The University of Georgia
College of Agricultural and Environmental Sciences
AWARE: Animal Waste Awareness in Research & Extension

Spring/ Summer 2004
volume 9
number 1

AWARE NEWS

http://www.agp2.org

Editors: Dr. L.M. Risse & T.M. Bass

In this issue:

Greetings from the Editor

Our first edition for 2004 is a real "bumper issue", packed with some interesting articles and valuable information. We have a couple quick updates on the regulatory situation as many of our predictions of last summer have come true and new rules are now in effect. UGA-CES has just released an updated bulletin on pearl millet. Dr. Radcliffe offers us some comments on this crop that put it in a nutrient management context. Our premier article this month, from Dr. Larry Newton, provides new information on nutrient uptake from forage production systems that should help producers maximize uptake from manure sources for nutrient management planning. Based on research by Larry and his colleagues, this is a very interesting read. As usual, we are always open to printing your articles, announcements and calendar items; please send us your contributions. Let's hope this dry spring turns around and we have a productive year in Georgia.

Thanks for reading,

TMB

Regulatory Update: Poultry Operations Handling Dry Manure

Dr. Dan L. Cunningham, Department of Poultry Science, The University of Georgia

In August of 2003, the Georgia Department of Natural Resources (DNR) approved new Environmental Protection Division (EPD) animal feeding operations (AFO) regulations for dry manure poultry operations. These new State regulations were passed to meet revised federally mandated AFO rules that brought dry manure poultry operations under permitting requirements. A dry manure poultry operation is one that does not utilize a liquid manure handling system (i.e. flush or lagoon system).

Large AFO Definitions. Georgia's new AFO regulations require that large dry manure poultry operations be permitted and regulated by EPD. These poultry operations are defined as a facility that confines or maintains poultry for at least 45 days in any 12 month period in the following numbers:

1. 125,000 or more chickens or broilers (includes pullets and breeders)
2. 82,000 or more laying hens (includes table egg layers and pullets)
3. 30,000 or more ducks
4. 55,000 or more turkeys

Two or more AFOs under common ownership are considered to be a single operation and subject to permitting if they adjoin each other or if they use a common area or system for the disposal of the manure. Operations below the above indicated thresholds are not required to have NPDES permits unless they are deemed to be a non point source of pollution by EPD.

Requirements for Permitting. Requirements for AFO permitting by EPD for dry manure handling poultry operations that meet the above definitions are:

a. Owners of existing dry manure AFOs must apply for a National Pollutant Discharge Elimination System(NPDES) permit by October 31, 2005. Any person who proposes to commence operation of a new poultry AFO or any person who proposes to expand an existing operation to exceed the minimum number of birds for a permitted AFO must obtain an NPDES permit. Permit applications should be submitted 180 days in prior to beginning operation of the AFO. These permit applications are available on the AWARE website.

b. For existing poultry AFOs, there shall be no discharge of process wastewater pollutants from the operation or manure storage area into surface waters of the State unless a catastrophic rainfall event (25-year, 24 hr storm) occurs. For new or expanded operations there shall be no discharge of process wastewater pollutants from the operation or manure storage areas into surface waters of the State except when a catastrophic rainfall event (100 year, 24 hr storm) occurs.

c. A comprehensive nutrient management plan (CNMP) must be prepared and implemented not later than October 31, 2006. The CNMP will be maintained on the farm and **shall not be submitted to EPD except upon written request by the Division.** The owner of a new AFO shall prepare and implement a CNMP concurrent with the beginning of operation of the AFO. **CNMPs for permitted AFOs require assessment of risks related to phosphorous application.** In Georgia, the use of a **P-Index** will be required to assess site-specific risks for phosphorous application and to identify changes in management practices for high risk sites. For non-permitted poultry operations participating in the State's industry-sponsored CNMP program, the use of the P-Index is strongly encouraged. **For dry manure poultry operations, the CNMP does not have to be prepared by a certified planner but may instead be developed by a person trained in the subject by an academic or trade organization.** (next page)

d. A setback of 100 feet between land application areas and drainage ditches, surface water bodies or wetlands must be maintained. The owner may, however, substitute a 35 feet wide vegetative buffer as an alternative to the 100 feet setback.

e. Soil samples from the land application fields will be collected and monitored for phosphorous content at a minimum of once every five years.

f. Poultry litter/manure analysis for nitrogen and phosphorous content will be required at a minimum on an annual basis.

g. Permitted operations must submit an annual report to EPD as specified in the permit. This report will include number of animals on the farm, amount of litter produced, amount of litter hauled off-site, total acreage available on the farm and used for litter application during the year, any discharges to surface water that occurred during the year and a statement indicating if a certified nutrient management planner was used to develop or approve your CNMP.

h. For poultry operations which have been excluded from all permit requirements, EPD will collect information such as location and compliance with industry developed (voluntary) CNMP implementation. The Georgia Department of Agriculture and other organizations are assisting EPD in these efforts.

