Nutrient Management Plan

Tidewater CC/Chespeake 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: 8 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 quailty. 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

DCR
Virginia Department of Conservation & Recreation

Nutrient Management Plan for:
Tidewater CC/Chespeake Campus

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

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

Location Information	
Physical Address	*1428 Cedar Road*
City State Zip	*Chesapeake, VA 23322*
Coordinates	*36.72741*
Please Use NAD 83 Deg Min Sec	*-76.29561*
VAHU6 Watershed Code	*JL51*
County	*Chesapeake*

Square Footage	
Total	*348,480 sq ft/8 ac*
Area 1	*270,072 sq ft*
Area 2	*78,408 sq ft*
Area 3	
Area 4	

Plan Start Date	*7/1/21*
Plan End Date	*7/1/24*
Planner Signature	Christy F. Smith

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 7/1/2024 or until any major renovation or major changes to maintenance practices occur which effects 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 dominate in turf areas adjacent to recent construction. TCC does not overseed warm season turf areas. The primary sources of irrigation water at each campus originates 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.

The Chesapeake Campus of TCC consists of 36.3 acres but only 8 acres is fertilized. The Chesapeake Campus includes Tomotley 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.

Nutrient applications are prohibited on frozen/snow covered ground.

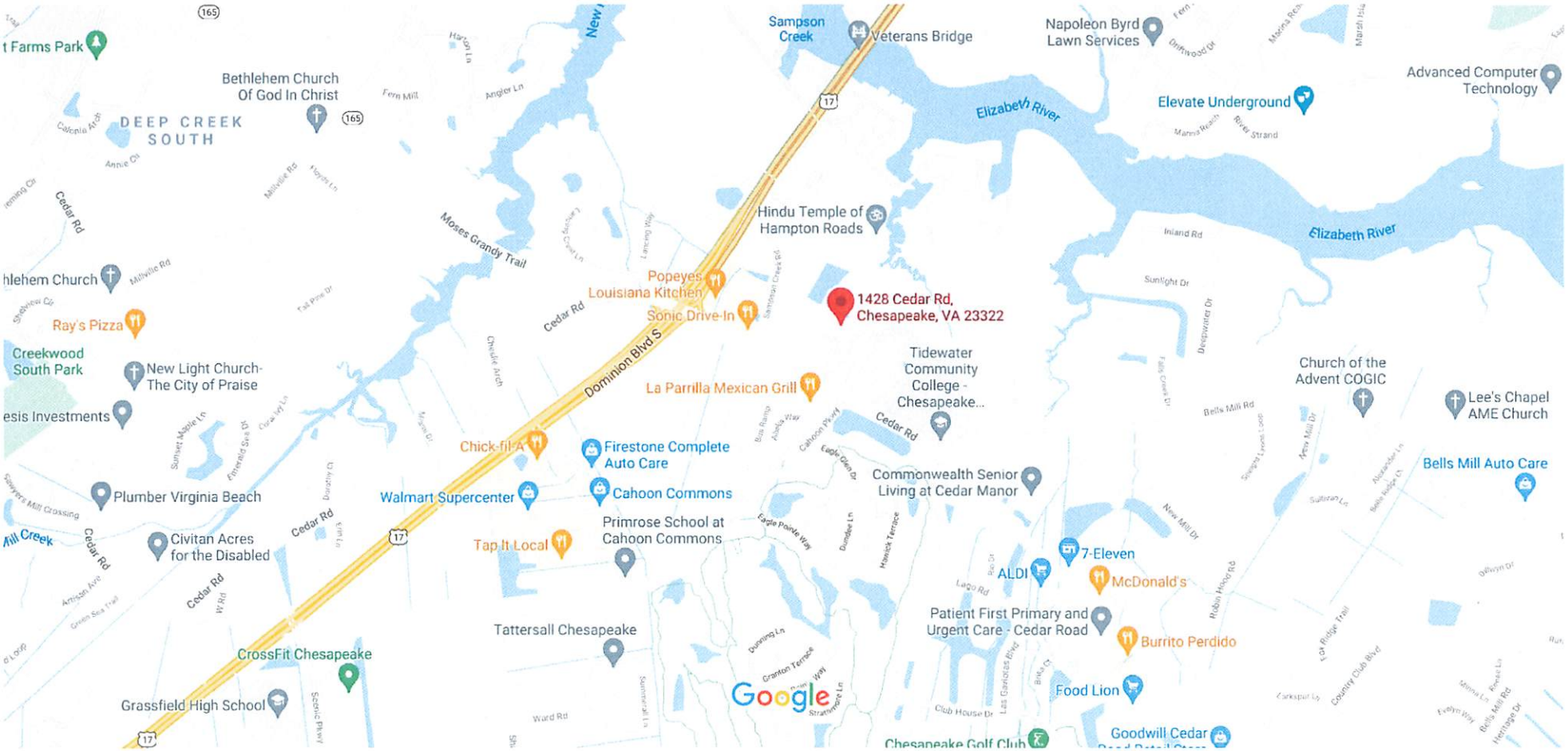
Google Maps 1428 Cedar Rd

Imagery ©2021 Commonwealth of Virginia, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

fertilized area 1/270,072 ft²

fertilized area 2/78408 ft²

Google Maps 1428 Cedar Rd



Nutrient Application Worksheet

NAME:	**Bert Thompson**		**Management Area:**	**1**		
Prepared:	**7/1/21**		**Area (sq ft):**	**270072**	**Species:**	**Bermuda**
Expires:	**7/1/24**					

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_2O_5 - K_2O		2T/acre	
1.4	5/1	20 - 14 - 28	1	30 days	dry	granular	3.50	lbs	0%	0.70 - 0.49 - 0.98			945
Phosphorus	9/1	20 - 14 - 28	1	30 days	dry	granular	3.50	lbs	0%	0.70 - 0.49 - 0.98			945
1		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
2		- -								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
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		- -								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 - 1.96			
				N Recommendation Range and Soil Test Ratings						1.4 1 2			
Notes:													

Nutrient Application Worksheet

NAME:	**Bert Thompson**	**Management Area:**	2		
