

**PROGRESS REPORT 2013**  
**North Central Region**  
**Sustainable Agriculture Research and Education (SARE) Program**

Project Title: Comparative Analysis of Unpasteurized Organic Milk vs. Organic Fish Emulsion and Kelp as an Organic Fertilizer for Livestock Forages

Project Number: FNC12-852

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1. Describe in detail your work activities and how you used your grant funds this year. (Use another sheet if necessary.)

We roto-tilled and drilled seed into 16 half-acre size test plots as follows:

Plot #	Forage
1	Certified Organic 4241 Creeping Alfalfa is pre-inoculated with OMRI approved INTX Pre-Vail inoculation fertilized with unpasteurized organic milk
2	Certified Organic Red Star Red Clover fertilized with unpasteurized organic milk
3	Certified Organic Kentaur 4N Perennial Ryegrass fertilized with unpasteurized organic milk
4	Certified Organic Climax Timothy fertilized with unpasteurized organic milk
5	Certified Organic Hairy Vetch fertilized with unpasteurized organic milk
6	Certified Organic Pea-Outlage Mix fertilized with unpasteurized organic milk
7	Certified Organic Kora Tall Fescue fertilized with unpasteurized organic milk
8	Organic 4241 Creeping Alfalfa is pre-inoculated with OMRI approved INTX Pre-Vail inoculation and Certified Organic Red Star Red Clover MIXTURE fertilized with unpasteurized organic milk
9	Certified Organic 4241 Creeping Alfalfa is pre-inoculated with OMRI approved INTX Pre-Vail inoculation fertilized with organic fish emulsion plus kelp
10	Certified Organic Red Star Red Clover fertilized with organic fish emulsion plus kelp
11	Certified Organic Kentaur 4N Perennial Ryegrass fertilized with organic fish emulsion plus kelp
12	Certified Organic Climax Timothy fertilized with organic fish emulsion plus kelp
13	Certified Organic Hairy Vetch fertilized with organic fish emulsion plus kelp

14	Certified Organic Pea-Oatlage Mix fertilized with organic fish emulsion plus kelp
15	Certified Organic Kora Tall Fescue fertilized with organic fish emulsion plus kelp
16	Organic 4241 Creeping Alfalfa is pre-inoculated with OMRI approved INTX Pre-Vail inoculation and Certified Organic Red Star Red Clover MIXTURE fertilized with organic fish emulsion plus kelp

We collected samples for analysis (soil fertility, tissue, and feed) by Perry Agricultural Labs in Bowling Green, MO to compare unpasteurized organic milk vs. organic fish emulsion and kelp as an organic fertilizer for livestock forages.

2. List the results of your project and what you have learned so far.

After an extended drought in 2012, which caused us to delay planting until 2013, we had a cool and wet summer in 2013, which provided good conditions for the growth of cool season grasses. Overall, we saw little statistically significant difference between the unpasteurized organic milk vs. organic fish emulsion and kelp as a fertilizer for livestock forage. The only statistically significant result was a higher level of calcium in plots treated with unpasteurized organic milk. This makes sense given the high level of calcium in milk. The cooler and wetter conditions of the summer of 2013 lead to far fewer crickets and more earthworms in the pastures and test plots than the drought plagued summer of 2012. We look forward to collecting more data in 2014 to see if we can identify any trends and look for reproducibility of test results.

3. Describe your work plan for next year.

We plan to collect more data and look for statistically significant trends in our comparison between Unpasteurized Organic Milk vs. Organic Fish Emulsion and Kelp as an Organic Fertilizer for Livestock Forages. We plan to continue the test plots for a number of years to generate enough data to support long term conclusions and see how reproducible results are under a variety of growing conditions (our prior results in 2011 and 2012 suggested some benefits of unpasteurized organic milk during drought conditions but these differences were not seen under ideal cool season grass growing conditions in 2013).

4. How did you share information from your project with others? (Include the number of people who attended field days or demonstrations.) What plans do you have for sharing information next year?

We spoke on several occasions with Gary Noel and Keith Jackson (both at USDA/NRCS Bowling Green, MO office) about this project. We eventually plan to post results on our website ([www.OrganianFarms.com](http://www.OrganianFarms.com)) and to submit articles for publication, as well as, to present results at future Organian Farm Field Days.

**Send completed report by e-mail (e-mail is preferred) or mail to:**

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**If you have questions or need to make major changes to your budget, please call or e-mail Joan Benjamin at: 573-681-5545 or [benjaminj@lincolnu.edu](mailto:benjaminj@lincolnu.edu).**