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# The Virginia Alfalfa Variety Report: A 5-Year Summary (1995-1999)

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Alfalfa is capable of producing high yields of high quality forage for hay, haylage, and pasture. However, this performance potential can only be realized when site selection and management are appropriate. Alfalfa requires deep, well-drained soils with pH > 6.5 and high levels of P and K in order to persist and yield to its potential. Defoliation and pest management are also key to alfalfa performance.

There are several hundred alfalfa varieties on the market, and many do well in Virginia. This report is a summary of alfalfa variety trials performed at Virginia Tech Agricultural Research and Extension Centers (ARECs) from 1995 through 1999. It includes a trial seeded at the Southern Piedmont AREC (SPAREC) at Blackstone, VA, in May 1995 and harvested for 3 years (1996-98), plus a residual spring harvest in 1999 (Tables 1-5). It also includes a trial established at the Northern Piedmont AREC (NPAREC) at Orange in September 1994 and harvested for 5 years (1995-99; Tables 1, 6-11). A newer trial was seeded at the NPAREC in September 1998 and data for one harvest year (1999) are presented in Table 12. The newest trials were seeded at the Kentland Farm at Whitethorne in September 1999 and at the SPAREC in spring 2000 (Table 1). No yield data are yet available for these trials.

The trials are conducted at multiple locations within the state in order to provide a range of environments. The tables that follow include summary data of individual harvests within years and total season yields across years. The varieties were submitted by or specifically requested of cooperating seed companies.

Entries were planted in 4 replications of a randomized complete block design at each location. Individual plot size averaged 5' X 15'. All data are reported on a 100% dry matter basis; hay yields would be 10-15% higher.

The variety trials are managed at high fertility levels. Phosphorus and potassium were maintained at high levels, pH was maintained between 6.5 and 7.0, and boron was applied annually. Weeds and insects were controlled with appropriate pesticides.

All entries in a trial at a location were harvested on the same dates, but harvest dates varied among locations and years. The goal was to harvest five times per year beginning around May 1 and about monthly thereafter. At each harvest, plots were cut to a 3" residual height with either a sickle or flail harvester.

Statistical analyses were performed for individual harvests within years and for total season yields across years. These analyses determine whether numerical differences were just random effects or indeed a "true" difference in performance among varieties. The term "LSD (0.05)" appears at the bottom of each table with an accompanying value under each column of data. An LSD (0.05) is the amount by which two varieties' yields in the same column must differ in order to be considered statistically, or meaningfully, different. If "NS" appears instead of a value, it means the averages within the column are not statistically, or meaningfully, different.

Alfalfa is relatively drought and heat tolerant. Nevertheless, precipitation has a profound effect on forage yield and persistence. Monthly average precipitation data are compared to long-term averages for each location during which the trials were conducted (Figs. 1 and 2)

At Orange, the 1995 growing season was wetter than average early, drier than average during late summer, and again wetter than average during fall. The entire 1996 growing season had above average rainfall. In 1997, it was dry throughout, except for above average rainfall in July and November; 1998 was wet early, but dry from July through fall; and 1999 was very dry throughout, except for above average rainfall during September.

At Blackstone, the 1995 growing season was wet early, drier than average during most of the summer, and wet again in October. In 1996, rainfall was average until fall when rainfall was above average; 1997 was wet in April, but dry from June through September, and near average through the fall; 1998 was wet early, then dry from June through November except for above average rain in September; and in 1999, a wet April followed dry conditions in February and March. It is important

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to note that the Blackstone trial received 4, 5, and 3.5 inches of irrigation during 1996, 1997, and 1998, respectively; and thus was never exposed to prolonged droughts. This may have concealed differences in variety performance that might have occurred without irrigation.

When using this publication to select an alfalfa variety, it is important to 1) prioritize the relative importance of yield, persistence, and quality for the intended use of the forage and 2) understand the context within which these trials were conducted. Forage quality and palatability were not determined in our trials. These data reflect the yield and persistence of varieties under optimum management. Varieties that persisted well over several years in these trials may not necessarily persist well under grazing, poor fertility, or a broad range of soil types. Disease resistance is related to persistence. All diseases listed in Table 1 occur in Virginia. Varieties with high resistance to all five diseases would be expected to have the broadest range of adaptation. However, for some forage

growers, persistence may not be as important as short-term yield, quality, and palatability.

Consult your local Extension agent for more information about forage varieties and management.

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**Table 1. Virginia Alfalfa Forage Variety Trials - VPI & SU.**