Prepared:	**7/1/21**	**Area (sq ft):**	**78408**	**Species:**	**Bermuda**
Expires:	**7/1/24**				

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_2O_5 - K_2O			
1.4	5/1	20 - 20 - 7	1	30 days	dry	granular	3.50	lbs	0%	0.70 - 0.70 - 0.25			274
Phosphorus	9/1	20 - 20 - 7	1	30 days	dry	granular	3.50	lbs	0%	0.70 - 0.70 - 0.25			274
1.5		- -								0.00 - 0.00 - 0.00			0
Potassium		- -								0.00 - 0.00 - 0.00			0
.5		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
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		- -								0.00 - 0.00 - 0.00			0
		- -								0.00 - 0.00 - 0.00			0
							Total		######	1.40 - 1.40 - 0.49			
				N Recommendation Range and Soil Test Ratings						1.4 / 1.5 / 0.5			

Notes:

Soil Test Summary

Customer Name:	Bert Thompson
Testing Lab:	Virginia Tech
Sample Date:	6/23/2021
Planner Name	Christy F. Smith
Certification Number	297

Managed Area ID	AREA (sq ft)	Soil pH	Buffer pH	Lab Test P	VT (H/M/L)	Lab Test K	VT (H/M/L)	Species
Chesapeake 1	270,072	5.2	6.02	45	H-	90	M-	Bermuda
Chesapeake 2	78,408	6	6.25	25	M	177	H-	Bermuda

Notes:

Two tons/acre lime is needed on Chesapeake 1 at this time.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Chesapeake City Office
Agriculture Dept.
310 Shea Drive
Chesapeake, VA 23322-5597
757-382-6348

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

OWNER
SMITHAG
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

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
CHES1	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	45	90	717	147	2.3	5.0	0.3	25.1	0.1	
Rating	H-	M-	L+	H-	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	5.2	6.02	4.8	47.3	52.7	37.6	12.7	2.4	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
2.5	AG

Fertilizer, lb/A		
N	P205	K20
See Comment	0	90

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.

Virginia Cooperative Extension
Soil Test Report

Questions? Contact:
Chesapeake City Office
Agriculture Dept.
310 Shea Drive
Chesapeake, VA 23322-5597
757-382-6348

Virginia Tech Soil Testing Laboratory
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SEE NOTES:
1 3
at www.soiltest.vt.edu under Report Notes

OWNER
SMITHAG
3160 JACOBIA LN

CAPE CHARLES, VA 23310

COPY FOR

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
CHES2	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	25	177	1776	181	2.4	4.6	0.3	15.8	0.3	
Rating	M	H-	H	H	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	6.0	6.25	6.3	14.2	85.9	70.4	11.8	3.6	

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Native or Unimproved Pasture (42)

Lime, TONS/AC	
Amount	Type
1	AG

Fertilizer, lb/A		
N	P205	K20
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.

