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Tobacco

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Flue-Cured Tobacco Variety Information for 1994

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Seed of four new varieties will be commercially available to tobacco producers in 1994. Oxford 940, Reams M1, and Speight G-126 met the chemical and physical standards in the 1992 Regional Variety Evaluation Program. K 730 passed the program in 1989. A limited supply of Reams M1 was available to producers in 1993. Growers are advised to plant only a limited acreage of any new variety until more information and experience is available from a wider range of soil and climatic conditions. Brief descriptions of the new varieties are given below.

K 730 (tested as NK 730) was developed by Northrup King Seed Company from a cross of McNair 926 by 80241 (an experimental line). The variety is resistant to root knot nematode and has a high level of resistance to Granville wilt but a low resistance to black shank.

Oxford 940 (tested as NC 9140 USDA) was developed cooperatively by the Agricultural Research Service USDA, Oxford, NC and the North Carolina Agricultural Research Service from a cross of Speight G-28 by Coker 347. Oxford 940 has a high level of resistance to both races of black shank and moderate resistance to Granville wilt.

Reams M1 was developed by Reams Seed Company from a cross of Speight G-28 by Reams 158. Reams M1 has moderate levels of resistance to black shank and Granville wilt.

Speight G-126 was developed by Speight Seed Farms from a cross of K 326 by Speight G-96. The variety is resistant to root knot nematode and is considered to have moderate resistance to both black shank and Granville wilt.

All four varieties are susceptible to tobacco mosaic virus.

Information is provided for widely grown and recently released varieties in Tables 1-5 of this publication. Results of 12 varieties included in the 1993 Virginia Official Variety Tests are shown in Table 1. These tests were conducted in Halifax (Wayne Palmer farm), Pittsylvania (Kenneth Hutcherson farm), and Nottoway (Southern Piedmont Agricultural Research and Extension

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Table 1. Virginia Flue-Cured Official Variety Test Results: Yield, Value, Price, Grade Index, 1993.[1]

Variety	State Average Yield lbs/A	State Average Price $/cwt	So Pied Ag Res & Ext Ctr Yield lbs/A	So Pied Ag Res & Ext Ctr Price $/cwt	Halifax County Yield lbs/A	Halifax County Price $/cwt	Pittsylvania County Yield lbs/A	Pittsylvania County Price $/cwt
K 326	3309	173	3436	173	2395	162	4095	185
K 346	2946	166	3061	164	2039	155	3738	180
K 394	3053	173	3164	163	2247	171	3748	184
K 730	**3054**	**168**	**3233**	**162**	**2114**	**164**	**3814**	**179**
NC 27 NF	3077	170	3028	161	2610	167	3594	182
NC 37 NF	3054	172	2911	163	2436	172	3816	182
Ox 940	**3154**	**164**	**3244**	**160**	**2047**	**155**	**4170**	**178**
Reams M1	**3067**	**168**	**3219**	**165**	**2109**	**158**	**3873**	**182**
RG 8	3136	167	3410	165	2140	155	3857	180
RG 89	2837	168	2824	162	2094	163	3593	180
Sp G-126	**2870**	**160**	**3154**	**162**	**1995**	**140**	**3460**	**178**
VA 116	3032	173	3433	169	1908	167	3755	184

Variety	State Average Value $/A	State Average Grade Index[2]	So Pied Ag Res & Ext Ctr Value $/A	So Pied Ag Res & Ext Ctr Grade Index	Halifax County Value $/A	Halifax County Grade Index	Pittsylvania County Value $/A	Pittsylvania County Grade Index
K 326	5798	62	5927	62	3889	43	7579	82
K 346	4977	58	5023	52	3168	48	6740	75
K 394	5293	63	5175	46	3838	63	6866	80
K 730	**5169**	**58**	**5190**	**53**	**3463**	**47**	**6854**	**74**
NC 27 NF	5254	58	4876	49	4363	42	6524	82
NC 37 NF	5290	62	4742	50	4199	55	6930	80
Ox 940	**5242**	**49**	**5158**	**39**	**3180**	**35**	**7388**	**72**
Reams M1	**5235**	**59**	**5324**	**65**	**3342**	**36**	**7040**	**77**
RG 8	5296	55	5614	54	3327	33	6948	78
RG 89	4815	55	4566	45	3417	43	6461	77
Sp G-126	**4692**	**46**	**5109**	**44**	**2788**	**23**	**6178**	**70**
VA 116	5300	62	5814	53	3190	52	6897	80

New varieties for 1994 are in bold.