Variety	Company	Disease Resistance					Blackstone					Orange					Wt*		
		Bw	Vw	PRR	Fw	An	96	97	98	99	00	95	96	97	98	99	99	00	
53H81	Pioneer Hi-Bred Int., Inc.	HR	HR	R	HR	HR												X	
53Q60	Pioneer Hi-Bred Int., Inc.	HR	R	HR	R	HR												X	X
5454	Pioneer Hi-Bred Int., Inc.	R	MR	HR	HR	HR	X	X	X	X		X	X	X	X	X	X		
54H69	Pioneer Hi-Bred Int., Inc.	R	R	HR	HR	HR												X	
54V54	Pioneer Hi-Bred Int., Inc.	HR	HR	HR	HR	HR												X	
Abilene + Z	ABI Alfalfa	HR	HR	HR	HR	HR													X
ABT 350	AgriBioTech, Inc	HR	HR	HR	HR	HR												X	X
ABT 400 SCL	AgriBioTech, Inc	HR	HR	HR	HR	HR												X	X
ABT405	AgriBioTech, Inc	HR	HR	HR	HR	R	X	X	X	X									
Affinity + Z	ABI Alfalfa	HR	HR	HR	HR	HR												X	X
Alfagraze	America's Alfalfa	R	-	LR	R	MR	X	X	X	X	X	X	X	X	X	X	X		X
Amerigraze 401 + Z	ABI Alfalfa	HR	HR	HR	HR	HR												X	X
Asset	Seedway Inc.	HR	R	HR	R	R						X	X	X	X	X			
Belmont	Great Plains Research Co., Inc.	HR	R	R	HR	HR						X	X	X	X	X			
Choice	FFR Cooperative	HR	HR	HR	R	R	X	X	X	X	X	X	X	X	X	X	X	X	X
Cimarron 3I	Great Plains Research Co., Inc.	HR	R	R	HR	HR												X	
Cimarron VR	Great Plains Research Co., Inc.	HR	R	R	HR	HR						X	X	X	X	X			
Cinarron SR	Great Plains Research Co., Inc.	HR	HR	HR	HR	HR												X	
Clean Sweep 1000	FFR Cooperative	HR	R	HR	HR	HR												X	
Dagger + EV	Agripro Seeds	HR	HR	HR	HR	HR												X	X
Demand	Agripro Seeds	HR	HR	HR	HR	HR	X	X	X	X		X	X	X	X	X			
DK127	Monsanto	HR	R	HR	R	HR	X	X	X	X									
DK133	Monsanto	HR	R	HR	HR	HR	X	X	X	X								X	X
DK140	Monsanto	HR	R	HR	HR	HR												X	X
DK141	Monsanto	HR	HR	HR	HR	HR												X	X
Dominator	Agripro Seeds	HR	R	HR	HR	HR	X	X	X	X		X	X	X	X	X			
Feast + EV	Agripro Seeds	HR	HR	HR	HR	R												X	X
Haygrazer	Great Plains Research Co., Inc.	HR	R	R	HR	R													X
Innovator +Z	ABI Alfalfa	HR	HR	HR	HR	HR	X	X	X	X		X	X	X	X	X			
Interceptor	Agripro Seeds	HR	R	HR	HR	HR												X	
Key	Great Plains Research Co., Inc.	HR	HR	HR	HR	HR						X	X	X	X	X			
Legacy	AgriBioTech, Inc	HR	R	HR	HR	R	X	X	X	X		X	X	X	X	X			
Multistar	FFR Cooperative	HR	R	HR	HR	HR	X	X	X	X		X	X	X	X	X			
Paramount	ChemGro Seeds	HR	R	HR	HR	HR						X	X	X	X	X			
Pawnee	Midwest Seed Genetics	HR	HR	HR	HR	HR												X	X
Persist	Doebler's PA Hybrids, Inc.	HR	R	HR	HR	R						X	X	X	X	X	X	X	X
Precedent	Doebler's PA Hybrids, Inc.	HR	R	HR	R	R						X	X	X	X	X			
Prolific	Doebler's PA Hybrids, Inc.	HR	R	HR	HR	R												X	
Ram	Great Plains Research Co., Inc.	HR	R	HR	HR	HR						X	X	X	X	X			
Resistar	FFR Cooperative	R	HR	HR	HR	R	X	X	X	X		X	X	X	X	X			
Seedway 512	Seedway Inc.	HR	R	HR	HR	HR													X
Spur	Seedway Inc.	HR	R	HR	HR	HR												X	X
Stampede	Agway, Inc.	HR	R	HR	R	R	X	X	X	X									
Stellar	ChemGro Seeds	HR	HR	HR	HR	HR												X	
Supercuts	AgriBioTech, Inc	HR	HR	HR	HR	HR	X	X	X	X									
Total +Z	ABI Alfalfa	HR	HR	HR	HR	HR	X	X	X	X		X	X	X	X	X			
Trialfalon	ChemGro Seeds	HR	R	HR	HR	HR													X
Triple Crown	FFR Cooperative	HR	R	HR	HR	HR												X	X
WL 252 HQ	W-L Research Inc.	HR	R	HR	HR	HR						X	X	X	X	X			
WL 323	W-L Research Inc.	HR	R	HR	HR	HR	X	X	X	X		X	X	X	X	X			
WL 324	W-L Research Inc.	HR	R	HR	HR	HR												X	
WL 325 HQ	W-L Research Inc.	HR	R	HR	HR	HR												X	X
WL 326 GZ	W-L Research Inc.	HR	HR	HR	HR	HR												X	
WL 327	W-L Research Inc.	HR	R	HR	HR	HR													X
WL 332 SR	W-L Research Inc.	HR	R	HR	HR	HR													

\*Wt = Whitethorne

Bw = Bacterial wilt, Vw = Verticillium wilt, Fw = Fusarium wilt, An = Anthracnose, and PRR = Phytophthora root rot.

Disease Resistance Ratings:	<u>% Resistant Plants</u>	<u>Resistance class</u>
	0-5%	Susceptible (S)
	6-14%	Low Resistance (LR)
	15-30%	Moderate Resistance (MR)
	31-50%	Resistance (R)
	>50%	High Resistance (HR)

**Table 2. Alfalfa Variety Yields: Southern Piedmont AREC, Blackstone, VA, May 1995 Seeding.**

Variety	Company	1996	1997	DM Yield (ton/acre)		1996-98 Avg.
				1998	6-May 1999	
Stampede	Agway	6.67	7.15	5.43	1.54	6.41
SuperCuts	ABT	6.61	7.10	5.53	1.57	6.41
Total+Z	ABI	6.68	7.09	5.25	1.33	6.34
Innovator+Z	ABI	6.61	7.07	5.25	1.31	6.31
DK127	Monsanto	6.23	7.18	5.48	1.48	6.30
Alfagraze	America's	6.44	6.99	5.45	1.47	6.29
5454	Pioneer	6.41	7.03	5.21	1.34	6.21
Choice	FFR	6.16	6.99	5.14	1.29	6.10
ABT405	ABT	6.14	6.79	5.35	1.40	6.09
Demand	AgriPro	6.01	6.84	5.03	1.34	5.96
Dominator	AgriPro	6.13	6.68	5.05	1.42	5.95
WL323	W-L	5.96	6.81	5.07	1.23	5.95
Resistar	FFR	5.81	6.77	5.13	1.39	5.90
DK133	Monsanto	5.99	6.55	5.17	1.23	5.90
Multistar	FFR	5.64	6.65	5.33	1.34	5.87
Legacy	ABT	5.56	6.51	5.26	1.26	5.77
<b>LSD (0.05)</b>		<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>0.16</b>	<b>NS</b>