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.

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.

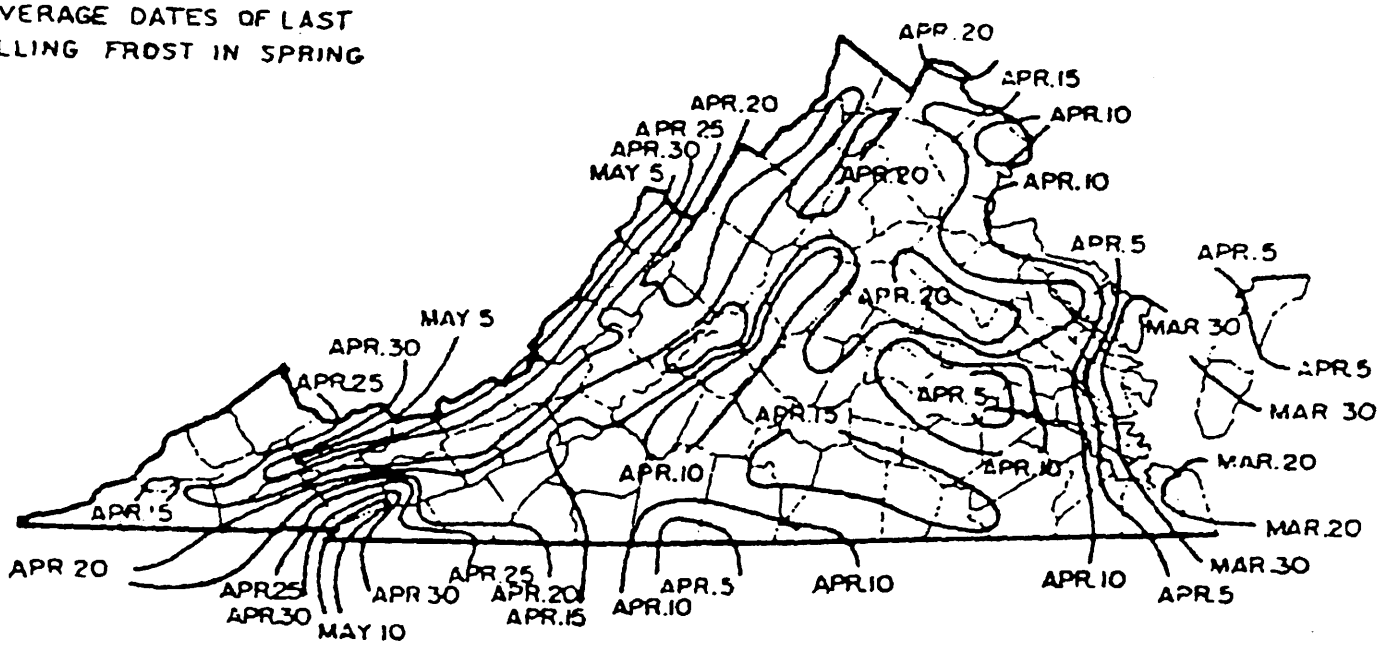
Recommended Season of Application For Nitrogen Fertilizers - Applies to all Turf

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 ft^2 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 ft^2 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).