Complying with the new State regulations for AFO permitting for dry manure poultry operations should not be difficult for most poultry producers. Georgia poultry producers have been implementing nutrient management plans on a voluntary basis as part of the Georgia Poultry Federation and University of Georgia CNMP program since 1999. Those individuals implementing these programs should be in good position to meet State permitting requirements. Regardless of whether operations meet the requirements for State permitting, all poultry producers in Georgia should be operating from a comprehensive nutrient management plan. **EPD will be monitoring all poultry farms for the implementation of CNMPs.**

Fact Sheets to Aid in EPA Rule Interpretation
Dr. Mark Risse, UGA Extension Engineering

Helping livestock and poultry producers understand the CAFO regulations that the U.S. Environmental Protection Agency (EPA) released in 2003 will be a challenge for service agencies, Cooperative Extension personnel, and commodity associations during the next few years. The National Livestock and Poultry Environmental Stewardship Project and the EPA Ag Center have teamed up to provide resources that can help answer questions about the federal CAFO regulations. **Because of the variation among states in the implementation of these federal rules, this information may not be 100% correct for Georgia but it does state the minimum standards that Georgia's rules must meet.**

The CAFO Fact Sheets are a collection of 24 publications that address questions that educators and producers are most likely to have about what the CAFO regulations mean, how they will affect livestock and poultry production facilities, and what producers must do to comply with the regulations. They are available as MS Word files and PowerPoint slide presentations that you can download from:

http://www.lpes.org/CAFO.html or http://www.epa.gov/agriculture/index.html.

(over)

For a one-time fee of $50, you may download the files and modify them to fit local, state, and regional needs. The factsheets cover a wide variety of topics including "**Do I Need an NPDES Permit for My Livestock and Poultry Operation?**", **"What CAFO Reports Must I Submit? (includes Annual Report Record Sheet)**", **"Alternate Treatment Systems**", **and "Financial and Technical Assistance Available to CAFO Owners/Operators**".

Pearl Millet as a Potential Local Grain for Poultry

David Radcliffe, Miguel Cabrera, Wayne Hanna, Nick Dale, and Gary Gascho. 2001. Excerpt from: Manure phosphorus: Problems and solutions. Broiler Industry. WATT Poultry USA. July. 44-52.

Pearl millet has been grown in the United States for over 75 years as a forage and cover crop. There are over 50 million acres grown in India and Africa for grain because of its drought tolerance, high quality grain and its ability to produce a grain crop under the most stressed growing conditions. Since the late 1980s, dwarf disease resistant pearl millet hybrids have been developed that are adapted to the humid Southeast and that are short enough to be combine harvested.

Some of the advantages of pearl millet as a new grain crop in the U.S. include:

- high grain yield under non-irrigated and drought conditions
- high grain protein/quality with feeding value equal to or exceeding corn
- insignificant preharvest aflatoxins and other mytotoxins
- tolerant of broad range of soil conditions(pH, texture, etc. except water-logged soils)
- deep-rooted and can scavenge nitrogen and other nutrients leached to subsoil levels (largely due to tolerance to low soil pH)
- relatively low production costs
- well-suited for double cropping and rotations

New rust (a major disease that infects this crop late in the season) resistant hybrids that yield about 5000 pounds of grain per acre have been developed that are in the final stages of evaluation. Commercial quantities of the hybrids should be available for planting in Georgia in 2003.

Pearl millet can fit well into cropping systems in Georgia, due to its long window for planting. Successful harvests have been obtained in research for planting dates from May to August using both conventional- (disk or moldboard plow) or strip-tillage. Therefore it can be planted following harvest of any winter crop and possibly even following harvest of corn in south Georgia. It has low fertility requirements in relation to other grain crops, and in particular in relation to corn. Research in Georgia has indicated grain yield and protein yield responses to N fertilizers from 0 to 100 lb/acre, depending on previous crop species and fertilization (Gascho et al.1995; Menezes et al. 1999). In addition residual soil N can be taken up from depths as great as 90 inches (Menezes et al., 1997). Since the N requirements for pearl millet are relatively low, pearl millet should be part of a crop rotation system that includes crops with a high demand for N so that litter or manure application rates can be maximized.