\*See Individual Years for Cultural Practices

**Table 3. 1996 Alfalfa Variety Yields: Southern Piedmont AREC, Blackstone, VA, May 1995 Seeding.**

Variety	Company	9-May-96	13-Jun-96	DM Yield (ton/acre)			Total
				9-Jul-96	7-Aug-96	9-Sep-96	
Total+Z	ABI	1.85	1.86	0.63	1.42	0.92	6.68
Stampede	Agway	1.72	2.06	0.64	1.40	0.85	6.67
Innovator+Z	ABI	1.87	1.83	0.60	1.39	0.93	6.61
SuperCuts	ABT	1.78	1.88	0.64	1.45	0.86	6.60
Alfagraze	America's	1.90	1.66	0.59	1.43	0.87	6.44
5454	Pioneer	1.92	1.52	0.69	1.43	0.85	6.41
DK127	Monsanto	1.87	1.63	0.59	1.29	0.84	6.23
Choice	FFR	1.77	1.51	0.60	1.40	0.87	6.16
ABT405	ABT	1.72	1.69	0.61	1.31	0.81	6.14
Dominator	AgriPro	1.77	1.66	0.46	1.25	0.99	6.13
Demand	AgriPro	1.80	1.59	0.50	1.20	0.92	6.01
DK133	Monsanto	1.86	1.47	0.52	1.30	0.84	5.98
WL323	W-L	1.86	1.45	0.50	1.28	0.87	5.96
Resistar	FFR	1.77	1.50	0.55	1.16	0.82	5.81
Multistar	FFR	1.71	1.30	0.51	1.37	0.76	5.64
Legacy	ABT	1.63	1.41	0.50	1.13	0.89	5.56
<b>LSD (0.05)</b>		<b>NS</b>	<b>0.38</b>	<b>NS</b>	<b>NS</b>	<b>0.11</b>	<b>NS</b>

Planted - 5/26/95

9/2/94 - 1 ton lime/acre

9/13/94 - 200 lb P<sub>2</sub>O<sub>5</sub>, 400 lb K<sub>2</sub>O and 4 lb B/acre

5/25/95 - 2 qt. Eptam 6E/acre

8/10/95 - 1 in. irrigation

8/30-31/95 - 2 in. irrigation

**Table 4. 1997 Alfalfa Variety Yields: Southern Piedmont AREC, Blackstone, VA, May 1995 Seeding.**

Variety	Company	30-Apr-97	5-Jun-97	2-Jul-97	31-Jul-97	8-Sep-97	Total
DM Yield (ton/acre)							
DK127	Monsanto	1.74	1.69	1.32	1.42	1.02	7.18
Stampede	Agway	1.70	1.68	1.31	1.46	1.01	7.15
SuperCuts	ABT	1.67	1.72	1.30	1.42	0.98	7.10
Total+Z	ABI	1.78	1.71	1.23	1.39	0.99	7.09
Innovator+Z	ABI	1.69	1.60	1.34	1.46	0.97	7.07
5454	Pioneer	1.72	1.70	1.32	1.35	0.95	7.03
Alfagraze	America's	1.88	1.61	1.17	1.33	1.00	6.99
Choice	FFR	1.71	1.68	1.25	1.37	0.98	6.99
Demand	AgriPro	1.66	1.66	1.18	1.39	0.95	6.84
WL323	W-L	1.66	1.61	1.23	1.36	0.93	6.80
ABT405	ABT	1.69	1.55	1.25	1.32	0.96	6.79
Resistar	FFR	1.75	1.54	1.19	1.28	1.01	6.77
Dominator	AgriPro	1.66	1.42	1.14	1.45	0.99	6.68
Multistar	FFR	1.62	1.59	1.12	1.38	0.95	6.65
DK133	Monsanto	1.61	1.54	1.15	1.31	0.94	6.56
Legacy	ABT	1.63	1.52	1.10	1.36	0.90	6.51
<b>LSD (0.05)</b>		<b>NS</b>	<b>NS</b>	<b>0.27</b>	<b>0.13</b>	<b>NS</b>	<b>NS</b>

Planted - 5/26/95

2/13/97 - 0-196-403 + 4 lb B/acre

3/13/97 - 1 qt. Furadan/acre

6/10/97 - 1.5 in. irrigation

7/9/97 - 2 in. irrigation

8/1/97 - 2 pt. Gramoxone/acre

8/5/97 - 1.5 in. irrigation

**Table 5. 1998 Alfalfa Variety Yields: Southern Piedmont AREC, Blackstone, VA, May 1995 Seeding.**

Variety	Company	14-May-98	15-Jun-98	21-Jul-98	24-Aug-98	2-Nov-98	Total
DM Yield (ton/acre)							
SuperCuts	ABT	1.70	1.28	0.97	0.93	0.65	5.53
DK127	Monsanto	1.83	1.17	0.96	0.87	0.65	5.48
Alfagraze	America's	1.61	1.14	1.00	0.94	0.76	5.45
Stampede	Agway	1.53	1.29	0.95	0.91	0.75	5.43
ABT405	ABT	1.64	1.16	0.98	0.91	0.66	5.35
Multistar	FFR	1.78	1.16	0.92	0.75	0.72	5.33
Legacy	ABT	1.66	1.07	0.90	0.87	0.76	5.26
Total+Z	ABI	1.53	1.19	0.97	0.78	0.79	5.25
Innovator+Z	ABI	1.60	1.23	0.88	0.87	0.68	5.25
5454	Pioneer	1.82	1.08	0.85	0.84	0.61	5.21
DK133	Monsanto	1.63	1.17	0.86	0.77	0.74	5.16
Choice	FFR	1.66	1.13	0.86	0.81	0.68	5.14
Resistar	FFR	1.60	1.06	0.90	0.90	0.68	5.13
WL323	W-L	1.67	1.09	0.88	0.77	0.67	5.07
Dominator	AgriPro	1.23	1.22	0.95	0.94	0.71	5.05
Demand	AgriPro	1.41	1.14	0.92	0.85	0.71	5.03
<b>LSD (0.05)</b>		<b>0.22</b>	<b>0.12</b>	<b>NS</b>	<b>0.11</b>	<b>NS</b>	<b>NS</b>

