

# **ORGANIC DAIRY PRODUCTION AT THE UNIVERSITY OF MINNESOTA**

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The recent decision to transition a portion of the dairy herd at the West Central Research and Outreach Center (WCROC) to the organic production system provides an opportunity to set new directions in research, teaching and outreach.

The WCROC herd, at the University of Minnesota and located at MorrisM-Morris, will be the first university organic dairy program in the Midwest. Resources and opportunities to be optimized in re-directing the program include: 1) growing demand for organic/local food products fueling a need to information to manage systems for production of milk that is identified as local or organic; 2) over the past 13 years the WCROC dairy has focused on low input management, easing the adjustment to organic; 3) there is limited research on organic dairy production; 4) organic/sustainable community members are strong advocates for research and outreach; and 5) sustainable systems resonate with University of Minnesota and College of Food, Agriculture and Natural Resource Sciences priorities.

Research topics may include: 1) multiple benefits benchmarking of organic and conventional systems to include biological and economic efficiency, product quality, carbon footprint, emissions, quality of life, etc.; 2) non-synthetic treatments for disease in organic herds; 3) nutrient flows including field, feed, and animal; 4) development of best management practices for organic dairy; and 5) continued crossbreeding research. Extension/outreach topics to be addressed include: 1) grazing management publications and field days; 2) best management practice publications and field days; and 3) publications on animal health in organic systems. Dairy has been one of the fastest growing segments of the organic foods industry.

Resources that will be transitioned to the organic project include 70 cows and their offspring, 150 acres of tillable land, and > 200 acres of pasture. A 90 cow conventional herd and supporting infrastructure will be maintained. The transitioning of the herd commences in September 2008.

Initial research will benchmark mammary health and fertility changes in the transitioning dairy herd of 70 cows with the contemporary convention herd of 90 cows. Mammary health will be determined by microbiological evaluation of individual cow milk samples at 3 month intervals from before initiation of organic management to the end of the transition period. Focus will be on staphylococcus and streptococcus organisms and incidence of clinical mastitis. Breeding is conducted in two seasonal windows December to March and June to August. Ovarian activity will be assessed at 42, 49, and 56 days postpartum by level of circulating progesterone. Days to first service, pregnancy rates, and ultrasound evaluation of ovaries and uterus, body weight and condition changes will be compared. Both groups will be bred by artificial insemination, but the conventionally managed herd will utilize synthetics as heat detection aids and synchronizers. Complete herd management, nutrition and economic records will be kept.