For updated information on pearl millet in Georgia please look up the recently revised UGA-CES, Bulletin 1216, Pearl Millet for Grain at: www.ces.uga.edu/pubcd/B1216.htm. Or go to www.agp2.org, and search for "millet".

Permits and NMPs, Owner of Record.
Thomas Bass, UGA Cooperative Extension Service

The regulatory and permitting system of animal feeding operations is largely based on size. The permits and nutrient management plans are also tied to specific persons, required to be certified operators under most situations. Therefore, it is very important to notify the appropriate agencies when an operation changes in size, ownership or status of operation.

Mr. Vernon Jones, of the GA Dept. of Agriculture (GDA), says, "Producers need to be aware that even though they sell their AFO to someone else, who continues the AFO or the producer decides to cease operation. They are still the "owner of record" on the permit." Any violations or complaints would be traced back to this person. If a farm ceases operation it is in the owner's interest to be removed from the list of operating permitted farms.

For a more detailed explanation of changing your permit status, Tom Hopkins of the Environmental Protection Division (EPD) offers the following, "If a farm reduces herd below permit threshold, the permit should be terminated. We don't have a notice of termination form, but a simple letter of explanation to EPD will suffice. A copy of the original permit application should be included with termination letters. To resume coverage if herd size goes back up to previous levels, another application should be filed within 180 days. This won't trigger new or expanding requirements since the farm was previously permitted under the existing rules. EPD response time is generally 60 to 90 days. Producers should not "flip" their permit coverage too frequently. Abuse of the system could trigger additional compliance inspections and issuance of an individual permit."

Some producers have opted to operate under certain permits even if they are below the size threshold. This means they must follow the provisions and requirements described in the permit. If they wish to reduce regulatory burdens when reducing size then the permit must be terminated. Regardless of size or permit, nutrient management planning and related best management practices are highly recommended.

In conclusion, producers must notify the Environmental Protection Division (EPD) of a change in ownership or operating status for their permitted AFO. Also, GDA should be notified regarding drastic changes in the NMP and reduction in size or closure that affects the NMP requirement. These offices can be reached by phone at (404) 362-2680 for EPD and (404) 656-9383 for GDA.

Managing Dairy Manure Nutrients through Forage Production
G. L. Newton[1], J. K. Bernard[1], R. K. Hubbard[5], J. R. Allison[4], G. Vellidis[3], R. R. Lowrance[5], G. J. Gascho[2], and R. N. Gates[6]

INTRODUCTION

Dairy, livestock and poultry production has concentrated into units with greater animal numbers, often on farms of relatively limited acreage or suitability for extensive manure distribution; thus increasing the difficulty of assuring sustainable water quality. The situation is intensified by the climate over much of the southern U. S. While providing some advantages, rainfall over much of the region creates potential environmental problems in the handling and use of manures. (over)

Even though there are major concerns with manure nutrient losses to ground and surface waters, manure nutrients and decaying organic matter are natural components of the environment. Many of our problems have arisen as a result of a failure to critically credit manure nutrients when developing soil fertility programs, even on farms having significant livestock populations. Dairy farms are generally in much better position to correct this situation than other animal production enterprises, because of their requirement for large quantities of forage. Forage production removes and recycles more nutrients from the soil than other crop alternatives. Efficient production of forage, using animal manure, strengthens the economic position of the region for ruminant production and limits the potential negative environmental impact.

UTILIZATION OF DAIRY MANURE IN FORAGE PRODUCTION SYSTEMS

This review of forage cropping choices and manure nutrient utilization is restricted to results of trials conducted in the southern U. S. where dairy manure was used as the nutrient source for 2 or more years. Such comparisons provide information which will assist in development of NMPs and economically and environmentally sound dairy manure utilization.