Planted - 5/26/95

2/11/98 - 2 pt. Gramoxone/acre + 0.125% X-77

2/13/98 - 200 lb P<sub>2</sub>O<sub>5</sub>, 400 lb K<sub>2</sub>O and 4 lb B/acre

3/27/98 - 1 qt. Furadan 4F/acre

6/24/98 - 1.5 in. irrigation

7/22/98 - 2 in. irrigation

7/23/98 - 2 pt. Gramoxone/acre + 0.125% X-77

**Table 6. Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	1995	1996	1997	1998	1999	1995-99 Avg.
DM Yield (ton/acre)							
Choice	FFR	4.79	5.81	6.44	7.99	6.28	6.26
Paramount	ChemGro	4.77	5.93	5.96	7.83	6.65	6.23
Innovator +Z	ABI	4.82	6.02	6.11	7.54	6.26	6.15
WL 252 HQ	W-L	4.41	5.66	5.84	7.63	6.24	5.96
5454	Pioneer	4.67	5.66	5.94	7.24	6.26	5.96
Multistar	FFR	4.80	5.51	5.77	7.29	6.28	5.93
Asset	Seedway	4.76	5.63	6.08	7.26	5.85	5.91
Resistar	FFR	4.81	5.66	5.87	7.28	5.73	5.87
Persist	Doebler's	4.58	5.66	5.81	7.00	5.94	5.80
WL 323	W-L	4.39	5.45	5.93	7.06	5.90	5.75
Dominator	AgriPro	4.42	5.45	5.76	7.16	5.66	5.69
Key	Great Plains	4.60	5.18	5.50	7.19	5.61	5.61
Ram	Great Plains	4.44	5.19	5.60	7.06	5.75	5.61
Total +Z	ABI	4.37	5.62	5.57	6.95	5.50	5.60
Demand	AgriPro	4.39	5.38	5.56	7.03	5.51	5.57
Precedent	Doebler's	4.43	5.21	5.72	6.79	5.34	5.50
Legacy	ABT	4.13	5.29	5.54	6.60	5.64	5.44
Belmont	Great Plains	4.28	5.23	5.18	6.80	5.54	5.41
Alfagraze	America's	3.97	5.04	5.37	6.54	5.05	5.20
Cimarron VR	Great Plains	4.06	4.92	5.43	6.49	4.89	5.16
<b>LSD (0.05)</b>		<b>NS</b>	<b>0.41</b>	<b>0.41</b>	<b>0.53</b>	<b>0.57</b>	<b>0.37</b>

\*See Individual Years for Cultural Practices

**Table 7. 1995 Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	12-May-95	14-Jun-95	17-Jul-95	7-Aug-95	6-Nov-95	Total
DM Yield (ton/acre)							
Innovator +Z	ABI	1.64	1.30	0.91	0.48	0.49	4.82
Resistar	FFR	1.62	1.56	0.80	0.29	0.54	4.81
Multistar	FFR	1.82	1.56	0.64	0.28	0.50	4.80
Choice	FFR	1.66	1.49	0.75	0.32	0.56	4.79
Paramount	ChemGro	1.44	1.40	0.98	0.41	0.54	4.77
Asset	Seedway	1.64	1.42	0.79	0.34	0.56	4.76
5454	Pioneer	1.49	1.43	0.86	0.40	0.49	4.67
Key	Great Plains	1.69	1.41	0.69	0.30	0.51	4.60
Persist	Doebler's	1.57	1.36	0.78	0.33	0.54	4.58
Ram	Great Plains	1.54	1.43	0.65	0.29	0.52	4.44
Precedent	Doebler's	1.50	1.48	0.69	0.23	0.53	4.43
Dominator	AgriPro	1.37	1.34	0.85	0.39	0.47	4.42
WL 252 HQ	W-L	1.54	1.35	0.76	0.30	0.47	4.41
Demand	AgriPro	1.40	1.34	0.80	0.39	0.47	4.39
WL 323	W-L	1.58	1.32	0.71	0.29	0.50	4.39
Total +Z	ABI	1.47	1.21	0.84	0.38	0.46	4.37
Belmont	Great Plains	1.37	1.37	0.73	0.32	0.48	4.28
Legacy	ABT	1.40	1.44	0.61	0.22	0.46	4.13
Cimarron VR	Great Plains	1.64	1.37	0.43	0.19	0.44	4.06
Alfagraze	America's	1.25	1.32	0.71	0.30	0.39	3.97
<b>LSD (0.05)</b>		<b>0.27</b>	<b>NS</b>	<b>0.18</b>	<b>0.08</b>	<b>0.08</b>	<b>NS</b>

Planted – 9/14/94

3/13/95 - Applied 0-80-300 + 4 lb B/acre

3/20/95 - Applied 2.5 T lime/acre

5/12/95 - Applied 180 lb K<sub>2</sub>O /acre

7/21/95 - Sprayed 2.5 pts Poast and 2 pt. Crop oil/acre for weed control

7/21/95 - Sprayed 1 pt. Cygon 400 /acre for insect control.



