



# Colorado MASTER GARDENER

## Calculating Fertilizer Application Rates

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### Steps to Calculate Fertilizer Application Rates

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

1. Calculate the size of the area to be fertilized.

$$\underline{\quad} \text{ ft. long} \times \underline{\quad} \text{ ft. wide} = \underline{\quad\quad} \text{ square feet}$$

*Example:*

$$\mathbf{40 \text{ feet}} \times \mathbf{100 \text{ feet}} = \mathbf{4000 \text{ square feet}}$$

2. Calculate the fertilizer application rate.

$$\frac{\underline{\quad} \text{ lb. nutrient per } \underline{\quad\quad} \text{ sq. ft.}}{\underline{\quad} \% \text{ nutrient in fertilizer}} = \underline{\quad} \text{ lb. fertilizer} / \underline{\quad\quad} \text{ sq. ft.}$$

*Example:*

$$\frac{\mathbf{1 \text{ lb. nutrient per } 1000 \text{ sq. ft.}}}{\mathbf{20\% \text{ nutrient in fertilizer}}}$$

$$\frac{\quad}{\mathbf{(.20)}} = \mathbf{5 \text{ lbs. fertilizer} / 1000 \text{ sq. ft.}}$$

3. Calculate the pounds of fertilizer to apply.

lawn or garden area	X	application rate	=	pound of fertilizer per garden or lawn
<u>    </u> sq. ft.		<u>    </u> pounds fertilizer		<u>    </u> pounds fertilizer
garden or lawn	X	<u>    </u> sq. ft.	=	<u>    </u> garden or lawn

*Example:*

<u>4000</u> sq. ft.	X	<u>5</u> pounds fertilizer	=	<u>20</u> pounds fertilizer
lawn		1000 sq. ft.		lawn

### 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 found in Table 1.



*Putting Knowledge to Work*

**Table 1. Amount of fertilizer to apply based on actual nitrogen recommendations.**

Nitrogen Rate:		0.1 lb. N / 100 sq. ft.	0.2 lb. N / 100 sq. ft.	1 lb. N / 1000 sq. ft.
Fertilizer Grade		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
<b>18-6-12</b>	<b>18-3-6</b>	<b>0.6</b>	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.

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