At Tifton, research has focused on frequent, around-the-year manure application in an attempt to reduce manure storage and its associated cost and potential for nutrient loss, odor and overflow; maximize recycling of nutrients in crops; and reduce labor demands associated with seasonal manure application. Forage systems were selected to allow the maintenance of vegetative plants on the soil on an essentially continuous basis. The two systems investigated most recently were: a mixture of Abruzzi rye and crimson clover overseeded in the autumn into a Tifton 44 bermudagrass sod (for spring haylage), minimum tillage silage corn seeded after rye/clover harvest, and bermudagrass hay harvest in summer (**CBR**); and conventional minimum tillage (no living cover crop) rye and clover established in the autumn (for haylage), a first crop of temperate corn in spring and a second crop of tropical corn in summer (both for silage) (**CCR**). These systems were investigated under a pivot irrigation system and in replicated small plots, and included comparisons between manure and commercial fertilizer applied at rates based on soil tests. With liquid dairy manure as the only nutrient source, dry matter (**DM**) yields over 4 years averaged 13.1 and 14.5 ton/**ac**/yr for the CBR and CCR systems, respectively. Manure N and P applications averaged about 500 and 175 lb/ac, respectively, with N recoveries in forages being 86% for CBR and 69% for CCR and P recoveries being 44% for CBR and 39% for CCR. The system including the deep-rooted perennial bermudagrass recovered a higher proportion of the applied N. Nitrate-N concentrations in soil water recovered at 32 and 63 inches depth were similar but tended to be slightly greater for the CBR system, suggesting that N losses to groundwater may not be greatly different for the two systems. Manure P recoveries were unacceptably low for most situations where soil test P is above a low level. Application rates of P in this study, using manure from a barn flushed with lagoon liquid, were about double that of previous studies using similar N rates from manure flushed with fresh water. Average forage K levels were 1.57% and 1.35% for the CBR and CCR systems, respectively, mostly due to higher K in bermudagrass than tropical corn. Rye forage was highest in K, averaging 2.8%, with some cuttings being near 3.2% of DM. Manure application resulted in lower nematode and soil borne fungal disease pressure compared to commercial fertilizer, possibly contributing to an 8% yield advantage for manure compared to fertilizer.

Double and triple crop, year-round forage systems have been investigated for dairy manure utilization on manure sprayfields at the University of Florida. They used three levels of manure-N application, 428, 575, and 754 lb/ac. (next)

Dairy manure has been applied to a wide variety of crops in Texas, while forage quality characteristics and nutrient uptakes were monitored. A year-round system including Coastal bermudagrass plus small grain or ryegrass was a component of some of these studies.

In an attempt to compare various crops and crop systems in a manner which would integrate feed nutrients and yield, the economic values of the various forages were calculated. The values for each forage were based on DM, CP, TDN, Ca, P, and energy (calculated from fiber content). Estimated nutrients, primarily from forage variety trials within the same state, were used in some cases. Reference feeds were corn, soybean meal (48% CP), dicalcium phosphate, and limestone (using 2002 prices). These values were multiplied by the yields to arrive at the per ac forage value, which along with reported DM yield and N and P uptake are shown in Table 1.

Some care should be taken in relying on the comparisons in Table 1 (page 8), since many of these results are not based on side by side comparisons. Some factors, including palatability, are not taken into account in the value estimates. As can be seen, the per acre value as well as the N and P uptakes tend to follow DM yields, and grasses tend to out-perform broadleaf forages. Over time, irrigated forages will produce higher value forage and recycle more nutrients than dryland production. Taken across single, double, and triple crops, systems which include bermudagrass tend to have some of the highest values and recoveries of N and P. While not obvious from the table, overseeding bermuda with winter forages often does not increase total yearly DM production or nutrient uptake, but average forage quality is generally improved. This indicates that more productive winter forages are needed for manured fields, but usually significant improvement can be made by increasing the number of cuttings. For sprayfield systems, it may be necessary to plan manure application acreage on winter forage or increase manure storage so that winter application is reduced, since winter forages generally remove fewer nutrients than summer crops (or base land area and application rates on winter, with summer forages supplemented with N fertilizer). Such procedures, to store manure or extend winter application area, will likely be necessary where manure must be applied at P rates, unless some additional manure treatment is installed.

The two highest per ac value systems from Table 1 (page 8) appear to be double crop corn silage with winter rye and Tifton-85 bermuda overseeded with rye, which are essentially equal. However, the production costs associated with these two systems is likely quite different.

ECONOMIC CONSIDERATIONS

The feasibility and economic returns of the two multi-crop forage production systems using liquid dairy manure and commercial fertilizer as nutrient sources at the Coastal Plain Station, discussed above, were evaluated over 3 years. Economic analysis was conducted by developing partial enterprise budgets and then utilizing the stochastic dominance criteria to determine which system or systems were economically and environmentally viable.

