

Table 2. Nitrogen credits for previous crops.

Previous Crop	Nitrogen Credit Lbs N per acre
Grass sod	20
“Fair” clover (20-60% stand)	40
“Good” clover (60-100% stand)	60
“Fair” alfalfa (20-60% stand)	60
“Good” alfalfa (60-100% stand)	100
Sweet corn stalks	30
“Good” hairy vetch winter cover crop	106
Corn for grain	40

nature of the organic N compounds in poultry manure. This does not mean, however, that there is never any carry-over of N from poultry manure applications. If excessive rates of poultry manure (or commercial N fertilizers) are used, high levels of residual inorganic N, including nitrate, may be in the soil the following spring. High levels of soil nitrate in the fall, winter and spring have the potential to pollute groundwater.

**Previous crops:** Previous crops can supply appreciable amounts of N to succeeding crops. Legumes, such as alfalfa and red clover, furnish 100 pounds or more of N to crops that follow. Other legumes, mixed grass-legume stands and grass sods supply less N to succeeding crops (Table 2).

**Manures and other waste products:** The N content of manures and their N fertilizer equivalents are highly variable. Differences in N content are due to the species of animal, the animal’s age and diet, the moisture content of the manure, handling and storage and the amount of bedding in the manure. The N fertilizer equivalent of a given manure varies not only with the animal species and the total N content of the manure, but also with the time of application and time elapsed between spreading and incorporation (Table 3).

The values in this table are based on numerous analyses of Connecticut manures as well as published data from other states. If specific manure analysis data for the farm are not available, growers should estimate N credits by using Table 3.

**Compost as a nutrient source:** Finished compost is a dilute fertilizer, having an analysis of about 1-1-1 (N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O). The nitrogen content of composts varies according to the source material and how it is composted. In general, nitrogen becomes less available as the compost matures. Nitrogen in the form of ammonium (NH<sub>4</sub><sup>+</sup>) or nitrate (NO<sub>3</sub><sup>-</sup>) is readily available, however in a finished compost there should be little ammonium, and any nitrate that

Table 3. Nitrogen credits from manure incorporated before planting.

Kind of Manure	TIME(S) OF APPLICATION (lbs N/ton)		
	April/ May	Fall Only	Other times
<b>DAIRY (COW)</b>			
Solid	5	2	3
Liquid	16	8	12
<b>POULTRY, CAGE LAYER</b>			
fresh			
(20-40% D.M.) <sup>4</sup>	16	5	8
sticky-crumbly			
(41-60% D.M.)	22	7	11
crumbly-dry			
(61-85% D.M.)	32	10	16
<b>LIQUID POULTRY</b>	26	7	13

1. “April and/or May” credits are for manure applied and incorporated in April and/or May for spring-planted crops and for manure applied and incorporated within four weeks of planting at times other than spring.
2. Use “fall only” values for manure applied in no-till or maintenance situations where the manure is not incorporated.
3. “Other times” means times other than April and/or May or fall only for manure applied for spring-planted crops. “Other times” also means any combination of times from fall through May other than April and May for spring-planted crops. Examples: March, February, March and April; November, April and May.
4. Dry matter.

is produced could have leached away, especially if the compost is cured or left out in the open. The majority of the nitrogen in finished compost (usually over 90%) has been incorporated into organic compounds that are resistant to decomposition. Rough estimates are that only 5% to 15% of the nitrogen in these organic compounds will become available in one growing season. The rest of the nitrogen will become available in subsequent years.

**Synthetic chemical fertilizers:** Fertilizers used to supply N include urea (46-0-0), diammonium phosphate (DAP: 18-46-0), monoammonium phosphate (MAP: 11-48-0), ammonium nitrate (34-0-0), urea-ammonium nitrate solution (UAN: 32-0-0) and various manufactured and mixed fertilizers such as 15-8-12, 15-15-15 and 10-10-10. In bulk blended or custom blended mixes, N-containing fertilizers with almost any grade can be provided.

## Nitrogen Losses

Nitrogen losses occur in several ways. Some, such as volatilization, denitrification or immobilization, result primarily in N being unavailable to crop plants. Leaching loss results in potential groundwater contamination in addition to reduced crop growth.