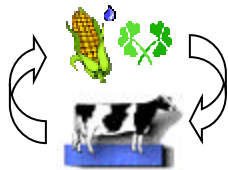
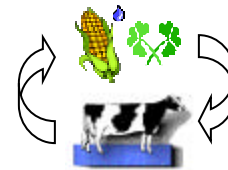

Newsletter for the BIFS Dairy Manure & Forage Production Project



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The Biologically Integrated Farming Systems (BIFS) Dairy Manure and Forage Production project is now underway. The goal of the project is to research and demonstrate improved recycling of manure nutrients to forage crops. Better management of dairy manure for forage production will hopefully reduce environmental pollution problems and chemical fertilizer costs. 11 participating dairies throughout the San Joaquin Valley will be using and testing improved practices that have previously been tried on some of these dairies or shown promise in UC research.

Members of the project management team have met with most of the producer participants to determine the nature of the project on each dairy.

Fields and potential treatments are being chosen at each dairy.

Sampling and monitoring began this summer at one participating dairy in Stanislaus County with a field comparison of corn using manure water only or anhydrous ammonia only as sources of N. Soil sampling, monitoring, and overseeding of berseem clover and annual ryegrass on alfalfa started this fall at another northern San Joaquin valley dairy.

What's next? Specific practices for improved manure management have yet to be decided for a number of the participants. Fields will be selected for demonstrations on corn crops this coming spring, and the treatments finalized. Data collection will accompany the establishment of demonstration sites.

Meet the Project Coordinator – Alison Eagle

On September 1, 1999, I began working as project coordinator of the BIFS dairy project. I come to this project from UC Davis, where I was working on a MS degree in International Agricultural Development with a specialization in soil science.

I grew up on a mixed farm in northern Alberta, Canada, where I had experience with cattle, hogs, and growing forage crops. Before coming to California, I was at the University of Alberta in Edmonton, where I received a BSc in Agriculture.

My office is at the Kearney Agricultural Center (UC) near

Parlier, CA, and from there I will be managing the demonstrations for



the BIFS dairy project that stretch from Lodi, San Joaquin County to

Porterville, Tulare County. If anyone needs to contact me regarding aspects of this project, please feel free to do so.

Contact information:

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I am looking forward to meeting and working with all of you.
Alison

Ask The Experts – Winter Forages

Q—How much nitrogen (N) can I expect my winter crop to take up?

A—Book values for winter cereal crop nitrogen are usually in the neighborhood of 150 pounds of nitrogen per acre. This is probably about right for an average yielding oat hay crop grown with an average amount of commercial fertilizer. But winter cereals grown with

an abundance of lagoon water nitrogen can—and do—take up much more than the minimum amount. In trials conducted in Stanislaus County last year under well-fertilized conditions, maximum nitrogen uptakes for boot stage forage ranged from 220 to 300 lbs of N per acre depending on variety. In a Kings County trial harvested at soft dough stage, uptake ranged from 215

to 240 lbs of N per acre. The exact amount of nitrogen uptake is variable but on most dairies is probably higher than book values. Since most dairy operators have some idea of the protein content of their forages and their tonnage, the nitrogen uptake can be easily estimated. Multiply tons per acre (@70% moisture) by percent protein. Then multiply that number by 0.96. The result is the pounds of nitrogen per acre. Example: 25 tons X 12.5% protein X 0.96 = 300 lb N/acre uptake by crop. *Marsha Campbell Matthews, Farm Advisor, Field and Forage Crops, UC Cooperative Extension, Stanislaus County*

Definitions:

BOOT - The last leaf (flag leaf) before the seed-head is fully expanded, grain head with awns not visible, but can be felt in the flag leaf sheath.

DOUGH - Kernel is filled with starch and well-formed. Rubbery dough-like substance present in kernel.

Q—Is there a difference in the ability of different types of winter forages to take up N?

A—In the 1998 Stanislaus County trial, there was not as much nitrogen in the soil as in 1999 because of heavy rainfall and lack of lagoon water application. There were no differences in uptake between T2700 triticale and Longhorn wheat (Swan oat was in the trial but died due to waterlogging). In 1999, however, lagoon water nitrogen was applied to the trial and boot stage

T2700 took up significantly more nitrogen than Swan oat or Longhorn wheat. Under these conditions the nitrate concentration was also significantly higher.

Maximum Nitrogen Uptake—Stanislaus County			
	Yield tons/acre @ 70% moisture	% N	N Uptake (lbs N/acre)
1999			
T2700 Triticale	19.8 a	2.58 a	302 a
Swan Oat	20.7 a	1.92 b	241 b
Longhorn Wheat	17.1 b	2.15 b	221 b
Ensiler Oat	17.6	2.50	263
1998			
T2700 Triticale	18.1	1.9	202
Longhorn Wheat	16.1	1.9	187

Marsha Campbell Matthews, Farm Advisor, Field and Forage Crops, UC Cooperative Extension, Stanislaus County

If you have questions for Cooperative Extension Specialists or Farm Advisors that you would like to see in the next newsletter, please contact Alison Eagle (see contact info on previous page)

Note of Thanks

We would like to thank the **California Crop Improvement Association** (Davis, CA) for donating the berseem clover seed that will be used this winter for overseeding at two of the BIFS sites.

Calendar of Events

November 10, 1999, 11:00am-12:30pm. County Agricultural Building, Visalia—Lunch meeting with dairy participants. Discussion topic: Nutrient requirements of silage corn and winter forage. This is the first lunch meeting for the dairy participants in the southern end of the valley. This is an informal opportunity to meet other dairy producers in the BIFS project and talk about relevant issues. Stuart Pettygrove will lead the discussion. To facilitate lunch arrangements, RSVP to Alison Eagle by **Nov. 8**. A similar meeting will be organized for the northern San Joaquin Valley dairy participants.

Directions: From Hwy 99, go east on Hwy 198. Pass the Demaree intersection, turn left (N) at County Center/West Main, follow West Main as it curves.

Turn on 1st street to right (Woodland). 1st driveway on right is Ag. Building. Phone number of County Agricultural Office is (559) 733-6363.

December 8-9, 1999. Radisson Hotel, Fresno—California Alfalfa Symposium

Sponsored by the University of California Alfalfa Workgroup. Includes presentations on manure application to alfalfa, forage quality, pest management, and other topics potentially of interest to the dairy industry. For more information or to register contact Nikki Picano, UC Davis (530) 752-0700. Advance registration deadline (discounted registration fee) is Nov. 22, 1999

Biologically Integrated Farming Systems (BIFS) projects such as the BIFS dairy and forage project are funded by the University of California Sustainable Agriculture Research and Education Program (SAREP).