

Nutrient Management Plan

Tidewater CC/Virginia Beach Campus

Prepared For:

Bert Thompson
121 College Place
Norfolk, VA 23510
757-822-1715

Prepared By:

Christy F. Smith
3160 Jacobia Lane
Cape Charles, VA 23310
757-678-6129

Certification Code: 297

Total Acreage: 32.5 ac

The purpose of this Nutrient Management Plan is to ensure minimum movement of nitrogen and phosphorus from the specified area of application to surface and groundwaters where they can potentially have a detrimental effect on water quality as well as ensuring that plants have optimum soil nutrient availability for good productivity and quality. By following this soil test based plan you are helping to protect local waters and the Chesapeake Bay.

If you have questions, please contact your plan writer, local Virginia Cooperative Extension



Nutrient Management Plan for: Tidewater CC/Virginia Beach Campus

Landowner Information	
Company Name	<i>Tidewater CC/Virginia Beach Campus</i>
Customer Name	<i>Bert Thompson</i>
Mailing Address	<i>121 College Place</i>
City State Zip	<i>Norfolk, VA 23510</i>
Phone	<i>757-822-1715</i>
Email	<i>bthompson@tcc.edu</i>

Planners Informaiton	
Planner Name	<i>Christy F. Smith</i>
Mailing Address	<i>3160 Jacobia Lane</i>
City State Zip	<i>Cape Charles, VA 23310</i>
Phone	<i>757-678-6129</i>
Fax	<i>757-331-3957</i>
Email	<i>christy@smithagronomic.com</i>
Certification Code	<i>297</i>

Location Information	
Physical Address	<i>1700 College Crescent</i>
City State Zip	<i>Virginia Beach, VA 23453</i>
Coordinates	<i>36.78523</i>
Please Use NAD 83 Deg Min Sec	<i>-76.10035</i>
VAHU6 Watershed Code	<i>AS14</i>
County	<i>Virginia Beach</i>

Square Footage	
Total	<i>32.5 ac</i>
Area 1	<i>849,420 sq ft</i>
Area 2	<i>566,280 sq ft</i>
Area 3	
Area 4	

Plan Start Date	<i>5/7/24</i>
Plan End Date	<i>5/6/27</i>

Planner Signature	<i>Christy F. Smith</i>
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Narrative

Tidewater Community College (TCC) agrees to comply with all the requirements set forth in the Nutrient Management Training and Certification Regulations, 4 VAC 50-85 et seq., and to follow recommendations for turf fertilization and management as described in the Virginia Nutrient Management Standards and Criteria, Revised July 2014. This includes implementing the Department of Conservation and Recreation's approved Nutrient Management Plan and maintaining fertilization records. All nutrient applications performed by TCC staff shall comply with the provisions of this Nutrient Management Plan upon receipt of the approved plan. Soil testing is recommended at least once every three years. This plan is effective for 3 years, expiring 5/6/2027 or until any major renovation or major changes to maintenance practices occur which affects the fertilized/lime areas.

TCC is a two-year higher education institution in South Hampton Roads with campuses in Norfolk, Chesapeake, Portsmouth, and Virginia Beach. TCC recognizes the importance of nutrient management as a fundamental way to protect water quality.



Fertilized turf is comprised of a mix of warm season and cool season grass but is managed to encourage warm season establishment and growth. Bermudagrass is dominant in turf areas adjacent to recent construction. TCC does not overseed warm season turf areas. The primary sources of irrigation water at each campus originate from onsite wells and/or stormwater collection basins. Irrigation water is used to maintain the turf areas and/or landscape beds adjacent to high profile areas on each campus. Landscape beds are located on each campus but do not receive any additional nutrients aside from what is applied to the adjacent turf. The TCC grounds are less intensively managed, receiving no more than two fertilizer applications annually. Within the boundaries of each campus, TCC maintains turf areas that do not receive fertilization or irrigation. The unfertilized portions of each campus are not included in this plan.

Nutrient applications are prohibited on frozen/snow covered ground.

