



Poultry Fact Sheet

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MANAGING YOUR POULTRY WASTE PROBLEMS

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One of the major by-products of the poultry business is mountainous volumes of manure. It is estimated that California's poultry industry produces an amount equivalent to the total tonnage of feed used. This would represent more than three million tons of fresh manure annually or 9000 tons per day.

Table 1. Estimated poultry manure production in California*

Type	No. of birds (millions)	Per bird (lbs)	Tons/day (fresh) - - - -	Tons/year (fresh) (thousands)	Tons/year (dry **) - - - -
Layers	30	80	3.30	1,200	400
Pullets	15	14	0.29	150	35
Broilers	220	9	3.01	1,100	367
Breeders	1	120	0.16	60	20
Turkeys	29	60	2.38	870	290
Total			9.14	3,335	1,112

* 1990 estimates

** one-third of wet weight

Manure handling procedures are fairly standardized for the broiler and turkey segments of the industry with litter management programs in almost exclusive use. The layer industry, on the other hand, has a variety of handling programs ranging from frequent liquid or dry removal to infrequent dry clean-out programs.

The cage layer industry uses the following manure handling practices:

frequent dry clean-out (1-7 days)	45%
infrequent dry clean-out	45%
liquid systems (lagoons)	7%
liquid systems (tanks)	3%

Fortunately, manure starts to dry immediately as it is exposed to the environment. Hot and dry conditions accelerate drying while cold and damp conditions reduce the rate of drying. As manure dries, it not only loses moisture, but its volume is also greatly reduced.

Ten thousand caged layers will produce 2500 pounds of manure per day with an estimated volume of 50 cubic feet. When this is dried to 10% moisture, it will only weight 695 pounds and will be reduced to 27 cubic feet. This represents a 72% reduction in weight and 46% reduction in volume.

Manure should be dried to 30% or less moisture levels as soon as possible to prevent fly breeding, reduce obnoxious odors and maintain the nutrient value of the manure for fertilizer or feeding purposes. This is best accomplished by providing maximum exposure of manure particles to dry air. The faster manure is dried, the higher the nitrogen value. Thin-bed drying is one of these techniques.

Table 2 gives the approximate values for typical cage manure at three moisture levels. Analyses may vary because of the type and age of the flock that produced it, age of the sample, moisture content, history of handling, environment, analytical and sampling problems. Artificially dried fresh manure often contains more than 5% nitrogen.

Table 2. Poultry manure approximate analysis*

Moisture (type)	Percent Nitrogen	Percent Phosphorus	Percent Potassium
75% (fresh)	1.13	0.74	0.63
35% (moist)	2.36	1.31	0.98
10% (dry)	3.84	2.01	1.42

* Source: Chicken Manure as a Fertilizer (Riverside County)

MARKETING MANURE

Poultry manure is marketed in a variety of ways. The most common use is as a fertilizer in the bulk dry or liquid form. Some poultry producers process their poultry manure to make it more acceptable as a "side-dressing" fertilizer, as a consumer product in bags or as a ruminant feedstuff. Such procedures should eliminate undesirable characteristics such as lack of uniformity, odor, dustiness, weed seeds, etc..

Poultry manure should be marketed on the basis of it's value as a source of needed plant nutrients. Table 3 lists the approximate value at current prices for the three major nutrients.

Table 3. Cage layer manure - estimated value as a fertilizer (\$/ton)*

Moisture (type)	Nitrogen	Phosphorus	Potassium	Total
75% (fresh)	4.00	3.60	2.00	9.60
35% (moist)	5.57	6.29	2.86	14.72
10% (dry)	13.85	10.00	4.62	28.47

* 90% of N available, \$.20/lb (N), \$.25/lb (P), \$.15/lb (K)

The poultry producer should inform his buyer of the economic value of his product, and strive for consistent quality. Above all, poultry manure must be considered a "product" and not just a useless waste of no value.