

#### 4.6.4.3.4 Application and Review Process/Completing Permit Application Forms/ Attaching Supplemental Information/Additional General Permit Requirements/ AFO/CAFO Nutrient Management Plan

##### **Applicability:**

This applies to nutrient management plans for applications for Concentrated Animal Feeding Operations (CAFOs).

##### **Content:**

The focus of the review of nutrient management plans is whether the operation has enough land available to properly apply the process waste. The two main areas of focus are nutrients and hydraulic loading. Nutrients are the larger issue when dealing with animal waste systems.

Class 1A operations that use wet handling systems are required to test process wastes, soils and adjoining waters for nitrogen, phosphorus and potassium levels. All other operations, unless otherwise dictated by a site-specific permit, are required to land-apply using nitrogen as the limiting nutrient.

Land available for land application can be owned by the applicant or the applicant can sign a spreading agreement. An example format for a spreading agreement is Manual 121, Form F. Other formats are accepted, as the program does not have specific requirements as to what must be included in the agreement. The agreement should be long term so that the operation has adequate time to make alternative arrangements in the event that the contract is not renewed.

The program has permitted dry litter poultry operations without adequate land owned or contracted application areas in McDonald, Newton, Barry, and Lawrence Counties. This production area has an established poultry litter brokerage system through which the litter can easily be sold or given away. An on-line web site, Missouri Litter Market, also provides a means of connecting litter producers with persons interested in litter and individuals who provide hauling and spreading services.

There are two accepted methods for determining how much nitrogen can be applied: the Conservative Method and the Plant Available Nitrogen Method. The conservative method allows the application of 100 pounds of nitrogen per acre. Details are contained in Manual 121. Allowances are made for nitrogen lost in storage, but allowances cannot be made for losses experienced in land application.

The Plant Available Nitrogen (PAN) approach is commonly used. The review engineers check the PAN calculations for accuracy and reasonability. PAN explanation sheets and computer spreadsheets are available to help with this review.

In addition to showing there is enough land on-site or within a reasonable distance, the application must include separation distances and best management practices. The appropriate separation distances can be found in the department's Guide to Animal Feeding Operations. Best management practices (BMP's) are incorporated in the general permit and each review engineer should have a copy on hand. Because following the department's list of BMP's is a permit requirement, the BMP's do not have to be explicitly spelled out in the application.

The nutrient management plan should also contain soils maps and soils data for the land application fields. The review engineer checks the fields for suitability by looking for sinkholes, wetlands other land and water features, slope, and the permeability of the upper layers of soil.

Buffer distances shall either be marked on the soils maps or stated in the application. The review should include a general check to see if the number of spreadable acres available seems reasonable according to the maps and excludes buffer distances.

Land application plans should include compost if mortality composting is planned.

### **Legal References:**

*Code of State Regulations:*

[10.CSR.20-6.300](#) Concentrated Animal Feeding Operations (CAFOs)

### **Other Links:**

[Form F - MO780-0725 PDF](#) – Application for Approval or Permit for CAFO

Manual 121 – available through the P&E Section Agricultural Unit

[Guide to Animal Feeding Operations PUB915 PDF](#)

[Missouri Litter Market, Poultry Litter Information Exchange](#)

### **Key Words:**

concentrated animal feeding operation, application, nutrient management plan, land application, nutrient management

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