[1]Tests were conducted in Nottoway (So. Pied. Ag. Res. and Ext. Ctr.), Halifax (Wayne Palmer farm), and Pittsylvania (Kenneth Hutcherson farm) counties in 1993.

[2]Grade index is a numerical quality rating based on government grade. High ratings are best.

Table 2. Virginia Flue-Cured Tobacco Official Variety Test Results by Years, Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA.

	Yield, lbs/A						Value, $/A					Price, $/cwt				
Variety	1989	1990	1991	1992	1993	Avg[1]	1989	1990	1991	1992	1993	1989	1990	1991	1992	1993
C 176	3027	3096	3320	2635	3133	3042	5134	5445	5628	4623	4474	170	176	169	175	144
C 319	3225	2915	3205	2502	2683	2906	5556	5111	5555	4446	4385	172	175	173	178	163
C 371 Gold	3241	3073	3367	2854	3507	3208	5552	5382	5934	5041	5992	172	175	176	177	171
K 149	3375	2992	3283	2485	2733	2974	5708	5196	5789	4388	4401	169	174	176	177	161
K 326	3595	3421	3518	2874	3436	3369	6123	6084	6181	5056	5927	170	178	176	176	173
K 346	3336	3004	3263	2543	3061	3041	5735	5267	5763	4511	5023	172	175	177	177	164
K 358	3429	3047	3340	2691	3508	3203	5890	5391	5826	4760	5699	172	177	174	176	163
K 394	3496	3569	3489	2699	3164	3283	5890	6214	6073	4729	5175	168	174	174	175	163
K 730	----	----	**3107**	**2500**	**3233**	**2947**	----	----	**5396**	**4361**	**5190**	---	---	**174**	**174**	**162**
McN 944	3401	2961	3313	2430	3044	3030	5751	5143	5778	4261	4909	169	174	174	175	161
NC 27 NF	3624	2764	3539	2658	3028	3123	6191	4841	6131	4618	4876	171	175	173	174	161
NC 37 NF	3397	3145	3024	2635	2911	3022	5836	5466	5269	4587	4742	172	174	174	174	163
NC 82	3224	2612	3331	2352	3001	2904	5479	4562	5807	4048	5032	170	174	174	172	168
NC 567	3373	3048	3014	2623	3240	3060	5782	5334	5255	4615	5200	171	175	174	176	161
NC 729	----	----	3583	2478	2993	3018	----	----	6218	4354	4895	---	---	174	175	164
Ox 940	----	----	----	----	**3244**	----	----	----	----	----	**5158**	---	---	---	---	**160**
Reams 158	3091	2994	3462	2424	2948	2984	5203	5159	6112	4163	4905	168	172	176	171	166
Reams 713	----	----	2949	2266	2814	2676	----	----	5141	3956	4756	---	---	174	174	168
Reams M1	----	----	----	----	**3219**	----	----	----	----	----	**5224**	---	---	---	---	**165**
RG 8	----	----	3634	2599	3410	3214	----	----	6346	4535	5614	---	---	175	174	165
RG 11	----	----	----	2383	3183	2783	----	----	----	4161	5328	---	---	---	175	168
RG 13	----	----	----	2497	3384	2940	----	----	----	4327	5661	---	---	---	173	167
RG 22	----	----	3125	2524	3016	2888	----	----	5481	4474	5018	---	---	175	177	166
RG 89	----	----	----	----	2824	----	----	----	----	----	4566	---	---	---	---	162
Sp G-28	3165	2950	2995	2623	3164	2979	5370	5185	5199	4641	5188	170	176	173	177	164
Sp G-111	----	----	----	2439	3146	2792	----	----	----	4314	5185	---	---	---	177	165
Sp G-117	----	----	3037	2542	3320	2966	----	----	5232	4459	5567	---	---	172	176	167
Sp G-126	----	----	----	----	**3154**	----	----	----	----	----	**5109**	---	---	---	---	**162**
VA 116	----	3163	3241	2610	3433	3112	----	5551	5581	4569	5814	---	176	172	175	169

New varieties for 1994 are in bold.

