



several grades. The 1-1-1 ratio may be available in at least five grades, namely: 8-8-8, 10-10-10, 12-12-12, 15-15-15, and 20-20-20. When using different grades within a given ratio, you can apply exactly the same amounts of nutrients by varying the application rate.

If the suggested fertilizer grade is not available, you may substitute another grade. Try to use a grade as close to the recommended grade as possible. Some fertilizer grades are more readily available from dealers that supply fertilizer to farmers.

## Single-Nutrient Fertilizers for Particular Needs

Each of the primary plant nutrients can be supplied separately using single-nutrient fertilizer materials, and give just as good a crop response as when applied in mixed fertilizers. When only one plant nutrient is needed, a single-nutrient fertilizer should be purchased that contains only that particular nutrient. When more than one nutrient is needed, single-nutrient fertilizers can be used, but they must be applied by going over the land more than once.

## Buying Fertilizer

To obtain the maximum return on the money you invest in fertilizer, purchase only the plant nutrients that are recommended by soil test.

The cost of applying the required nutrients to the soil should be the basis for buying a particular fertilizer. Usually the fertilizer that costs the least per bag or ton is the most expensive when calculated on the basis of its plant nutrient content. Wise selection and use of fertilizers contributes to a more sustainable agriculture.

## Fertilizer Rate Calculations

### Example 1:

It has been recommended that 0.5 pounds of nitrogen per 1000 square feet be applied to a lawn. You could use a single-nutrient fertilizer, such as ammonium nitrate, which contains 33.5% N. How many pounds of this fertilizer will you need to apply?

*Solution:*

Divide the pounds of nutrient needed by the percentage of the nitrogen source and multiply the result by 100.

$$\frac{0.5 \text{ (pounds of N recommended)}}{33.5 \text{ (\% of N in ammonium nitrate)}} \times 100$$

= 1.5 pounds of ammonium nitrate per 1000 square feet

### Example 2:

The soil test report recommends that 3 pounds of  $K_2O$  per 1000 square feet be applied. You could use a single-nutrient fertilizer such as potassium chloride, which contains 60%  $K_2O$ . How many pounds of this fertilizer will you need to apply?

*Solution:*

Divide the pounds of nutrient needed by the percentage of the  $K_2O$  in the potash fertilizer and multiply by 100.

$$\frac{3 \text{ (pounds of } K_2O \text{ recommended)}}{60 \text{ (\% } K_2O \text{ in potassium chloride)}} \times 100$$

= 5 pounds of potassium chloride per 1000 square feet

### Example 3:

The soil test report recommends 1 pound of N, 2 pounds of  $P_2O_5$  and 1 pound of  $K_2O$  per 1000 square feet be applied. You are able to purchase a mixed fertilizer with a 1-2-1 ratio, such as a 15-30-15. How many pounds of this fertilizer will you need to apply?

*Solution:*

Divide the pounds of nutrient needed by the percentage of the nutrient in the fertilizer and multiply the result by 100.

$$\frac{1 \text{ (pounds of N recommended)}}{15 \text{ (\% N in 15-30-15)}} \times 100$$

= 6.6 pounds of 15-30-15 per 1000 square feet

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