

GardenNotes #233

Calculating Fertilizer Application Rates

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Steps to Calculating Fertilizer Application Rate

Example is for a 40-foot by 100-foot lawn area, using a 20-10-0 fertilizer

1. Calculating size of area to be fertilized

___ ft. long X ___ ft. wide = ___ square feet

Example:

40 feet X 100 feet = 4000 square feet

2. Calculating fertilizer application rate

___ lb. nutrient per ___ sq. ft.

= ___ lb. fertilizer / ___ sq. ft.
___ % nutrient in fertilizer

Example:

1 lb. nutrient per 1000 sq. ft.

= 5 lbs. fertilizer / 1000 sq. ft.
20% nutrient in fertilizer
(.20)

3. Calculating pounds of fertilizer to apply

$$\begin{array}{rcl}
 \text{lawn or garden} & & \text{application} \\
 \text{area} & \times & \text{rate} \\
 & & = \text{pound of fertilizer} \\
 & & \text{per garden or lawn} \\
 \\
 \text{_____ sq. ft.} & \times & \text{_____ pounds fertilizer} \\
 \text{-----} & & \text{-----} \\
 \text{garden or lawn} & & \text{_____ sq. ft.} \\
 & & = \text{_____} \\
 & & \text{garden or lawn}
 \end{array}$$

Example:

$$\begin{array}{rcl}
 \text{4000 sq. ft.} & \times & \text{5 pounds fertilizer} \\
 \text{-----} & & \text{-----} \\
 \text{lawn} & & \text{1000 sq. ft.} \\
 & & = \text{20 pounds fertilizer} \\
 & & \text{-----} \\
 & & \text{lawn}
 \end{array}$$

Additional Information – *CMG GardenNotes* on Soils, Fertilizers and Soil Amendments:

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Fertilizer Application Rate Table

Since soil test recommendations for any given soil do not exactly match a fertilizer, select a fertilizer that gives comparative amounts of N, P and K as recommended by the soil test. In fertilizer application, it is most important to match the N requirement and compromise some for the P and K. The amount of fertilizer to apply that will give the recommended amount of nitrogen can be obtained from the following table:

Amount of Fertilizer to Apply Based on Actual Nitrogen Recommendations

Nitrogen Rate:	<u>0.1 lb. N / 100 sq. ft.</u>	<u>0.2 lb. N / 100 sq. ft.</u>	<u>1 lb. N / 1000 sq. ft.</u>
<u>Fertilizer Grade</u>	lbs. fertilizer to apply per 100 sq. ft.	lbs. fertilizer to apply per 100 sq. ft.	lbs. fertilizer to apply per 1000 sq. ft.
45-0-0 (urea)	0.2	0.4	2.2
37-3-3	0.3	0.5	2.7
36-6-6	0.3	0.6	2.8
33-0-0	0.3	0.6	3.0
32-4-4 32-3-10	0.3	0.6	3.1
30-4-4 30-0-10	0.3	0.7	3.3
28-3-3 28-4-6	0.4	0.7	3.6
27-7-7 27-3-3	0.4	0.7	3.7
25-5-5 25-3-12	0.4	0.8	4.0
24-8-16 24-0-15	0.4	0.8	4.2
22-4-4 22-6-3	0.5	0.9	4.5
21-0-0 21-3-12	0.5	1.0	4.8
20-20-20 20-4-8	0.5	1.0	5.0
19-19-19 19-11-12	0.5	1.0	5.3
18-6-12 18-3-6	0.6	1.1	5.6
16-8-8 16-4-8	0.6	1.3	6.3
15-15-15 15-5-5	0.7	1.3	6.7
13-3-9 13-25-12	0.8	1.5	7.7
12-12-12 12-4-4	0.8	1.7	8.3
10-10-10 10-20-10	1.0	2.0	10.0
10-5-5 10-10-20	1.0	2.0	10.0
6-12-12 6-2-0	1.7	3.3	16.7
5-10-10 5-10-5	2.0	4.0	20.0

Example: If the N (nitrogen) recommendation is for 0.1 lb. N/100 sq. ft. and the fertilizer grade selected has a ratio of 18-6-12 (column 1), apply 0.6 lb. of this fertilizer per 100 sq. ft.

Note: 2 cups (1 pint) of dry fertilizer weighs about 1 pound.