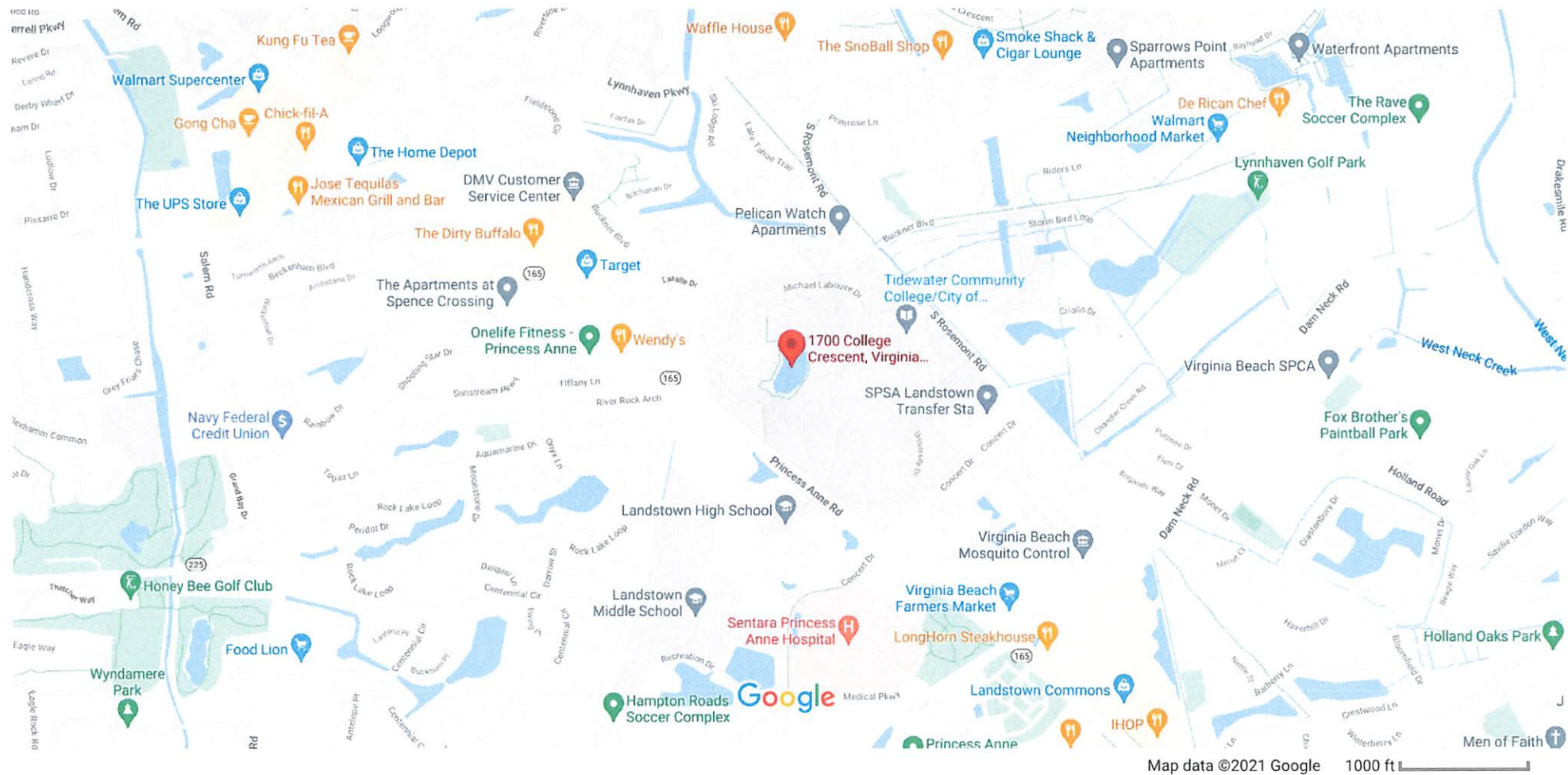
The Virginia Beach Campus of TCC consists of 170 acres but only 32.5 acres is fertilized. Two tons of lime/acre is needed on VB 1. The Virginia Beach Campus includes Acredale soil type which is environmentally sensitive. Special attention should be given to the timing of fertilizer applications to avoid nutrient loss due to flooding and seasonal high water tables.



Imagery ©2021 City of Virginia Beach, Commonwealth of Virginia, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 Google 500 ft

-  Fertilized Area 1 VBI 849,420 sq.ft.
-  Fertilized Area 2 VBZ 566,280 sq.ft.