The value of temperate corn silage ranged from $92 to $145/ton. Because higher nutrient values per unit of forage were associated with lower yields, these same values per ton produced values per ac of $417 to $286. The rye/clover silage produced the highest value per ton. The CCR system had the highest value per ac in 2 of the 3 years and the highest overall value, $1324/ac. Both of the forage systems are capable of producing large quantities of forage with acceptable to high feeding values. The feeding values of the forage favored CCR over CBR cropping system; however, average annual value-minus-cost for manured (over)

Table 1. Forages Fertilized With Dairy Manure: Yield, Value, and N and P Uptake.

Crop or System	Irrigated	DM yield (ton/ac)	Crop Ratio	Forage Value ($/ac)	Nutrient Harvest N (lb/ac)	P (lb/ac)	State
(Single Crops)							
Coastal Bermuda	No	4.59	100	494	254	62	TX
Coastal Bermuda	Yes	7.45	100	818	277	34	TX
Kenaf	No	1.65	100	191	46	5	TX
Kenaf	Yes	6.15	100	842	290	26	TX
Forage sorghum	Yes	5.71	100	573	107	14	TX
Sorg.-sudan hybrid [1]	Yes	7.40	100	752	170	23	TX
Pearl millet	Yes	5.71	100	559	129	28	TX
Grain sorghum	Yes	4.15	100	462	111	17	TX
Napier hybrid	Yes	5.22	100	534	142	23	TX
Corn	Yes	8.30	100	793	244	41	TX
Buffalograss	Yes	6.51	100	590	221		OK
Sunflower	Yes	2.23	100	265	73	8	TX
Lablab	Yes	3.52	100	471	192	20	TX
Cowpea	Yes	1.07	100	157	89	8	TX
(Double Crops)							
T-85 bermuda / rye	Yes	11.82	85 / 15	1357	415	71	FL
Perenn. peanut / rye	Yes	8.07	75 / 25	989	319	37	FL
C. bermuda / wheat	No	5.04	80 / 20	548	245	70	TX
C. bermuda / wheat	Yes	7.36	76 / 24	833	277		TX
C. bermuda/ryegrass	No	6.20	62 / 38	684	178		TX
C. bermuda/ryegrass	Yes	10.53	77 / 23	1232	303		TX
Sorg.-sudan / wheat [1]	Yes/no	8.12	83 / 17	841		46	TX
(Triple Crops)							
Corn /sorghum / rye	Yes	11.73	50 / 35 / 15	1208	285	54	FL
Corn / bermuda / rye	Yes	10.97	51 / 33 / 16	1199	379	66	FL, GA
Corn /per. peanut/rye [1]	Yes	8.21	61 / 15 / 24	877	213	38	FL
Corn / trp. corn / rye [1]	Yes	13.69	57 / 34 / 9	1360	340	69	GA

[1] Sorg. = sorghum, per. = perennial, trp. = tropical

(continued from pg 7, before table)

CBR was $635/ac while for CCR it was only $413. This difference was primarily due to the increased cost of establishing an additional annual crop (tropical corn), along with increased pest control costs for the summer corn compared to bermudagrass.

In this study, the land area required to handle the manure on an N basis (5.18 cows/ac/yr) was less than the land area required for forage production. These analyses indicate a relatively low net cost per cow or per unit of milk of handling the manure but the cost would increase if quantities of manure applied were limited to the levels of P removed by the crops.

NUTRIENT SINKS AND BUFFERS

The manure sprayfield at the Coastal Plain Station has riparian buffers on three sides. The buffer on the north side of the sprayfield was restored in 1991 as part of the integrated landscape experiment that included the forage system studies. Long-term hydrologic and water-borne nutrient budgets were developed for this riparian wetland. Final retention/removal rates for N ranged from a high of approximately 78% for nitrate (90+% of total) to a low of 52% for ammonium. Final retention rates for inorganic P and total P were 65% and 66% , respectively. The measured denitrification estimate was about 83% of the N retention/removal. The remainder of the N retention/removal and most of the P retention would be accounted for by vegetation uptake and soil storage of N and P. The riparian buffer was a very effective nutrient sink for the N and P coming from the upslope field, resulting in essentially a five fold reduction of N and a three fold reduction in P concentrations.

