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Natural Resources Research Update

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Title: Crop rotations that include legumes and reduced tillage improve the energy efficiency of crop production systems.

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Location: Agroecosystem Management Research Unit, Lincoln, NE

Text: Modern crop production requires large inputs of energy and these inputs represent a substantial cost. Management practices such as crop rotation and choice of tillage practice influence the energy balance for a production system. Legumes support bacteria that are capable of fixing nitrogen (N). This fixed N not only meets the crop needs but a portion is also available for subsequent crops thereby reducing the need for inorganic N fertilizer. Primary tillage practices vary in energy input requirements with no-tillage requiring 15% less energy than moldboard plow tillage (Rathke, 2007). Producers can utilize crop rotations that include a legume and reduced tillage intensity to improve the energy efficiency of their production systems.

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Rathke, G.-W., B.J. Wienhold, W.W. Wilhelm, and W. Diepenbrock. 2007. Tillage and rotation effect on corn-soybean energy balances in eastern Nebraska. *Soil and Tillage Research* 97:60-70.

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