products is improved. biological cycles are more efficient, communities of flora and fauna become more stable, natural production potential is used more effectively and raw materials and energy are no longer wasted but used sensibly."

The "threats" Koepf and his cohorts see in present farming methods are primarily chemicals and production trends which will stress the soil beyond its limits. Koepf claims that pushing the soil beyond its natural production limits is what makes it necessary for man to support his agriculture with chemicals and other "crutches."

Koepf's presentation last week was entitled "Building Fertile Soils." One of the methods he suggests is that dairy and livestock farmers store and compost their animal manures if they want to get the most out of it and that they begin to save the urine portions as well, rather than allowing them to drain away. "Proper manure handling on the farm implies storage," the professor lectured.

The primary concern of a biodynamic approach to agriculture, Keopf said, is over the inputs which are required to maintain fertility of the soil and nutritional quality in the goods which are harvested from it. Along with it are considerations for the environment, energy, and the national economy. "Try to build a selfsustaining farm with local resources," he advocated.

The biodynamic approach to agriculture considers the soil not just from an agricultural viewpoint, but from its mineral content as well. The idea, says Koepf, is the look at the complete picture and then work with the soil in such a way so that natural balances are maintained.

"The fatal error," Koepf went on, is believing that the problems of production have been solved." He says that man too often has the illusion that he has unlimited power over Nature. That is just not true, warns the foreign professor.

Many farmers today are forced to grow "good" crops because of the economic pressures they're faced with, Koepf explained, and their top production is frequently harvested at the soil's expense.

Asked about weed control, Koepf quipped: "Weed control means proper plant

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husbandry, which is be happy and healthy. cultivation." The professor However, if you go against was also questioned on sludge utilization, to which he replied: "It should not be used beyond what's produced on the farm."

One Pennsylvania farmer who tries to live by the concepts embraced by Koepf and his cohorts is Paul Keene, owner and operator of Walnut Acres in Snyder County. The subject of the last three articles of this series on organic farming, Keene's philosophy is to know and control each of his fields as best he can with his own resources. It doesn't work completely, however, since he doesn't have enough manure coming from his livestock to fertilize all of his cropland. He beats that problem by utilizing all of the "wastes" from his cannery and occasionally buying manure from other farmers in the area. A third alternative - and a regular part of his program - involves plowing cover crops under every third or fifth year.

A former manager of one of the farms at the Kimberton Farm School when he lived there as a student, Keene says of his farm: "We're getting the soil back into a natural balance." Among other things, he believes that a proper balance is Nature's way of enabling plants to resist insect attacks. "We don't have to spend much time controlling insects here," he told Lancaster Farming in an interview this Summer.

Paraphrasing Goethe, the German philosopher and writer, Keene says that if a person lives by Nature's laws and respect them, he'll

However, if you go against them, then whatever happens to you is your own fault. "It's on that basis that we've been operating," Keene explained.

Keene believes that insects, for example, have a proper place in Nature's scheme of things. He sees them as a means by which weak plants are destroyed and only the strong ones survive. If a plant is infested by bugs, Keene believes it's because of a weakness with that plant. A good plant husbandryman should then ask himself "What have I done wrong to have a weak plant?" According to supporters of this theory, the bugs are the plant diseases are preceded by weaknesses in the soil or plant itself.

Keene related how he once had several rows of squash painted, and one - just one row - was attacked by insects. His explanation is that that particular row was weak and Nature did not want it to produce seeds. Again, it's simply a matter of survival for the fittest.

The organic farmer's theory is that a decline in the health of the soil is also a decline in the amount of organic matter within it. Keene acknowledges that some soils are deficient or better than others, and admits his own farm isn't up to the standard he'd like to see someday.

"We've been taught to strive for quantity, but there are things which are more important than that such as quality or balance," Keene remarked.

More on this subject will appear in upcoming issues of Lancaster Farming.

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