of the agricultural chemical treadmill are becoming more obvious and what was hailed as an upward lift in production 50 years ago, has become a downward spiral.

A sustainable and profitable approach to agricultural production is required to address these problems, based on sound science and real experience. Arden Andersen delivers such an approach. It is called Biological Agriculture and it focuses on restoring the microbiology and fertility of the soil.

Dr Arden Andersen is at the cutting edge of American biological agriculture. He has a BSc. in agricultural education, a Ph.D. in biophysics and a medical degree. His practical experiences range from dairy farmer, soil consultant and product developer, to author, physician and flight surgeon. Andersen is also a consultant on market development, product formulation and education. He is a world authority on improving soil fertility through biological farming.

Biological farming means:

- Combining the best of chemistry, physics, biology and microbiology with sound farm management practices.
- Addressing and solving weed, disease and insect problems at their root causes, rather than merely masking the symptoms with chemicals.
- Maximising yield, quality, nutrition and profit potentials.

Biological agriculture is a 'best of both worlds' mix of conventional and organic farming practices, involving careful monitoring of crops and soils to ensure production is of high quality. It is a way of thinking and doing that helps farmers to gradually step off the treadmill of agricultural chemicals and onto a path of managing soils, crops and animals in a profitable and sustainable way.

Andersen maintains the most important thing that has to change is the way we think. At present agriculture is seen as a simple quantity-focused industry in which fertiliser and pesticides IN equals fruit, grass, grain, milk OUT. This approach ignores basic science, the warning signs of soil collapse, and market demands for cleaner, healthier, tasty food. We need to shift the entire way we view the agricultural system. In his opinion, conventional agriculture has "paradigm paralysis": meaning that our belief systems of thoughts, prejudices, and what we've been brought up believing, prevent a level-headed scientific perspective on the problem and possible solutions.

Andersen is a staunch advocate of farmer education in ag-related chemistry, physics and biology. Every farmer needs to understand soil and plant systems so they can make their own tailored fertiliser and agronomy decisions. Understanding the basics allows each farmer to be better in control of his inputs and thus his soil fertility.



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Employing Andersen's biological agriculture system, conventional and alternative farmers have increases in soil fertility, production quantity and quality while reducing synthetic chemical use. Plants functioning under these conditions have higher mineral, vitamin and Brix levels resulting in healthier livestock and healthier people.

Citing scholarly research and government reports, he deflates the present paradigm by pointing out that yields and animal health before extensive pesticide usage were at least equal to what they are today. Moreover, the 30 to 60% drop in the vitamin and complex mineral levels in agricultural products over the last 50 years has been linked with a major health decline.

Problems of crop diseases, yield, insect susceptibilities, taste, and nutrition levels, are directly, indirectly and absolutely correlated to the bio-availability of nutrients in the soil.

Soil nutrition, or fertility, can only be sustainably achieved through promoting active, diverse soil microbiology and considerate re-mineralisation of soils. Soil microbes are crucial to soil fertility because they boost humus formation. They promote optimum plant health and resistance to disease and insect attack. The paradigm needs to shift – bacteria and fungi are not dirty words.

Arden Andersen asserts that a change is needed not only to preserve the productive capacity of soils but also to compete in a world market demanding chemical residue free, high nutrition food produced in an environmentally friendly manner. He confirms that biological agriculture can address all these dilemmas while also putting the fun and sense of accomplishment back into farming.

Andersen will be returning to New Zealand in August to teach three-day courses on soil quality management in Christchurch and Tauranga. He has a knack for making the sciences understandable and relevant. His theme of energy flow in agricultural systems coupled with an emphasis on soil biology is a fresh and valuable perspective. The course is based on his book "Science in Agriculture".

His approach provides a sophisticated professional farming system designed to enhance biological activity in the soil, provide energy to the crop and build internal resistance to pests and diseases.

As a health care professional, Dr Andersen is deeply concerned about the dramatic rise in diet-linked diseases such as cancer, heart disease and diabetes. US health statistics indicate that life expectancy is falling, that one of every two Americans will get cancer and that childhood cancer is the fastest growing form of the disease.

Numerous studies make clear the connection between low vitamin and mineral levels in food and susceptibility to disease. Andersen believes it is crucial to restore high quality nutrition to our agricultural produce to protect both ourselves and our environment.

Dr Andersen maintains that the conventional assertion that mass production of food and fibre cannot be accomplished without the extensive use of synthetic chemicals is a lie. The lie is losing momentum both because farm leaders are proving otherwise and because consumers are demanding otherwise. Andersen kicks open the door to another way to farm focused on enhancing soil fertility, strengthening plant health and maximising nutritional quality and profit.



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For Arden Andersen it's a straightforward motto: "We need to be farming with the consumer and future generations in mind. We need to be farming as if it mattered."

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