[1]Averages are not directly comparable unless the number of years is equivalent.

Table 3. Agronomic and Disease Information for Varieties Tested at the Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA, 1993.

Variety	Days to Flower	Plant Height (in.)	Leaf No.	Ground Suckers per plot[1]	Disease Reaction[2] BS	TMV	RK	GW	B.Sp.
Coker 176	73	33.1	18.3	0.3	L	R	R	L	L
Coker 319	76	33.1	18.5	0	L	S	S	L	M
Coker 371 Gold	75	31.8	18.1	0	H	S	S	M	M
K 149	73	30.0	19.7	0.3	H	S	R	H	H
K 326	75	31.1	18.9	0	L	S	R	M	H
K 346	75	31.7	19.6	0	H	S	R	H	H
K 358	72	33.9	19.2	0	M	S	R	H	H
K 394	73	31.8	19.1	0	H	S	S	L	L
K 730	**75**	**33.1**	**19.1**	**0**	**L**	**S**	**R**	**H**	**-**
McN 944	70	32.3	18.0	0	M	S	S	L	S
NC 27 NF	NF[3]	31.3	19.1	0	L	S	S	L	L
NC 37 NF	NF[3]	32.4	19.3	0	L	S	R	L	L
NC 82	72	32.6	18.3	0	H	S	S	M	M
NC 567	72	33.0	18.9	0	L	R	R	M	M
NC 729	75	32.3	19.9	0	M	S	R	H	-
Ox 940	**68**	**29.6**	**19.1**	**0**	**H**	**S**	**S**	**M**	**-**
Reams 158	71	32.4	19.0	0	M	S	S	L	L
Reams 713	76	30.2	19.7	0	M	S	S	H	-
Reams M1	**70**	**32.5**	**20.2**	**0.3**	**M**	**S**	**-**	**M**	**-**
RG 8	74	32.7	20.2	0	L	S	R	M	-
RG 11	73	33.4	18.3	0	H	S	R	H	-
RG 13	70	32.5	19.0	0	M	S	R	M	-
RG 22	75	30.6	19.8	0.3	M	S	R	H	-
RG 89	73	29.9	19.0	0	L	S	-	M	-
Sp G-28	75	31.3	19.6	0	H	S	R	M	M
Sp G-111	70	31.4	19.3	0	M	S	R	M	-
Sp G-117	64	32.8	19.9	0.3	M	S	R	H	-
Sp G-126	**75**	**31.6**	**19.1**	**0.3**	**M**	**S**	**R**	**M**	**-**
VA 116	74	34.7	19.4	0	M	S	S	L	M

New varieties for 1994 are in bold.

[1]Ground suckers/22 plant plot.

[2]Disease reaction - H=highly resistant; M=moderate; L=low; S=susceptible; R=resistant; BS=Black Shank; GW=Granville Wilt; RK=Root Knot; TMV=Tobacco Mosaic Virus; B.Sp.=Brown Spot.

[3]NF=nonflowering. Plants should be topped at 20-22 harvestable leaves.

Table 4. Percentage of certain color grade factors of varieties tested at three locations in 1993.

	L[1]				F				K, KR				KL, KF, KM				V, KV, G, GK			
Variety	Sp[2]	Ha	Pi	Avg	Sp	Ha	Pi	Avg	Sp	Ha	Pi	Avg	Sp	Ha	Pi	Avg	Sp	Ha	Pi	Avg
K 326	15	0	0	5	12	16	81	37	35	0	8	14	35	62	11	36	3	22	0	8
K 346	13	0	0	4	13	17	56	29	34	65	27	42	18	18	8	15	18	0	8	9
K 394	15	0	0	5	5	23	55	28	0	59	45	35	71	18	0	30	0	0	0	0
K 730	**18**	**0**	**0**	**6**	**19**	**17**	**39**	**25**	**25**	**27**	**41**	**31**	**13**	**56**	**20**	**30**	**21**	**0**	**0**	**7**
NC 27 NF	15	0	0	5	17	13	82	37	0	0	18	6	54	87	0	47	9	0	0	3
NC 37 NF	27	0	0	9	9	14	59	28	9	23	41	24	55	63	0	39	0	0	0	0
Ox 940	**16**	**0**	**0**	**5**	**0**	**20**	**33**	**18**	**0**	**0**	**53**	**18**	**51**	**55**	**14**	**40**	**31**	**25**	**0**	**19**
Reams M1	**33**	**0**	**0**	**11**	**8**	**17**	**34**	**19**	**52**	**0**	**58**	**37**	**7**	**65**	**8**	**27**	**0**	**18**	**0**	**6**
RG 8	11	0	0	4	12	17	65	31	26	0	35	20	41	37	0	26	6	46	0	17
RG 89	0	0	0	0	17	0	56	24	9	26	44	26	46	61	0	36	26	13	0	13
Sp G-126	**21**	**0**	**0**	**7**	**13**	**0**	**31**	**15**	**5**	**0**	**42**	**16**	**40**	**40**	**27**	**36**	**21**	**33**	**0**	**18**
VA 116	21	0	0	7	0	19	63	27	7	36	32	25	72	45	5	41	0	0	0	0