**Table 8. 1996 Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	13-May-96	14-Jun-96	16-Jul-96	16-Aug-96	30-Sep-96	Total
Innovator +Z	ABI	1.69	1.31	1.04	1.07	0.91	6.02
Paramount	ChemGro	1.60	1.42	1.02	1.02	0.87	5.93
Choice	FFR	1.64	1.31	0.99	1.00	0.87	5.81
WL 252 HQ	W-L	1.61	1.28	0.97	0.97	0.83	5.66
Resistar	FFR	1.57	1.32	0.97	0.98	0.82	5.66
5454	Pioneer	1.58	1.35	0.96	0.93	0.83	5.66
Persist	Doebler's	1.59	1.29	0.97	0.98	0.83	5.66
Asset	Seedway	1.57	1.31	0.91	0.97	0.88	5.63
Total +Z	ABI	1.57	1.29	0.99	0.98	0.80	5.62
Multistar	FFR	1.54	1.28	0.93	0.93	0.84	5.51
Dominator	AgriPro	1.49	1.26	0.93	0.95	0.83	5.45
WL 323	W-L	1.44	1.35	0.90	0.94	0.82	5.45
Demand	AgriPro	1.45	1.25	0.93	0.94	0.81	5.38
Legacy	ABT	1.47	1.25	0.83	0.90	0.84	5.29
Belmont	Great Plains	1.34	1.32	0.88	0.88	0.81	5.23
Precedent	Doebler's	1.47	1.19	0.85	0.90	0.80	5.21
Ram	Great Plains	1.31	1.28	0.85	0.93	0.82	5.19
Key	Great Plains	1.42	1.23	0.82	0.88	0.82	5.18
Alfagraze	America's	1.35	1.12	0.84	0.92	0.81	5.04
Cimarron VR	Great Plains	1.26	1.12	0.82	0.90	0.81	4.92
<b>LSD (0.05)</b>		<b>0.20</b>	<b>0.11</b>	<b>0.10</b>	<b>0.10</b>	<b>NS</b>	<b>0.41</b>

Planted - 9/14/94

2/29/96 - Sprayed 3/4 lb Sinbar/acre for weed control

3/5/96 - Applied 0-80-300 + 4 lb B/acre

4/17/96 - Sprayed 1 qt. Lorsban/acre to control alfalfa weevil

5/14/96 - Applied 180 lb K<sub>2</sub>O/acre**Table 9. 1997 Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	16-May-97	16-Jun-97	11-Jul-97	12-Aug-97	26-Sep-97	Total
Choice	FFR	1.98	1.46	1.04	1.07	0.90	6.44
Innovator +Z	ABI	1.73	1.42	1.00	1.15	0.81	6.11
Asset	Seedway	1.77	1.46	0.96	1.07	0.82	6.08
Paramount	ChemGro	1.63	1.43	1.02	1.08	0.80	5.96
5454	Pioneer	1.68	1.45	1.00	1.04	0.78	5.94
WL 323	W-L	1.75	1.47	0.91	1.02	0.77	5.93
Resistar	FFR	1.66	1.44	0.94	1.05	0.78	5.87
WL 252 HQ	W-L	1.62	1.34	1.02	1.06	0.81	5.84
Persist	Doebler's	1.61	1.44	0.93	1.06	0.78	5.81
Multistar	FFR	1.68	1.46	0.88	0.95	0.79	5.77
Dominator	AgriPro	1.65	1.36	0.96	1.07	0.72	5.76
Precedent	Doebler's	1.70	1.37	0.88	0.98	0.79	5.72
Ram	Great Plains	1.50	1.36	0.96	1.00	0.77	5.60
Total +Z	ABI	1.66	1.28	0.96	0.96	0.72	5.57
Demand	AgriPro	1.55	1.22	0.98	1.09	0.71	5.56
Legacy	ABT	1.63	1.44	0.82	0.93	0.72	5.54
Key	Great Plains	1.62	1.30	0.92	0.92	0.74	5.50
Cimarron VR	Great Plains	1.53	1.31	0.84	1.00	0.76	5.43
Alfagraze	Americas	1.60	1.27	0.82	1.00	0.68	5.37
Belmont	Great Plains	1.39	1.26	0.89	0.92	0.72	5.18
<b>LSD (0.05)</b>		<b>0.17</b>	<b>NS</b>	<b>0.10</b>	<b>0.12</b>	<b>0.10</b>	<b>0.41</b>

Planted - 9/14/94

2/18/97 - Sprayed 3/4 lb Sinbar/acre for weed control

3/11/97 - Applied 0-80-300 + 4lb B/acre

3/17/97 - Sprayed 1 % Roundup in alley to control weeds

4/2/97 - Sprayed 1 qt. Lorsban/acre to control alfalfa weevil

5/20/97 - Applied 180 lb K<sub>2</sub>O/acre

**Table 10. 1998 Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	13-May-98	17-Jun-98	13-Jul-98	21-Aug-98	29-Sep-98	Total
DM Yield (ton/acre)							
Choice	FFR	2.22	2.29	1.23	1.46	0.78	7.99
Paramount	ChemGro	2.06	2.28	1.28	1.44	0.77	7.83
WL 252 HQ	W-L	2.12	2.23	1.14	1.38	0.76	7.63
Innovator +Z	ABI	1.89	2.20	1.26	1.43	0.76	7.54
Multistar	FFR	2.09	2.17	1.07	1.30	0.65	7.29
Resistar	FFR	2.01	2.17	1.11	1.31	0.69	7.28
Asset	Seedway	2.00	2.12	1.08	1.32	0.73	7.26
5454	Pioneer	1.91	2.10	1.15	1.34	0.74	7.24
Key	Great Plains	1.98	2.18	1.08	1.26	0.68	7.19
Dominator	AgriPro	1.81	2.14	1.18	1.30	0.72	7.16
Ram	Great Plains	1.93	2.07	1.08	1.26	0.72	7.06
WL 323	W-L	2.15	2.02	1.07	1.24	0.58	7.06
Demand	AgriPro	1.91	2.16	1.11	1.20	0.64	7.03
Persist	Doebler's	2.03	2.02	1.10	1.24	0.61	7.00
Total +Z	ABI	2.01	2.07	1.07	1.24	0.56	6.95
Belmont	Great Plains	1.85	1.96	1.10	1.24	0.65	6.80
Precedent	Doebler's	2.00	1.97	1.02	1.22	0.58	6.79
Legacy	ABT	1.91	1.95	0.95	1.22	0.57	6.60
Alfagraze	America's	1.78	1.96	1.00	1.18	0.62	6.54
Cimarron VR	Great Plains	2.00	1.93	0.93	1.14	0.49	6.49
<b>LSD (0.05)</b>		<b>0.22</b>	<b>0.20</b>	<b>0.09</b>	<b>0.13</b>	<b>0.18</b>	<b>0.53</b>