Google Maps 1700 College Crescent



Nutrient Application Worksheet

NAME:		Bert Thompson					Management Area:			VB 1						
Prepared:		5/7/24					Area (sq ft):	849420		Species:	Bermuda					
Expires:		5/6/27														
Total Nutrient Needs	Application Month/Day	Analysis	# of Apps	Application Interval	Fertilizer Type	Fertilizer Description	Rate per 1000ft ²	lbs or oz	%Slow Release N	Total NPK lbs/1000ft ²			Gypsum	Lime	Total Product per App. (lbs or oz)	
Nitrogen		N - P - K								N - P ₂ O ₅ - K ₂ O				2 T/acre		
1.4	5/1	20 - 14 - 14	1	30 days	dry	granular	3.50	lbs	0%	0.70	0.49	0.49			2973	
Phosphorus	9/1	20 - 14 - 14	1	30 days	dry	granular	3.50	lbs	0%	0.70	0.49	0.49			2973	
1		- - -								0.00	0.00	0.00			0	
Potassium		- - -								0.00	0.00	0.00			0	
1		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
		- - -								0.00	0.00	0.00			0	
							Total		#####	1.40	0.98	0.98				
Notes:		N Recommendation Range and Soil Test Ratings								1.4	1	1				

Virginia Cooperative Extension

Soil Test Report

Questions? Contact:
 Northampton County Office
 16392 Courthouse Rd
 P.O. Box 457
 Eastville, VA 23347
 757-678-7946

Virginia Tech Soil Testing Laboratory
 145 Smyth Hall (0465)
 185 Ag Quad Ln
 Blacksburg, VA 24061
 www.soiltest.vt.edu

SEE NOTES:
1 3
 at www.soiltest.vt.edu under Report Notes

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SMITHAG AND ENVIRONMENTAL, INC
 3160 JACOBIA LN
 CAPE CHARLES, VA 23310

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SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VB1	TCC									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	19	224	1648	353	3.4	10.2	0.3	27.9	0.3	
Rating	M-	H	H-	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.3	5.82	9.3	37.0	63.0	44.3	15.6	3.1	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
3.75	AG

Fertilizer, lb/A		
N	P2O5	K2O
See	90	0
Comment		

635. No further crop response is expected when applying more than 2 to 3 T/A of lime in one application. Therefore, apply half of the total lime now, and the remainder in 6 to 12 months.

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

123. P2O5 and K2O recommendations are for single applications made every 3 to 4 years. After this time, soils should be re-tested.

991. "Explanation of Soil Tests, Note 1" and other referenced notes are viewable at www.soiltest.vt.edu under Report Notes.

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 3160 JACOBIA LN
 CAPE CHARLES, VA 23310

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SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
VB 2	4 BOYS									III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	27	281	2272	367	2.4	8.2	0.3	20.2	0.5	
Rating	M	H+	VH	VH	SUFF	SUFF	SUFF	SUFF	SUFF	

Analysis	Soil pH	Buffer Index	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	6.3	6.30	8.1	7.3	92.7	69.7	18.6	4.4	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
0	

Fertilizer, lb/A		
N	P2O5	K2O
See Comment	80	0

825. If stand contains less than 25 percent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

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Standards and Criteria

Section VI. Turfgrass Nutrient Recommendations for Home Lawns, Office Parks, Public Lands and Other Similar Residential/Commercial Grounds

Definitions

For the purposes of this section, the following definitions, as presented by the Association of American Plant Food Control Officials (AAPFCO), apply:

“Enhanced efficiency fertilizer” describes fertilizer products with characteristics that allow increased plant nutrient availability and reduce the potential of nutrient losses to the environment when compared to an appropriate reference product.

“Slow or controlled release fertilizer” means a fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. A slow or controlled release fertilizer must contain a minimum of 15 percent slowly available forms of nitrogen.

“Water soluble nitrogen”, “WSN” and “readily available nitrogen” means: Water soluble nitrogen in either ammonical, urea, or nitrate form that does not have a controlled release, or slow response.

Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

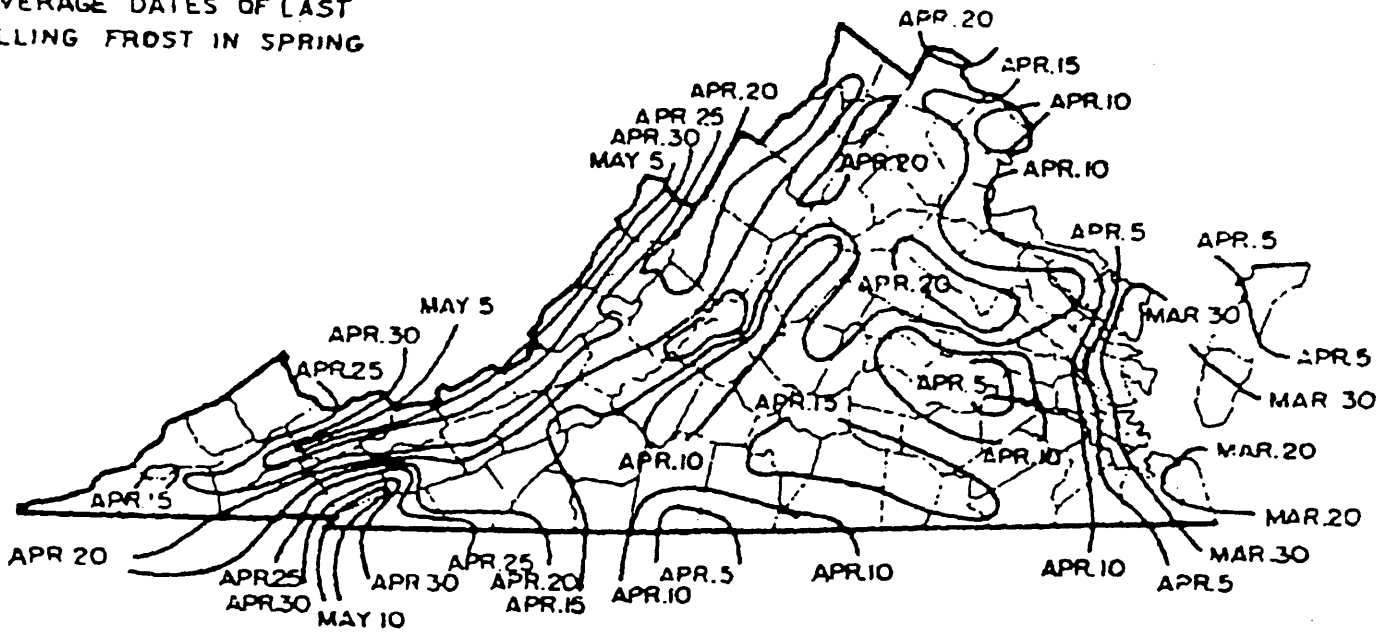
A nitrogen fertilization schedule weighted toward fall application is recommended and preferred for agronomic quality and persistence of cool season turfgrass; however, the acceptable window of applications is much wider than this for nutrient management. The nutrient management recommended application season for nitrogen fertilizers to cool season turfgrasses begins six weeks prior to the last spring average killing frost date and ends six weeks past the first fall average killing frost date (see Figures 6-1 & 6-2).

Applications of nitrogen during the intervening late fall and winter period should be avoided due to higher potential leaching or runoff risk, but where necessary, apply no more than 0.5 pounds per 1,000 ft² of water soluble nitrogen within a 30 day period. Higher application rates may be used during this late fall and winter period by using materials containing slowly available sources of nitrogen, if the water soluble nitrogen contained in the fertilizer does not exceed the recommended maximum of 0.5 pounds per 1,000 ft² rate. Do not apply nitrogen or phosphorus fertilizers when the ground is frozen.

The acceptable nitrogen fertilizer application season for non-overseeded warm season turfgrass begins no earlier than the last spring average killing frost date and ends no later than one month prior to the first fall average killing frost date (see Figures 6-1 & 6-2).