New varieties for 1994 are in bold.

[1]L=lemon; F=orange; K=variegated; KR=variegated red; KL=variegated lemon; KF=variegated orange; KM=variegated mixed; V=greenish; KV=variegated greenish; G=green; GK=green variegated.

[2]Sp=Southern Piedmont Ag. Res. and Ext. Ctr., Blackstone; Ha=Halifax County, Palmer Farm; Pi=Pittsylvania County, Hutcherson Farm; and Avg=State Average for 1993.

Table 5. Harvest rate (cumulative percentage by priming) as a measure of varietal maturation patterns.[1]

	Southern Piedmont				Halifax					Pittsylvania			
Variety	H1	H2	H3	H4	H1	H2	H3	H4	H5	H1	H2	H3	H4
K 326	13	24	46	100	16	38	76	100	---	10	21	35	100
K 346	11	24	45	100	17	35	58	100	---	9	23	38	100
K 394	14	29	57	100	23	41	63	100	---	8	18	36	100
K 730	**13**	**25**	**53**	**100**	**17**	**34**	**61**	**100**	**---**	**12**	**28**	**48**	**100**
NC 27 NF	14	29	53	100	13	28	52	79	100	13	27	48	100
NC 37 NF	12	27	51	100	14	29	53	77	100	9	23	43	100
Ox 940	**10**	**22**	**47**	**100**	**20**	**46**	**64**	**100**	**---**	**11**	**25**	**47**	**100**
Reams M1	**12**	**27**	**48**	**100**	**17**	**35**	**59**	**100**	**---**	**12**	**23**	**42**	**100**
RG 8	13	26	45	100	17	35	63	100	---	11	27	45	100
RG 89	15	30	52	100	13	32	58	100	---	14	27	45	100
Sp G-126	**11**	**23**	**43**	**100**	**16**	**33**	**60**	**100**	**---**	**12**	**24**	**39**	**100**
VA 116	10	22	48	100	19	33	69	100	---	14	24	37	100

[1]Harvest date for each priming was determined by the appearance of the tobacco at each location. The tobacco produced and the rate of removal were influenced by individual management and local soil and weather conditions.

Center) counties under the joint supervision of Extension Agents in the respective counties and Virginia Polytechnic Institute and State University research and Extension personnel. Testing in various locations throughout the production area makes it possible to evaluate varietal performance under the widely ranging soil and weather conditions existing in Virginia. Such a testing program also provides an opportunity for producers to observe flue-cured tobacco varieties under field conditions in their particular region. Remember that the data in Table 1 are for only one year and the results may not be indicative of what might be obtained in other years. Where available, averages that include 1989 to 1993 data are also presented in Table 2. Table 5 presents data on harvest rates/maturation patterns for the 12 varieties in the Official Variety Test. The past season's drought and extreme heat should be noted when interpreting these data.

Information on agronomic performance and disease resistance levels are given in Table 3. The use of resistant varieties is a very effective means of reducing losses due to certain diseases and nematodes. However, varietal resistance can not be used alone. Any variety may suffer damage when nematodes and disease causing organisms are present and when weather conditions favor diseases/nematodes. An effective pest management program will also include crop rotation (particularly with fescue or small grains) and other cultural control practices. Combining varietal resistance with crop rotation, early stalk and root destruction, and proper use of pesticides is the only way to achieve consistent, cost-effective disease and nematode control.

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