Planted - 9/14/94

2/22/98 - Sprayed 3/4 lb Sinbar/acre for weed control

2/26/98 - Applied 0-80-300 + 4lb B/acre

4/2/98 - Sprayed 1 qt. Lorsban/acre to control alfalfa weevil

5/18/98 - Applied 180 lb K<sub>2</sub>O/acre**Table 11. 1999 Alfalfa Variety Yields: Northern Piedmont AREC, Orange, VA, Sept. 1994 Seeding.**

Variety	Company	10-May-99	10-Jun-99	13-Jul-99	9-Aug-99	23-Sep-99	Total
DM Yield (ton/acre)							
Paramount	ChemGro	2.05	1.56	1.22	0.91	0.91	6.65
Multistar	FFR	1.89	1.45	1.14	0.84	0.96	6.28
Choice	FFR	1.97	1.51	1.10	0.79	0.92	6.28
Innovator +Z	ABI	1.90	1.35	1.17	0.93	0.91	6.26
5454	Pioneer	1.76	1.47	1.18	0.90	0.95	6.26
WL 252 HQ	W-L	1.97	1.43	1.16	0.79	0.89	6.24
Persist	Doebler's	1.71	1.38	1.12	0.77	0.96	5.94
WL 323	W-L	1.70	1.36	1.05	0.76	1.03	5.90
Asset	Seedway	1.65	1.36	1.10	0.78	0.96	5.85
Ram	Great Plains	1.64	1.30	1.04	0.74	1.03	5.75
Resistar	FFR	1.64	1.33	1.08	0.73	0.94	5.73
Dominator	AgriPro	1.72	1.28	1.04	0.75	0.87	5.66
Legacy	ABT	1.68	1.22	1.05	0.76	0.93	5.64
Key	Great Plains	1.68	1.28	1.05	0.66	0.94	5.61
Belmont	Great Plains	1.51	1.16	1.05	0.79	1.03	5.54
Demand	AgriPro	1.73	1.23	0.97	0.69	0.90	5.51
Total +Z	ABI	1.75	1.15	0.94	0.74	0.92	5.50
Precedent	Doebler's	1.66	1.21	0.93	0.64	0.91	5.34
Alfagraze	America's	1.51	1.11	0.94	0.64	0.85	5.05
Cimarron VR	Great Plains	1.39	1.07	0.89	0.65	0.88	4.89
<b>LSD (0.05)</b>		<b>0.21</b>	<b>0.17</b>	<b>0.14</b>	<b>0.17</b>	<b>NS</b>	<b>0.57</b>

Planted - 9/14/94

2/10/99 - Sprayed 3/4 lb Sinbar/acre for weed control

2/9/99 - Applied 0-80-300 + 4 lb B/acre

4/8/99 - Sprayed 1 qt. Lorsban/acre to control alfalfa weevil

5/17/99 - Applied 180 lb K<sub>2</sub>O/acre



**Table 12. 1999 Alfalfa Variety Yields - Northern Piedmont AREC, Orange, VA, Sept. 1998 Seeding.**

<b>Variety</b>	<b>Company</b>	<b>2-Jun-99</b>	<b>1-Nov-99</b> <i>DM Yield (ton/acre)</i>	<b>Total</b>
Dekalb 141	Monsanto	0.34	0.71	1.05
Dagger + EV	AgriPro	0.30	0.67	0.97
Spur	Seedway	0.26	0.71	0.96
Persist	Doebler's	0.22	0.74	0.95
Cimarron 3-i	Great Plains	0.24	0.67	0.90
Pioneer 5454	Pioneer	0.31	0.59	0.90
Dekalb 133	Monsanto	0.24	0.65	0.89
Triple Crown	FFR	0.25	0.63	0.88
WL 324	W-L	0.21	0.66	0.88
Cimarron - SR	Great Plains	0.28	0.59	0.87
ABT 400SCL	ABT	0.28	0.58	0.87
AmeriGraze 401 + Z	ABI	0.19	0.66	0.85
Pawnee	ABI	0.17	0.66	0.83
ABT 350	ABT	0.20	0.63	0.82
Feast + EV	AgriPro	0.21	0.61	0.82
Stellar	ChemGro	0.28	0.53	0.82
WL 323	W-L	0.21	0.61	0.82
CleanSweep 1000	FFR	0.22	0.57	0.80
Pioneer 53Q60	Pioneer	0.19	0.61	0.79
WL 326GZ	W-L	0.20	0.57	0.77
Dekalb 140	Monsanto	0.18	0.59	0.77
Choice	FFR	0.21	0.52	0.73
Affinity + Z	ABI	0.19	0.54	0.73
Interceptor	AgriPro	0.16	0.54	0.71
Pioneer 54H69	Pioneer	0.14	0.56	0.70
WL 325HQ	W-L	0.15	0.47	0.62
<b>LSD (0.05)</b>		<b>NS</b>	<b>NS</b>	<b>NS</b>

