

**Inventing the Biofuel Future:
We Can Have Biomass for Fuel
and Eat it Too**

Bruce E. Dale, Professor
Department of Chemical Engineering and Materials
Science
DOE Great Lakes Bioenergy Research Center
Michigan State University

Surrounded by a world filled with the fruits of innovation and invention, pessimists generally forget or ignore the role these forces are likely to play in the developing biofuel industry. Skeptics are apparently unable to imagine how we can use our land resources much more efficiently to produce biofuels, while still feeding (actually overfeeding) everyone.

While specific technical breakthroughs are difficult to predict, the general areas in which inventions are likely to occur are much easier to forecast. Likewise, the likely areas of innovation are foreseeable. We examine the technical potential for innovation in land efficient animal feed production to integrate with biofuel production. The results of this analysis are frankly startling. Using a fraction of existing US crop land it is technically possible to produce all the food and animal feed that land currently produces (thereby avoiding the indirect land use change effect) while generating enough additional biomass to provide approximately half of US gasoline consumption.

This land efficient animal feeds approach reduces US greenhouse gas production by about 700 teragrams/yr, or 10% of total US emissions, while also providing about 5% of domestic electricity. The easiest, and certainly the most enjoyable, way to predict the future may be to invent it.

SEMINAR
LIVERMORE CENTER
ROOM 101
3:00 – 4:00 PM