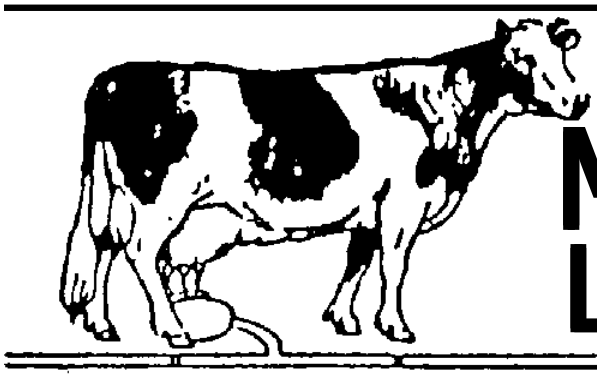
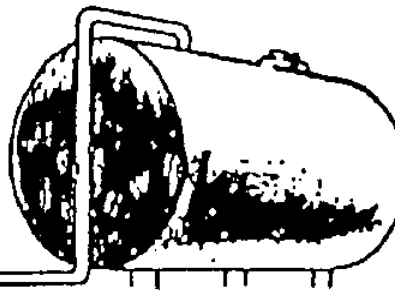
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION TULARE COUNTY



The Milk Lines

July 2000



Compost Option

Making compost with dairy manure has been done for centuries. It is has received renewed interest for organic farming that offers another way to recycle manure nutrients off the dairy in a convenient and beneficial manner. An option to this process is including dairy lagoon water that could allow taking away additional nutrients from adjacent dairy crop acreage. This can offer help where animal unit/crop acre needs adjustment to meet Regional Water Quality Control (RWQC) guidelines. On the other hand, it is not a way to add more cows to cause an imbalance.

Mentioned RWQC guidelines use crop utilization allowances of 3,000 lbs. total salts per double-cropped acre and 2,000 lbs. for single cropping annually. A local commercial company is producing 1,000 tons of compost per 1.5 acres of space and incorporates 1 acre foot of lagoon water into this material during a 90-day processing. This 1 acre foot of lagoon water is equivalent to 326,000 gallons of the liquid. If the concentration of total salts in pond water and manure used in the compost is greater than salts taken up by an equal number of crop acres, then this option could be useful. This is assuming the materials leave the dairy. Regardless of destination, this product would have a high nutrient content that must be used agronomically correct.

Analyses of corral manure and lagoon water are needed for a good estimate along with known volumes of both. Using the figures mentioned and some hypothetical values a comparison of this option can be made to nutrient recycling in crops. An example 5 acres of double-crop silage would take off 3,000 lbs. salts/ acre x 5 acres for 15,000 lbs.of total salts. The same 5 acres can support two composting cycles of 90 days each during the dry weather from May through November. Each 90 days of composting could produce 1,000 tons of compost/1.5 acres or 3,333 tons on 5 acres.

An example concentration of dissolved salts in lagoon water can be 2,000 ppm (parts per million). Using the common conversion factor of .2268 the 2,000 ppm would equal 453.6 lbs. of salts/acre inch of lagoon water. This times 12 is 5,443.2 lbs. of salts/acre foot. If an acre foot of lagoon water is used for 1,000 tons of compost, then 3.33 acre feet would be used in this example. Multiplying the 5,443.2 lbs. of salts/acre foot x 3.33 acre feet used gives 18,126 lbs. of salts from lagoon water. The 3.33 tons of composted manure (30% moisture) x an average 10% salts adds another 666 lbs. salts.

The total salts removed from compost and incorporated lagoon water is 18,792 lbs. for each 90-day composting cycle and 37,584 lbs could be removed in two cycles. This outweighs the 15,000 lbs. removed by double-crop silage off the 5 acres of land used. Taking the 5 acres out of crop production must be considered on an individual farm basis. Some dairies have several acres as junk collection sites and/

or other non-productive areas. Possibly both crop and compost salt "credits" could be realized. Ideally the area for composting should be adjacent to the lagoon to reduce pumping and transportation costs. Also, sloping to drain compost leachate back to the lagoon is advisable.

One concern with composting is the volatilization of nitrogen. Research has shown that composting with a controlled nitrogen to carbon ratio can reduce this loss. Obviously costs involved with composting (either contracted or self-made) and proper sampling must be included in the decision. This option may not be for everyone but could be valuable for some. If there are questions or other concerns with this manure management option, call the farm advisor office at 733-6488.

Gene Mapping

Researchers at USDA, UC Davis and elsewhere are mapping cow genome (all DNA in an animal's genes). Marking off regions of DNA (deoxyribonucleic acid) can identify genetic traits that enable mastitis resistance, as well as enriching dairy products through milk proteins. Current studies involve "markers" in DNA to predict the degree to which a newborn calf will express traits inherited from prized sire and dam. The "markers" are short stretches of nucleotides that make up the bovine DNA. The DNA is composed of two long chains of nucleotides, bound together in "base pairs," and coiled inside 29 chromosomes.