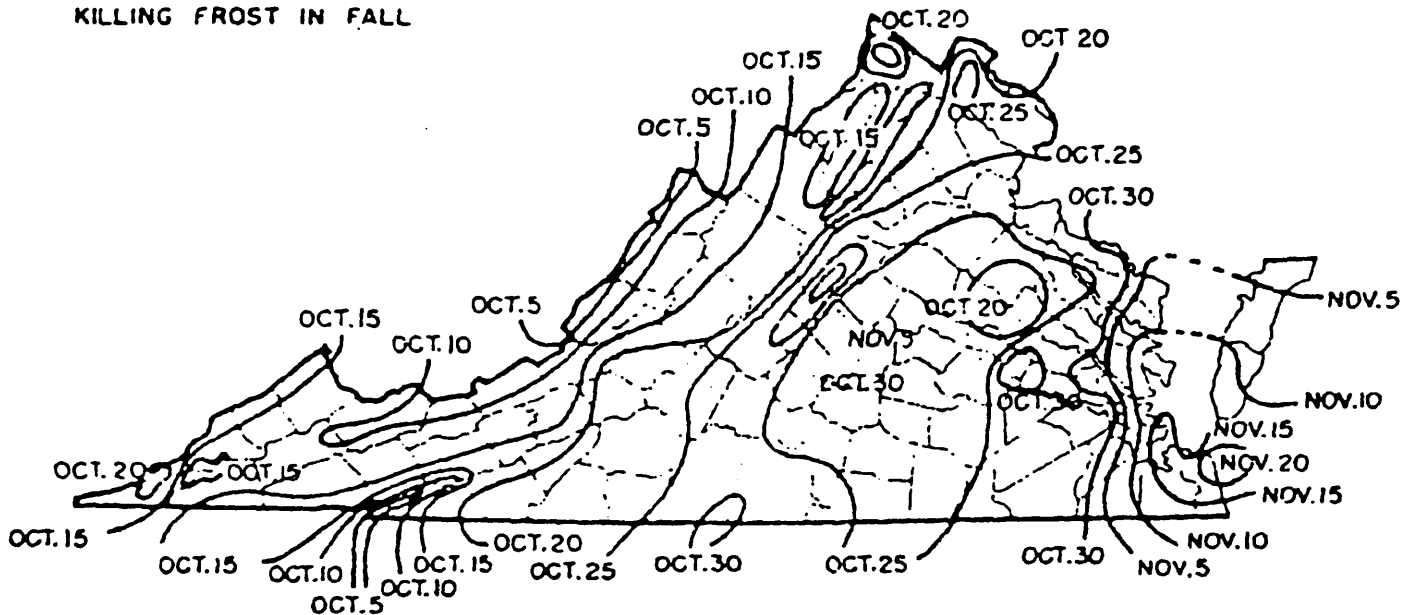
VIRGINIA

AVERAGE DATES OF LAST
KILLING FROST IN SPRING



VIRGINIA

AVERAGE DATES OF FIRST
KILLING FROST IN FALL



Recommendations for Establishment of Turf

These recommendations are for timely planted turfgrass, that is, the seed or vegetative material (sod, plugs, and /or sprigs), are planted at a time of the year when temperatures and moisture are adequate to maximize turfgrass establishment. These recommended establishment periods would be late summer to early fall for cool-season turfgrasses and late spring through mid-summer for warm-season turfgrasses.

Nitrogen Applications

At the time of establishment, apply no more than 0.9 pounds per 1,000 ft² of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft² of total nitrogen for warm season grasses, using a material containing slowly available forms of nitrogen, followed by one or two applications beginning 30 days after planting, not to exceed a total of 1.8 pounds per 1,000 ft² total for cool season grasses and 2.0 pounds per 1,000 ft² for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft² within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

<u>Soil Test Level</u>	<u>Nutrient Needs (lbs /1000 ft²) *</u>	
	<u>P₂O₅</u>	<u>K₂O</u>
L	3-4	2-3
M	2-3	1-2
H	2-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range.

Per Application Rates

Do not apply more than 0.7 pounds of water soluble nitrogen per 1,000 ft² within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft² within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft² within a 30 day period. Lower per application rates of water soluble nitrogen sources or use of slowly available nitrogen sources should be utilized on very permeable sandy soils, shallow soils over fractured bedrock, or areas near water wells.

Annual Application Rates for Home Lawns and Commercial Turf

Up to 3.5 pounds per 1,000 ft² of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft² may be applied annually to warm season grass species using 100 percent water soluble nitrogen sources. Lower rates of nitrogen application may be desirable on those mature stands of grasses that require less nitrogen for long-term quality. As a result, lower application rates will probably be more suited to the fine leaf fescues (hard fescue, chewings fescue, creeping red fescue, and sheep fescue) and non-overseeded zoysiagrass. Lower rates should also be used on less intensively managed areas.

Use of Slowly Available Forms of Nitrogen

For slow or controlled release fertilizer sources, or enhanced efficiency fertilizer sources, no more than 0.9 pounds of nitrogen per 1,000 ft² may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft² may be applied to warm season grasses within a 30 day period. Provided the fertilizer label guarantees that the product can be used in such a way that it will not release more than 0.7 pounds of nitrogen per 1,000 ft² in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft² may be applied in a single application. Additionally, total annual applications shall not exceed 80 percent of the annual nitrogen rates for cool or warm season grasses.

Phosphorus and Potassium Nutrient Needs (Established Turf)

Apply phosphorus (P₂O₅) and potassium (K₂O) fertilizers as indicated necessary by a soil test using the following guidelines:

<u>Soil Test Level</u>	<u>Nutrient Needs (lbs /1000 ft²) *</u>	
	<u>P₂O₅</u>	<u>K₂O</u>
L	2-3	2-3
M	1-2	1-2
H	0.5-1	0.5-1
VH	0	0

* For the lower soil test level within a rating, use the higher side of the range and for higher soil test level within a rating use the lower side of the recommendation range. (For example the recommendation for a P₂O₅ soil test level of L- would be 3 pounds per 1,000 ft².)

Do not use high phosphorus ratio fertilizers such as 10-10-10 or 5-10-10, unless soil tests indicate phosphorus availability below the M+ level.