Planted - 9/23/98

9/14/98 - Applied 9 - 54 - 54/acre

9/21/98 - Sprayed 1 qt. of Eptam 7E and spike tooth in

3/26/99 - Overseeded Study

6/11/99 - Applied 100 lb K<sub>2</sub>O/acre

**Table 13. Alfalfa seed companies with varieties in Virginia Tech trials.**

53H81	5
53Q60	5
5454	5
54H69	5
54V54	5
Abilene + Z	9
ABT 350	12
ABT 400 SCL	12
ABT405	12
Affinity + Z	9
Alfagraze	9
Amerigraze 401 + Z	9
Asset	2
Belmont	4
Choice	1
Cimarron 3I	4
Cimarron VR	4
Cinarron SR	4
Clean Sweep 1000	1
Dagger + EV	11
Demand	11
DK127	6
DK133	6
DK140	6
DK141	6
Dominator	11
Feast + EV	11
Haygrazer	4
Innovator +Z	9
Interceptor	11
Key	4
Legacy	12
Multistar	1
Paramount	3
Pawnee	13
Persist	8
Precedent	8
Prolific	8
Ram	4
Resistar	1
Seedway 512	2
Spur	2
Stampede	7
Stellar	3
Supercuts	12
Total +Z	9
Trialfalon	3
Triple Crown	1
WL 252 HQ	10
WL 323	10
WL 324	10
WL 325 HQ	10
WL 326 GZ	10
WL 327	10
WL 332 SR	10

1. Southern States Cooperative  
P. O. Box 26234  
Richmond, VA 23260  
(804)281-1253  
www.southernstates-coop.com

2. Seedway Inc.  
1734 Railroad Place  
P.O. Box 250  
Hall, NY 14463  
(716)526-6391

3. ChemGro Seeds  
P.O. Box 218  
East Petersburg, PA 17520  
(717)569-3296

4. Wetsel, Inc.  
961 N. Liberty  
Harrisonburg, VA 22801  
(540)434-6753

5. Pioneer Hi-Bred International, Inc.  
800 Tiffany Blvd., #200  
Rocky Mount, NC 27804-1826  
(212)972-3320

6. Monsanto  
3100 Sycamore Rd  
DeKalb, IL 60115  
1-800-8DEKALB

7. Agway, Inc.  
243 Red Dog Road  
Acme, PA 15610  
(724)455-3526

8. Doebler's PA Hybrids  
RR 1 Box 424  
Jersey Shore, PA 17740  
(800)853-CORN

9. ABI Alfalfa, Inc.  
12351 W. 96 Terrace Ste. 101  
Lenexa, KS 66215  
(800)873-2532

10. W-L Research, Inc.  
8701 W. US Hwy 14  
Evansville, WI 53536  
(608)882-4100

11. AgriPro, Inc.  
P.O. Box 500  
Slater, IA 50244  
(877)AGRIPRO

12. AgriBioTech, Inc.  
120 Corporate Park Dr.  
Henderson, NV 89014  
(702)566-2440

13. Midwest Seed Genetics  
P.O. box 518  
Carroll, IA 51408  
(712)792-6691

Figure 1.

