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Maryland Nutrient Management Policies

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AGRICULTURAL ECONOMICS

October 9, 2019

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Cornhusker Economics

Maryland Nutrient Management Policies

10-4-19 Market Report	Year Ago	4 Wks Ago	10-9-19
Livestock and Products, Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight	*	*	*
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	183.29	170.01	162.44
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	163.41	148.65	155.53
Choice Boxed Beef, 600-750 lb. Carcass	204.30	229.51	212.58
Western Corn Belt Base Hog Price Carcass, Negotiated	63.34	*	*
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean	78.25	72.64	75.03
Slaughter Lambs, wooled and shorn, 135-165 lb. National	136.32	154.62	151.01
National Carcass Lamb Cutout FOB	381.63	395.99	396.64
Crops, Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	4.61	3.46	3.50
Corn, No. 2, Yellow **Columbus**, bu.	3.29	3.51	3.78
Soybeans, No. 1, Yellow **Columbus,** bu.	7.42	7.54	8.17
Grain Sorghum, No.2, Yellow Dorchester, cwt.	5.23	5.23	5.93
Oats, No. 2, Heavy Minneapolis, Mn, bu.	3.11	3.00	3.09
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	*	*	*
Alfalfa, Large Rounds, Good Platte Valley, ton.	102.50	*	107.50
Grass Hay, Large Rounds, Good Nebraska, ton.	87.50	105.00	102.50
Dried Distillers Grains, 10% Moisture Nebraska Average.	135.00	137.50	146.00
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	48.50	42.50	48.50

*** No Market**

Nonpoint pollution control. The federal Clean Water Act (CWA) regulates *point sources* of water pollution (such as municipal and industrial wastewater discharges to rivers and streams) but not *nonpoint sources* (NPSs), like farm runoff. EPA has provided financial incentives to states to develop and implement NPS programs but does not regulate NPSs itself. Clean water groups have sued to force states to implement wasteload allocation under the CWA on streams not meeting water quality requirements and to require cities and industries to clean up their wastewater discharges to improve water quality. States can elect to regulate NPSs under this total maximum daily load (TMDL) program but EPA cannot require states to regulate NPSs. EPA is collaborating with states to reduce nonpoint pollution runoff into the Great Lakes, the Chesapeake Bay, and the Gulf of Mexico.

In March 2019, two clean water groups sued Iowa's state natural resource officials regarding agricultural NPS nitrate pollution of the Raccoon River, the principal drinking water source for Des Moines. A 2015 lawsuit by the Des Moines Water Works against three county agricultural drainage districts was dismissed on procedural grounds. If the current lawsuit is successful, I would not be surprised to see similar lawsuits filed.

Chesapeake Bay program. Since 1983, Maryland, Virginia, Pennsylvania and the District of Columbia have worked with EPA to improve the Chesapeake Bay water quality. Since 1985, nitrate load-

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ings to the Bay have been reduced by 32%, phosphorus loading reduced by 41% and sediment loads reduced by 28%. This has occurred through major municipal sewage treatment upgrades and improved agricultural nutrient management and soil conservation. We will look at Maryland's nutrient management program, both the parts representative of all the Bay states' manure regulations and the phosphorus restrictions unique to Maryland.

General nutrient management program. All farms applying manure to cropland or pasture land must have a *nutrient management plan* prepared. Nutrient management plans or NMPs are ordinarily required for livestock facilities regulated as concentrated animal feeding operations or CAFOs under the CWA. Under state law most of the Bay states regulate all manure agricultural applications except for very small farms (e.g. less than 10 acres).

The plan may be prepared by conservation district personnel, a private crop consultant, or by a qualified producer. The plan includes:

1. nutrient application setbacks from surface waters
2. farm map(s) with fields marked and stream/pond buffers indicated
3. soil test results (N, P) and cropping information
4. manure test results
5. manure utilization and allocation sheets showing where manure is to be applied and in what amounts
6. manure spreader calibration sheets
7. phosphorus risk assessment forms
8. manure/fertilizer recommendations
9. manure application requirements (how much manure may be applied to cropland and pasture land)
10. field-by-field manure application form and
11. forage and crop yield calculation sheets.

All fields must have soil tests at least every three years, all operators must complete nutrient management training every three years, and all operators must report fertilizer and manure applications every year.

Application requirements:

1. Winter applications of manure and commercial fertilizer (Dec. 16-Feb. 28) are banned.
2. Manure must be injected or incorporated within 48 hours of application except for no-till and for pasture or hay production.
3. Cover crops are required when manure is fall applied to fallow ground.
4. Poultry litter may be applied in spring and fall for current or upcoming crops if land grant university nutrient recommendations are followed.

Application setbacks: A 10-35 foot setback is required for nutrient application (identified in NMP). The 35-foot setback is required for broadcast fertilizer application.

Manure storage. Temporary and permanent manure storage is regulated and must be at least 35 feet from a vegetative buffer, at least 100 feet away from a stream, at least 150 feet from a well, at least 300 feet from a down gradient well, at least 200 feet from a neighbor's home, and cannot be located within a flood-prone area. Livestock fencing may be required to keep cattle out of the stream.

Maryland Phosphorus Management Tool (PMT). Maryland imposes special restrictions on manure applications to land with high phosphorus (P) content. These restrictions are implemented using the Maryland PMT. Maryland is the only state that bans manure application to high P fields.

The objective of the Maryland PMT is to identify critical areas where there is high P loss potential due both to a high transport potential (steep slopes, sandy soils, shorter distance to stream, etc.) and a large source of P and to encourage the use of management and conservation practices in the critical areas to protect water quality. P application rates generated by the PMT are lower than those under the previous Maryland P index. By 2020 all fields will be gradually transitioned to the lower PMT P application rates.

Some factors the PMT calculations are based on include:

1. distance from the field to the water source
2. any vegetative buffer between the field and the water source
3. how the manure or fertilizer is applied (injection, method of incorporation, amount of crop residue, etc.)
4. soil drainage class (excessively drained, well drained, poorly drained, etc.) and slope
5. amount of residual P in the soil
6. crops to be grown, and
7. number of applications and amounts applied. The PMT represents a pretty complex set of calculations.

The calculated PMT values determine whether a field is considered high risk, medium risk or low risk. *Highest risk fields (>500 P fertility index value [FIV] in 2016) cannot have P applications.* This applies to about 2% of all fields.

- High risk fields (>450 P FIV) began transitioning to lower P applications in 2018.
- Medium risk fields (300-499 P FIV) began transitioning to lower P applications in 2019.
- Lower risk fields (150-299 P FIV) will begin transitioning to lower P applications in 2020. All fields will be subject to the PMT application rates by 2020.

Commentary. P pollution of lakes is a perennial issue throughout the U.S. including Nebraska. Recent media attention to blue green algae issues has heightened public concerns regarding hypoxia. The Maryland approach, including banning the use of manure on fields with very high P levels, has the potential to reduce nutrient pollution of rivers, streams and lakes throughout the U.S. including in Nebraska.

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