Putting this mapping in perspective, a gene would be like a city inside a country (the chromosome), and all are on planet earth (an individual cell in the animal). The nucleotide base pairs would be akin to an individual inside the city. Scientists have already developed "markers" associated with genes for dairy phenotype. Currently it may take 5 years before some calf traits can be evaluated. With "marker" assisted selection evaluations could begin with embryo cells or blood from newborn calves.

Location of DNA regions having desirable and undesirable traits will also assist herd health.

ESSC

Attached is the fall schedule for the Environmental Stewardship Short Course. The dates and places for all meetings are listed to afford the possibility of make-up classes at your convenience. Attendance at all three sessions is needed for the certificate. This must be done by the same person to be valid. The certificate is gaining importance as the environmental issues situation evolves. In addition to the classes listed there will be another allied industry class at the Merced UCCE office, September 7th, from 12:30 to 5 p.m. for ARPAS members.

Locally classes for dairy producers will be October 11, 18, and 25 at Edison AgTAC in Tulare, across the street from the Farm Equipment Show Grounds on South Laspina Ave., and all sessions will be from 10:00 to noon. Classes are free of charge for producers.

There will be a dairy pre-evaluation session for producers from 2 to 4 p.m. on October 25th at Edison AgTAC. For any scheduling questions, call the dairy advisor at 733-6488.

There will be an allied industry session from 12:30 to 5:00 p.m. on October 18th at Edison AgTAC. The allied industry sessions require pre-registration a week in advance of the meeting date. Registration forms are available at the Cooperative Extension office.

Tom Shultz
Dairy Advisor
559-733-6488

Environmental Stewardship Short Courses 1 (ESSC1) Schedule – Fall 2000

September 2000	Times	Contact	Location of Class
12 (class #1)	10:00 am - 12:00 pm	Barb Reed	UCCE Office, 821 East South Street, Orland
19 (class #2)	10:00 am - 12:00 pm	Barb Reed	UCCE Office, 821 East South Street, Orland
26 (class #3)	10:00 am - 12:00 pm	Barb Reed	UCCE Office, 821 East South Street, Orland

October 2000	Times	Contact	Location of Class
11 (class #1)	10:00 am - 12:00 pm	Tom Shultz	Edison AgTAC, Tulare
18 (class #2)	10:00 am - 12:00 pm	Tom Shultz	Edison AgTAC, Tulare
24 (class #1)	10:00 am - 12:00 pm	Marit Arana	UCCE 420 South Wilson Way, Stockton
24 (class #1)	2:00 pm - 4:00 pm	Jonathan Merriam	Stanislaus Ag Center, Service & Crows Landing Roads, Modesto
25 (class #3)	10:00 am - 12:00 pm	Tom Shultz	Edison AgTAC, Tulare
31 (class #2)	10:00 am - 12:00 pm	Marit Arana	UCCE 420 South Wilson Way, Stockton
31 (class #2)	2:00 pm - 4:00 pm	Jonathan Merriam	Stanislaus Ag Center, Service & Crows Landing Roads, Modesto

November 2000	Times	Contact	Location of Class
1 (class #1)	10:00 am - 12:00 pm	Jerry Higginbotham	Chowchilla Fairgrounds, Chuckwagon Room, Chowchilla
2 (class #1)	10:00 am - 12:00 pm	Nyles Peterson	Centro Basco, 13432 Central Ave, Chino
7 (class #3)	10:00 am - 12:00 pm	Marit Arana	UCCE, 420 South Wilson Way, Stockton
7 (class #3)	2:00 pm - 4:00 pm	Jonathan Merriam	Stanislaus Ag Center, Service & Crows Landing Roads, Modesto
8 (class #2)	10:00 am - 12:00 pm	Jerry Higginbotham	Chowchilla Fairgrounds, Chuckwagon Room, Chowchilla
9 (class #2)	10:00 am - 12:00 pm	Nyles Peterson	Centro Basco, 13432 Central Ave, Chino
15 (class #3)	10:00 am - 12:00 pm	Jerry Higginbotham	Chowchilla Fairgrounds, Chuckwagon Room, Chowchilla
16 (class #3)	10:00 am - 12:00 pm	Nyles Peterson	Centro Basco, 13432 Central Ave, Chino
28 (class #1)	3:00 pm - 5:00 pm	Marit Arana	Sacramento County Farm Bureau, 8970 Elk Grove Blvd, Elk Grove

December 2000	Times	Contact	Location of Class
5 (class #2)	3:00 pm - 5:00 pm	Marit Arana	Sacramento County Farm Bureau, 8970 Elk Grove Blvd, Elk Grove
12 (class #3)	3:00 pm - 5:00 pm	Marit Arana	Sacramento County Farm Bureau, 8970 Elk Grove Blvd, Elk Grove

All ESSC1 producer meetings scheduled are for **dairy producers** and **fieldmen** unless stated otherwise and are no charge to them.