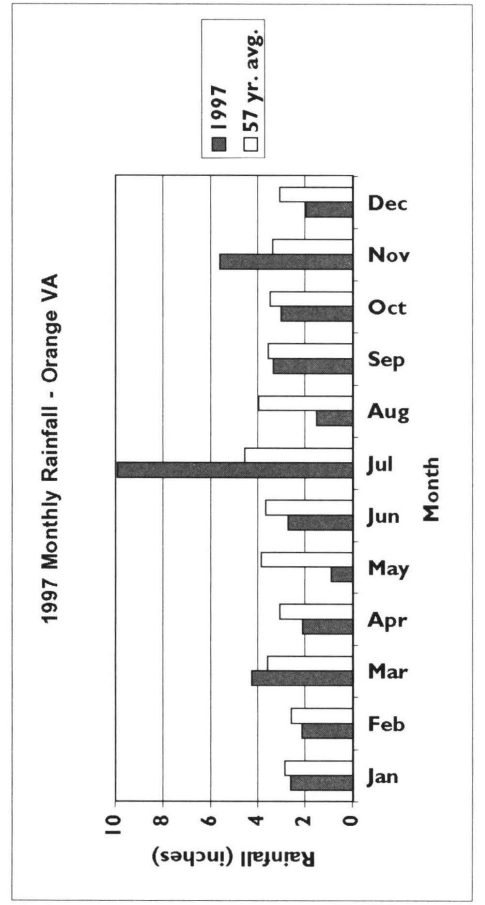
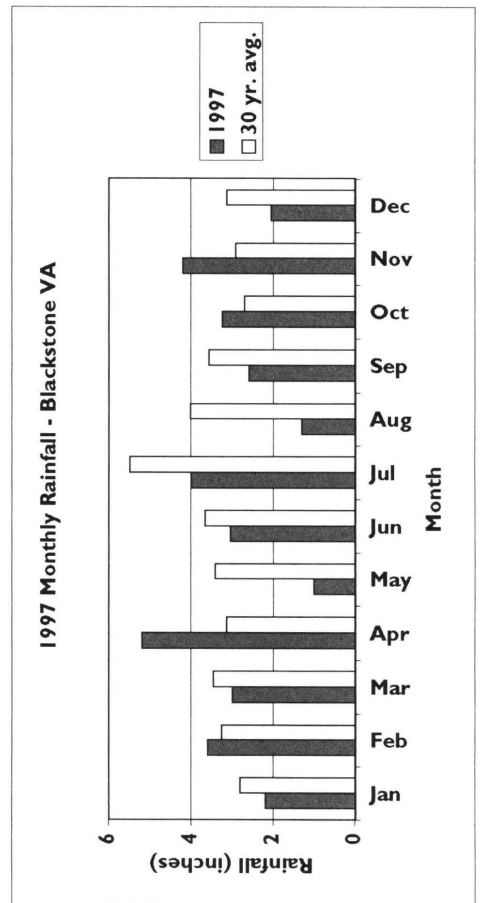
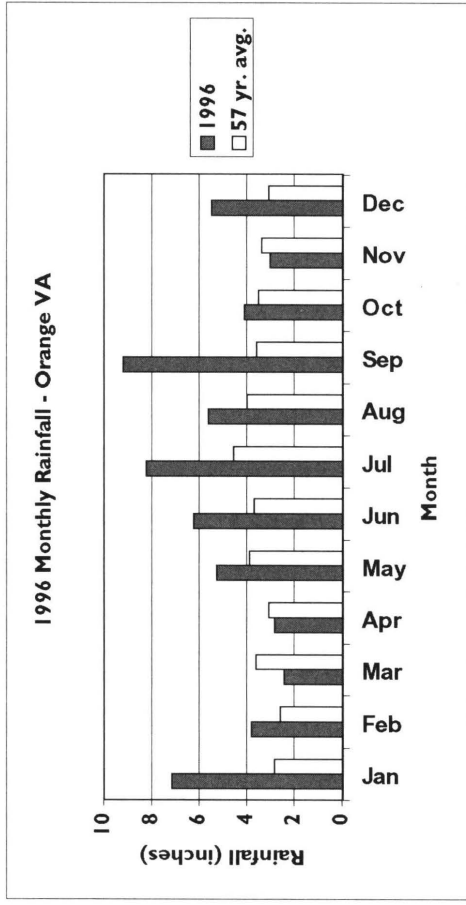
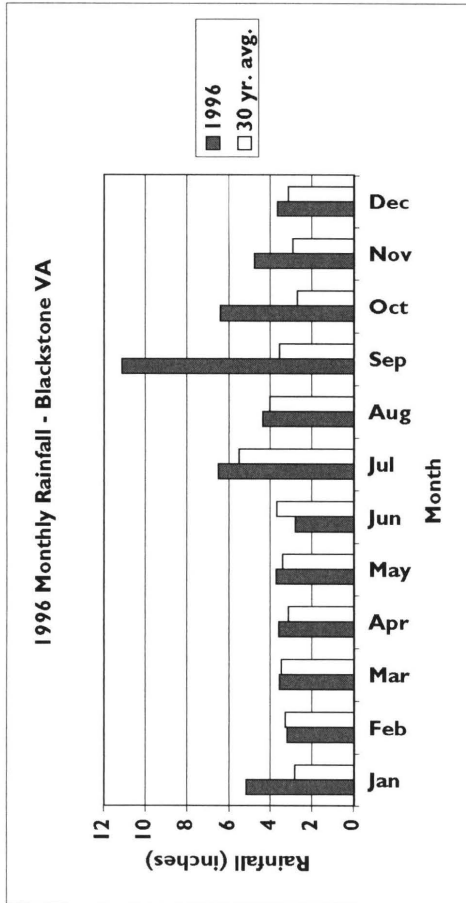
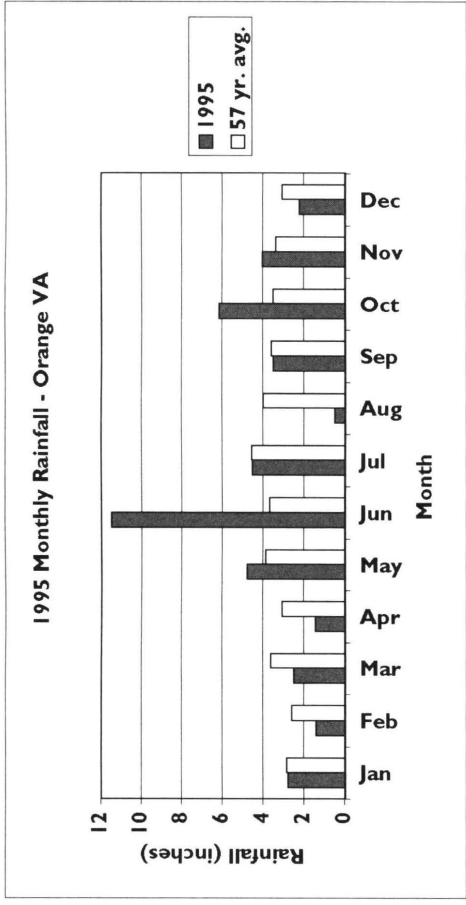
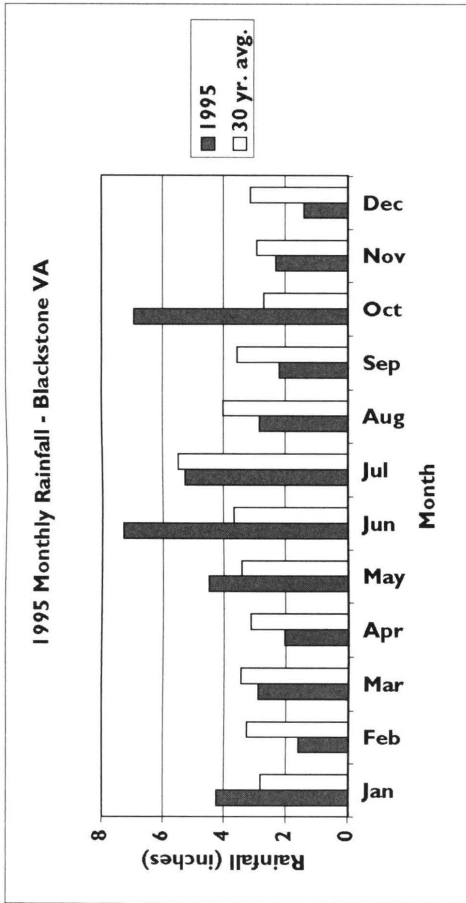


Figure 2.

