Pimentel speaks on food, resources

By Jann Nyffeler

"Natural Resources Versus Food Production" was the topic of a lecture given by David Pimentel of Cornell University Tuesday evening in the East Union.

Pimentel, a professor of insect ecology and agricultural sciences at Cornell, is one of three visiting scholars in a series entitled "Natural Resources Management: Challenges and Promises for the Future." The series is sponsored by UNL's Department of Forestry, Fisheries and Wildlife and funded by a grant from the Layman Fund.

In a slide presentation paralleling natural resources – energy, land, water and humans – and world food production, Pimentel stressed various forms of energy use in our current food system. He added that humans have both a positive and negative impact on the relationship, because we consume other resources but also contribute to natural resource development.

There is not necessarily a shortage of the world's natural resources, he said, but rather an overabundance of people.

Pimentel traced the history of U.S. population and energy consumption. Currently, the United States makes up 6 percent of the world's population but burns 33 percent of the available fossil energy. Many less-developed countries rely on biomass energy – usually in the form of wood – for their primary source of fuel, he said. However, Pimentel indicated that world forests are shrinking. Trees are being cut for fuel; forests are being eliminated for use as cropland.

He went on to discuss the availability of arable land. In 1650, there were four acres of usable farmland per person. By 1975, that figure had reportedly decreased to nine-tenths of an acre per person, he said, based on an estimated world population of four billion.

Pimentel projects that by the year 2135, the available world tillable land will be one-quarter of an acre per person.

Most farmable land in the world is already in production, Pimentel said, "even though some of it shouldn't be."

"The less land you have available, the more intensely you have to manage it," he said.

Water erosion also can present a problem in food production, he said, since soil formation is such a slow process. Under agricultural conditions, it takes 200 to 300 years for 1 inch of topsoil to form.

Pimentel said methods to prevent erosion, such as contour planting and terracing, can be effective, but have not seen widespread implementation.

On a world basis, almost 50 percent of the potential world food output is lost to pests like insects and rodents.

He reported that 17 percent of all energy used in the United States is for food production. If all current petroleum reserves were used for food production, they would last about 13 more years, Pimentel predicts.

Pimentel said he "anticipates severe crises" in future food production. "It will get worse before it gets better," he said.