Questions regarding lost or incorrect ESSC1, certificates for dairy producers should be directed, in writing (*mail*) to Deanne Meyer only. Deanne's address is:
Dr. Deanne Meyer - UC Davis, Department of Animal Science, One Shields Ave, Davis, CA 95616-8521

[o] Pre-evaluation (***dairy producers only***) *Pre-registration Required*			Pre-registration Required (***5 days prior to class***) - Class Location
September 2000	Times	Contact	Location of Class
[o] ***14 Pre-evaluation***	10:00 am –12:00 pm	Marit Arana	Manteca Comfort Inn, Hwy 120 (East of Hwy 99), Manteca
[o] ***26 Pre-evaluation***	1:00 pm -3:00 pm	Barb Reed	UCCE Office, 821 East South Street, Orland
October	Times	Contact	Location of Class
[o] **25** ***Pre-evaluation***	1:00 pm -3:00 pm	Tom Shultz	Edison AgTAC, Tulare
November 2000	Times	Contact	Location of Class
[o] **14** ***Pre-evaluation***	2:00 pm -4:00 pm	Jonathan Merriam	Stanislaus Ag Center, Service & Crows Landing Roads, Modesto
[o] **16** ***Pre-evaluation***	2:00 pm -4:00 pm	Nyles Peterson	Centro Basco, 13432 Central Ave, Chino
December 2000	Times	Contact	Location of Class
[o] **13** ***Pre-evaluation***	3:00 pm -5:00 pm	Marit Arana	Sacramento County Farm Bureau, 8970 Elk Grove Blvd, Elk Grove

[2] Allied Industry -			Class Location (***mail pre-reg & fee to UC Davis***)	
October 2000	Times	Local Contact	Class Location (***mail pre-reg to UC Davis***)	Registration Fee
[2] October 18, 2000	12:30 pm -5:00 pm	Tom Shultz	Edison AgTAC, Tulare	$125.00 ([3] ***Pre-reg required***)
[2] October 12, 2000	12:30 pm -5:00 pm	Gary Veserat	Yolo County Farm Bureau, 69 W. Kentucky Ave, Woodland	$125.00 ([3] ***Pre-reg required***)
[2] November 9, 2000	12:30 pm -5:00 pm	Nyles Peterson	Centro Basco, 13432 Central Ave, Chino	$125.00 ([3] ***Pre-reg required***)

[1] Consultant's & Partner's "Training"			Class Location (***mail pre-reg & fee to UC Davis***)
August 2000	Times	Contact	Location of Class (*[3] **Pre-reg required at least 7 days prior to class***)
[1] August 12, 2000	8:00 am - 5:00 pm	Deanne Meyer/Gary Veserat	University of California Davis, Davis, California

Contact Name	Title	Counties Served	UCCE Mailing Address	Telephone
Marit Arana	Dairy Advisor	Sacramento/San Joaquin	420 South Wilson Way, Stockton, CA 95205	(209) 468-9492
Jerry Higginbotham	Dairy Advisor	Fresno/Madera	1720 South Maple Ave, Fresno, CA 93702	(559) 456-7558
Jonathan Merriam	Dairy Advisor	Stanislaus/Merced	3800 Cornucopia Way, Suite A, Modesto, CA 95358	(209) 525-6800
Nyles Peterson	Dairy Advisor	San Bernardino/Riverside	UCCE, 777 E. Rialto, San Bernardino, CA 92415	(909) 387-3318
Barb Reed	Dairy Advisor	Glenn/Butte/Colusa	P. O. Box 697, Orland, CA 95963	(530) 865-1156
Tom Shultz	Dairy Advisor	Tulare	2500 West Burrel Ave, Ag Bldg, Visalia, CA 93291	(559) 733-6363
Gary Veserat	Environmental Stewardship Educator Email: *gmveserat@ucdavis.edu*		UC Davis, Department of Animal Science, One Shields Ave, Davis, CA 95616-8521	(916) 798-7825 (mobile) (530) 668-4884 (voice/fax)

[o] ***Pre-evaluation – Pre-registration is required with the local contact/farm advisor, at least five (5) days before the meeting you wish to attend.*** A preparatory training for **dairy producers** participating with "certifying" their dairy by the CDQAP "*3rd Party Evaluator*." ***No charge for pre-evaluation***.

[1] ***Consultant "Training"***: A ***minimum*** of ***10 pre-registrations*** is required 7 days before class date to conduct a "Consultant Training" meeting. Pre-registration is $1,000.00 per person. Registration at the door or received less than 7 days before class date is $1250.00 per person. Consultants also need to complete an Allied Industry Course and successfully pass an exam.

[2] ***Allied Industry*** meetings will be conducted during a single, **4-½ hour** period, the target audience is: bankers, consultants, nutritionists, agencies, veterinarians, irrigation districts, etc. A ***minimum*** of ***10 pre-registrations*** is required 7 days before class date, to conduct an allied industry meeting. There is a ***pre-registration*** required of $125.00 per person. Registration at the door or received less than 7 days before class is $200.00 per person.

[3] ***Pre-registration***: No credit cards. *Checks ONLY - payable to **UC Regents** – registrants please include meeting date, location, name, address, email, and telephone number on the **pre-registration form**.* Mail check to: *Dr. Deanne Meyer - UC Davis, Department of Animal Science, One Shields Ave, Davis, CA 95616-8521*. **Pre-registration** and **fee must be received** a **minimum** of **7 days before the class** you wish to attend. A 48-hour cancellation notice is required for a refund.