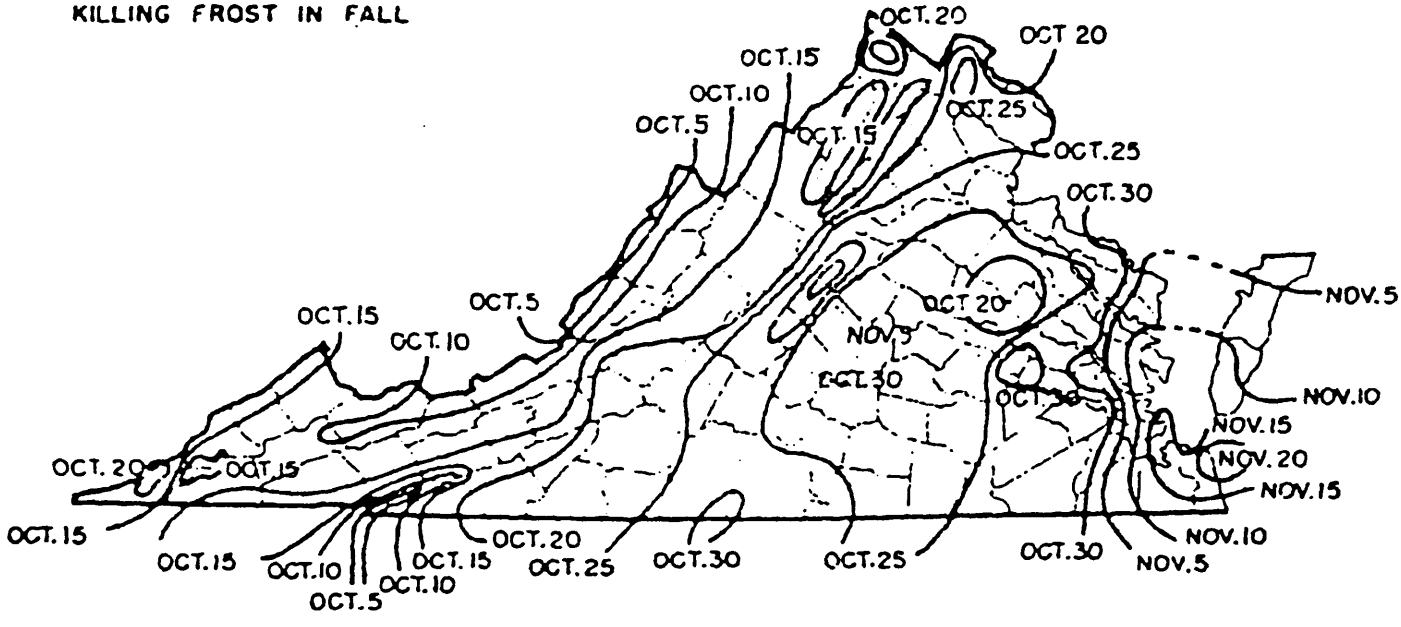
VIRGINIA

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 ft^2 of total nitrogen for cool season grasses or 1.0 pounds per 1,000 ft^2 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 ft^2 total for cool season grasses and 2.0 pounds per 1,000 ft^2 for warm season grasses for the establishment period. Applications of WSN cannot exceed more than 0.7 pounds per 1,000 ft^2 within a 30 day period.

Phosphorus and Potassium Recommendations for Establishment

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
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 ft^2 within a 30 day period. For cool season grasses, do not apply more than 0.9 pounds of total nitrogen per 1,000 ft^2 within a 30 day period. For warm season grasses, do not apply more than 1.0 pounds of total nitrogen per 1,000 ft^2 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 ft^2 of nitrogen may be applied annually to cool season grass species or up to 4 pounds per 1,000 ft^2 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 ft^2 may be applied to cool season grasses within a 30 day period and no more than 1.0 pounds of nitrogen per 1,000 ft^2 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 ft^2 in a 30 day period, no more than 2.5 pounds of nitrogen per 1,000 ft^2 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 (P_2O_5) and potassium (K_2O) fertilizers as indicated necessary by a soil test using the following guidelines:

Soil Test Level	Nutrient Needs (lbs /1000 $ft^{2)}$ *	
	P_2O_5	K_2O
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 P_2O_5 soil test level of L- would be 3 pounds per 1,000 ft^2.)

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.

Fertilizer Application Records

Customer Information		Management Area Information	
Name:	Bert Thompson	Management Area ID:	
Address:	1428 Cedar Road	Management Area Size:	
	Chesapeake, VA 23322	Plant Species:	
		Notes:	
Phone #:	757-822-1715		

Date (M/D/Y)	Supervisor/Applicator	Weather Conditions			Fertilizer Analysis	Rate	Amount Fertilizer Used	Application Equipment Used
		Temp	Wind Speed	Precip				

When was the last time your fertilizer equipment was calibrated???
For information on calibration see Chapter 10 of the "Urban Nutrient Management Handbook".
Available for download at http://pubs.ext.vt.edu/430/430-350/430-350.html