

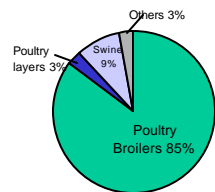


A Simplified NMP for Alabama Poultry AFOs

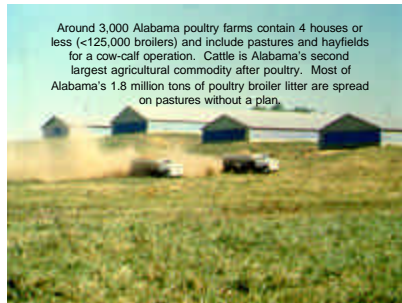


C.C. Mitchell and T.W. Tyson, Auburn University and Alabama Cooperative Extension System

Alabama CAFOs



Since Alabama's AFO/CAFO Rules were implemented in 1999, 937 CAFOs have registered and filed CNMPs. Eighty-five percent of these (810) are poultry broiler operations. This leaves around 3,000 small, poultry AFOs in Alabama who do not have plans and are not required to register but are required to follow NRCS Code 590 Nutrient Management best management practices. Without a plan, these producers have no way to document that they are following BMPs.



Around 3,000 Alabama poultry farms contain 4 houses or less (<125,000 broilers) and include pastures and hayfields for a cow-calf operation. Cattle is Alabama's second largest agricultural commodity after poultry. Most of Alabama's 1.8 million tons of poultry broiler litter are spread on pastures without a plan.



Step 1. Estimate Broiler Litter & Compost Produced

4 houses X 28,000 birds/hse X 6 flocks/yr = 672,000 birds/year
 672,000 birds X 4.5 lb/bird X 0.5 lb. litter/lb bird = 1,512,000 lb. litter or **756 tons**
 ~88 tons used to produce 98 tons of composted dead birds
668 tons litter produced annually
(Will store in dry stack - 1/3 or 223 tons)
98 tons compost produced annually
(Will store 1/3 or 33 tons in composting facility)



Step 2. Determine nutrient value of broiler litter and compost

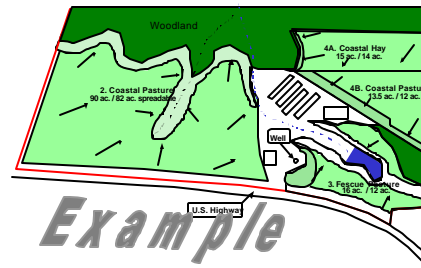
668 tons litter to spread (47-58-45 per ton*)
98 tons compost to spread (43-58-45 per ton*)
TOTAL AVAILABLE NUTRIENTS ON FARM =
N = 35,600 lb.
P₂O₅ = 44,400 lb.
K₂O = 34,500 lb.

*Pounds per ton N-P₂O₅-K₂O From NRCS-AL Code 590 table for surface applied broiler litter. May use adjusted lab values once litter is tested.



Step 3. Map and calculate land area for spreading, including required buffers

160-acre Alabama Poultry/Cattle Farm



Step 4. Determine target crop and nutrient needs and timing for each field.

Field 2 (82 spreadable acres)
 "Coastal Bermudagrass Pasture overseeded with eye for winter grazing"
 Soil test: P-Medium K-Medium
 P INDEX Rating = "Low"
 Recommendation: Coastal = 120 - 40 - 40N N-P₂O₅-K₂O per acre
 Rate = 100-80-50
 TOTAL = 220-100-50
 Plan: Follow soil test N recommendation. Make summer applications (1/2) and fall applications (1/2) in fall (10/15-10/30)
 1.1 lb. N/acre in fall (10/15-10/30)
 1.2 lb. N/acre in spring (10/15-10/30)
 *State has registered dead bird compost for use on the farm where it was generated.

Field 3 (12 spreadable acres)
 "Fescue pasture, high management"
 Soil test: P-Medium K-Medium
 P INDEX Rating = "High"
 Recommendation: 120 - 50 - 50 N-P₂O₅-K₂O per acre
 Application basis: Soil test recommendation (Maximum 100 pounds nitrogen per acre per year. Maximum rate of P removed will be only 14 pounds per acre per year. Maximum rate of K removed will be only 20 pounds per acre per year.)
 Plan: 1.2 lb. N/acre in fall (10/15-10/30)
 Commercial N fertilizer in spring.

Field 4A (14 spreadable acres)
 "Coastal bermudagrass hay - high yield"
 Soil test: P-Very high K-Medium
 P Index = "Very High"
 Recommendation: 100 cutting - 0 - 0
 Rate = 100-0-0
 Plan: Since no P is recommended, a very high P index does not mean that no more than 14 lb of P should be applied.
 Application basis: Soil test recommendation (Maximum 100 pounds nitrogen per acre per year. Maximum rate of P removed will be only 14 pounds per acre per year. Maximum rate of K removed will be only 20 pounds per acre per year.)
 Plan: 1.2 lb. N/acre in spring (10/15-10/30)
 325-0-272 from commercial fertilizers

Field 4B (12 spreadable acres)
 "Coastal bermudagrass pasture overseeded with eye in fall"
 Soil test: P-Medium K-Medium
 P Index = "Low"
 Recommendation: Coastal pasture = 60 - 40 - 40
 Rate = 100-80-50
 Application basis: Soil test recommendation (Maximum 100 pounds nitrogen per acre per year. Maximum rate of P removed will be only 14 pounds per acre per year. Maximum rate of K removed will be only 20 pounds per acre per year.)
 Plan: 1.2 lb. N/acre in fall (10/15-10/30)
 Use 1/2 lb. N fertilizer on eye in March and on coastal if more forage is needed



Step 5. Determine uses for excess litter/compost production

Summary	
Field 2 (82 acres):	303 tons litter
Field 3 (12 acres):	12 tons litter
Field 4A (14 acres):	22 tons litter
Field 4B (12 acres):	31 tons litter
TOTAL USED	368 TONS LITTER
TOTAL AVAILABLE	668 TONS LITTER
EXCESS LITTER AVAILABLE TO ALABAMA CERTIFIED ANIMAL WASTE VENDOR (CAWV # 0169):	300 TONS LITTER
	98 TONS COMPOST

See examples of detailed worksheets and NRCS Code 590 on table below.