Additional manure-related environmental benefits have been documented for forests and shelterbelts. Appropriately located trees are reported to reduce odors and nutrients in air down-wind of livestock facilities and manure application fields. Dust, ammonia, and odor molecules are reduced by deposition and adsorption at forest edges. These same reports indicate that even very narrow bands of trees remove some pollutants, but also increase vertical mixing which generally reduces the distance that odors can be detected.

CONCLUSIONS

Dairy manure has significant potential to cause water pollution, especially when large numbers of cattle are maintained on limited land areas. Nitrogen and P are the nutrients of primary concern, and preventing their movement to surface waters or groundwater should be a primary objective of manure management. Published data suggests that the southern U.S. may be more vulnerable to water pollution from manure than other regions of the country, partially due to lower plant nutrient uptake. Increasing nutrient uptake from fields where manure is applied should be a goal in most production systems. Production of high quality forage for dairy cattle rations is also more difficult in the warmer regions of the country. Multi-crop systems with year-round forage production will help meet the objective of linking increased nutrient uptake with economical production of quality forage. For two triple-crop systems reviewed in more detail, N and P recoveries were greater for a corn silage-bermudagrass hay-rye haylage system while yields and forage quality were greater for a corn silage-corn silage-rye haylage system when manure was applied at rates to supply N. Bermudagrass is apparently capable of retrieving more of the remaining nutrients applied during the lower-uptake, autumn-winter period than a second crop of corn silage. Examination of several single, double, and triple crop systems suggest that the economic value of the forage produced as well as the N and P uptake rates tend to follow DM yields; grasses tend to out-perform broadleaf forages; over time, irrigated forages produce higher value forage and recycle more nutrients than dryland production; and systems which include bermudagrass tend to have some of the higher economic values and recoveries of N and P. Forage systems which produce the highest yields and/or forage quality do not necessarily have the greatest economic advantage, as production costs may negate these advantages. Applying manure based on N normally results in excess application of P, and inadequate forage production to meet the herd's forage needs. Applying manure to the land area needed to produce enough forage for the herd, then supplementing with N, will improve the P balance, but additional measures may be needed. Riparian buffers can produce a five fold reduction in nitrate concentration and a three fold reduction in P concentration in water moving from manured fields to streams or lakes and should be a component of manure utilization systems, especially in humid regions. (over for ACKNOWLEDGMENTS AND REFERENCES)

ACKNOWLEDGMENTS AND REFERENCES

This article is taken from a paper published in the Journal of Dairy Science: Newton, G.L., J. K. Bernard, R.K. Hubbard, J.R. Allison, R.R. Lowrance, G.J. Gascho, R.N. Gates, and G. Vellidis. 2003. Managing manure nutrients through multi-crop forage production. J. Dairy Sci. 86:2243-2252, which includes a complete list of references. Much of the work from the Univ. Georgia reported in this paper was supported by the USDA-NRICGP.

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New AWARE and AgP2 Website
Thomas Bass, UGA Cooperative Extension Service

As of January this year, the AWARE Web Site has moved! The same great information is there, however there are some enhancements over the old system. The most important function is the ability to search our resources for documents, links, forms and tools. There is still a lot of important content on the pages, so browse around or feel free to contact us for help.

You can find the new AWARE Page at www.agp2.org; from the home page, click on "Animal Waste". You can also access information from AWARE's sister programs. These programs are collectively known as the Agricultural Pollution Prevention Program and they cover the topics of: environmental assessments, animal waste management, land application, sustainable agriculture, environmental horticulture and crop production. The AgP2 program is a joint effort of UGA-CAES and P2AD-GA DNR.

AWARE Question of the Issue:
Answered by Dr. Mark Risse, UGA Extension Engineering

This month's question was from a consultant that had been through the certified nutrient management planner program and was having difficulty in attracting new agricultural clients that wanted nutrient management plans. His questions were, *"Has Georgia fallen behind other states in the nutrient management planning efforts?"* and *"What can I do to attract agricultural clients for nutrient management?"*

My response stated that, in my opinion, the Georgia nutrient management program is highly successful. As required by the State rules, almost all of the dairy, swine, and poultry animal feeding operations that manage their waste as a liquid have completed their nutrient management plans. Over 220 plans have been submitted and approved. Most of these plans were completed by county extension agents that had gone through the State certification program. Consultants, the State Soil and Water Conservation Commission, and NRCS have also contributed to the process. According to the new State regulations, about 2,000 dry litter poultry operations are now required to have nutrient management plans, however, these plans will not have to be developed by certified planners and will not be submitted to the State. A recent Department of Agriculture survey indicates that about 85% of these growers have a plan in place. Most of these were developed by the grower with assistance from the county agent or other service providers. It has been our opinion that plans developed by growers will be better understood and implemented by the growers. (next)

It seems that we are will on our way to accomplishing a monumental task in a relatively short period of time.

