

## Fertilizer Application

### Description

Properly apply fertilizers based on the specific needs of plants, particularly as identified by appropriate soil or plant tissue tests.

### Basic Practice Guidelines

1. Apply fertilizer when needed to achieve a clearly defined objective such as increasing shoot growth, root growth, flowering or fruiting; establishing newly planted trees and shrubs; enhancing foliage color and plant appearance; or correcting or preventing nutrient deficiencies.
2. Because manufactured fertilizers can be relatively high in nutrient content, it is critical to follow the manufacturer’s directions, using the minimum amount recommended. Over-application “burns” leaves, may lead to water pollution, thatch buildup and excessive mowing.
3. Only apply nutrients the plants can use. Fertilizer labels identify product contents in terms of ratios that indicate percentage of ingredients by product weight.
4. When practical and appropriate, base fertilizer application on soil analysis. Be aware that at many new home sites, “basement” topsoil may make obtaining representative soil samples challenging.
5. Prior to fertilizing, modify soil as needed to improve nutrient uptake.
6. Utilize split applications of slow-release (controlled-release) fertilizer forms such as IBDU, sulfur-coated urea and natural organic-based fertilizers (not to be confused with raw manure) to minimize the risk of nutrients leaching into groundwater or running off in surface water. When properly applied, other forms of fertilizer can also be safely used, provided that over-watering and over-fertilization do not occur.
7. When applying fertilizer, broadcast it uniformly over the targeted area of the landscape.
8. If possible, properly irrigate turf following fertilization to help grass utilize applied nutrients and to minimize the potential for fertilizer burn. Care should be taken to avoid excessive irrigation that would result in fertilizer being washed away. Similarly, avoid application of fertilizer immediately prior to heavy rainfall.
9. Fall is the best time of year to fertilize bluegrass lawns to promote a healthier turf before winter, a healthier root system, and turf that greens up earlier in the spring without excessive top growth. Fertilize with nitrogen sometime during late September to early November

BMP Type			
Design			
Installation			
Maintenance/Operations		X	
Green Industry Relevance			
ASLA		GCC	X
ALCC	X	ISA	X
CALCP	X	RMSGGA	X
CGGA	X	WFC	
CNA	X		

along the Front Range, and earlier in the mountains to ensure nitrogen is applied two to three weeks before the ground freezes.

10. Over-application of nitrogen fertilizer in April may cause grass to grow too fast before roots can support the growth, resulting in less heat tolerance.
11. Recommendations for fertilizer application vary among industry professionals. CSU Cooperative Extension’s fertilizer recommendations for established Colorado lawns are provided in the table below. Site-specific conditions should also be considered when determining the need for fertilizer.

Turfgrass Species	<b>CSU Cooperative Extension Recommendations for Nitrogen Application Rate in Pounds/1,000 sq. ft.</b>				
	Mid-March to April <sup>A,B</sup>	May to Mid-June <sup>B</sup>	July to Early August <sup>B</sup>	Mid-August to Mid-September <sup>B,C</sup>	Early October to Early November <sup>B,D</sup>
High Maintenance Bluegrass Ryegrass	0.5-1	1	Not Required	1	1-2 (optional)
Low Maintenance Bluegrass	0.5	0.5-1	Not Required	1	1 (optional)
Tall Fescue,	0.5	0.5-1	Not Required	1	1 (optional)
Fine Fescue	0.5	0.5-1	Not Required	0.5-1	None
Buffalograss, Blue Grama, Bermudagrass	None	0.5-1	0.5-1	None	None

Notes:

<sup>A</sup>The March-April nitrogen application may not be needed if prior fall fertilization was completed. If spring green-up and growth is satisfactory, delay fertilizing to May or June.

<sup>B</sup>Application rates may be reduced by 1/4 to 1/3 when grass clippings are left on the lawn.

<sup>C</sup>On very sandy soils, do not fertilize turf after late September to prevent nitrogen from leaching into groundwater during the winter months.

<sup>D</sup>Apply when the grass is still green and at least 2-3 weeks prior to the ground freezing. Optional nitrogen applications are indicated for use where higher quality or heavily-used turf is present.

Source: T. Koski and V. Skinner, CSU Cooperative Extension, 2003.

12. As a general rule, the Colorado Nursery Association recommends waiting until the second growing season to fertilize ornamental (woody) plants. Commercial fertilizer should not be used in the backfill where it comes in direct contact with the roots. After the plant becomes established, the proper use of fertilizer is beneficial to the health, vigor, and vitality of the plant.
13. Correcting iron deficiencies in soils is difficult. For best results, choose plants adapted to alkaline soils.
14. Keep fertilizer off of streets, sidewalks and driveways to prevent water pollution. Fertilizer that inadvertently falls on impervious surfaces should be swept back onto the lawn.
15. Maintain a buffer zone around wells or surface waterbodies where fertilizers are not applied to minimize pollution. Consult the fertilizer product label and local regulations and landscape ordinances for appropriate distances. Research in this area is limited; however, CSU Cooperative Extension recommends a buffer of 6 to 10 feet for mowed turf areas.

### ***Special Regional or Industry Considerations/Adaptations***

1. Phosphorus can be beneficial to soils along the Front Range and mountains of Colorado, particularly in sandy soils. Phosphorous does not move out of the soil like nitrogen, so constant additions are unnecessary. Phosphorus is commonly overused and application should always be based on soil tests. Phosphorus washing into surface waterbodies leads to excessive algae growth in state waterbodies.
2. Soils along the Front Range and in many mountainous areas contain abundant potash, so it's unnecessary to add more.
3. In areas with sandy soils, it is particularly important to avoid over-application of fertilizer that could leach into groundwater. These areas may be particularly well suited to slow-release fertilizer forms and conservative application rates.

### ***Key References***

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