As a consultant, I think there are opportunities for you to contribute to the nutrient management planning process. To date, it seems that the consultants that have been successful with the process have worked with primarily large dairy or swine operations and have coupled the nutrient management with other activities on the farm such as permit application and maintainance, well installation and monitoring, or general crop and livestock consulting enterprises. Often, there was an existing relationship with the consultant and the nutrient management was an additional service provided for an additional fee. Newer areas where animal feeding operations are now seeking greater assistance include lagoon closure and sludge removal, development of value added processing for manure and litter such as composting and energy production, and development of ISO14000 style environmental management systems. In the area of dry litter poultry plans, I don't foresee the farmers hiring consultants to develop these plans but could foresee the potential for an integrator or cooperative group of growers to hire a consultant to work with their growers on litter utilization options. If I were a consultant, I would make the integrators and other farm groups aware of the services I could provide beyond nutrient management and try to cultivate a relationship there initially.

The new NRCS Technical Service Providers program also presents substantial opportunity in my opinion. You can find out more about this program at http://techreg.usda.gov/ I encourage you to read this and register your organization. This is a way that the government can pay you to help farmers.

Finally, you may have more success in some other States in the Southern region. Some of these States require different certification and do not have the involvement of county agents like we do in Georgia so demand may be higher there. Many are not as far along in the nutrient management process and had to make substantial modifications to their regulations to meet the new EPA requirements.

EMS's in Agriculture Gathering Steam

Dr. Mark Risse, UGA Extension Engineering

Environmental management systems (EMS) are strategies currently implemented by many industries to address environmental issues related to their production and distribution systems. These programs are highly encouraged by the U.S. EPA for providing pro-active planning to minimize potential environmental hazards, and industries that have implemented them often find more efficient means of maintaining operations while addressing and sometime eliminating environmental liabilities, including violations. Over the past several years, more companies within agriculture sectors have committed to developing an EMS. Other producers, processors and farmers are interested in learning more about EMS's because they provide the agriculture community an opportunity to develop incentive-based programs for environmental improvement in agriculture.

The University of Georgia has been involved in a major National effort to investigate the use of EMS's on livestock operations and recently held a National forum on livestock EMS's in Washington, D.C. Feedback from this forum and many tools that have been developed to assist livestock operations in EMS development are available at http://www.uwex.edu/AgEMS/ or http://ems.unl.edu/index.htm. Georgia recently completed a guidebook for developing poultry EMS's that is available by calling Extension Engineering at (706) 542-3086. An online version will be available at www.agp2.org by the end of the summer. (over)

(from previous page) A conference on Applied Environmental Management Systems in Agriculture was held May 26-27 in Kansas City. The conference included speakers from across the country addressing environmental management issues in major agricultural sectors. Emphasis was placed on the benefits and challenges faced during the process. Discussions were had regarding current incentive programs and new incentives that could further promote the use of environmental management systems in agriculture. For more information on the speakers and topics addressed, see http://www.ses-corp.com/EMS Conference.htm

Calendar

Georgia Section of ASAE Annual Meeting, June 3-5, Macon, Georgia.
See http://www.engr.uga.edu/resources/clubs/ga_asae/

Georgia Pork Congress, July 28 and 29, State Agri-center and Fair Grounds, Perry Georgia. Charles Griffin, (229) 336-7760

Energy and Agricultural Carbon Utilization: Sustainable Alternatives to Sequestration
June 10 -11, 2004, The Georgia Center for Continuing Education, Athens, GA. Ryan Adolphson (706) 542-4493, ryan@engr.uga.edu

National Poultry Waste Management Symposium, October 24-26, 2004, Memphis TN. Wanda Linker, c/o Alabama Poultry & Egg Association, PO Box 240, Montgomery, AL 36101 Tel: (334) 265-2732 Fax: (334)265-0008, e-mail: wanda@alabamapoultry.org

Recent Happenings...

Monroe County Poultry NMP and Litter Spreader Calibration Field Day, May 14, 2004

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