

Comparative Irritating Potencies of Smoke from  
Dual Filter Tareyton, Parliament, Winston  
and King Size Kent Cigarettes

The cigarettes furnished for and used in these tests were labeled as follows:

D. F. Tareyton, Mfg. 8-15-58, 99 cig./4 oz.

Parliament (August), 8-19-58, 104 cig./4 oz.

Winston (August), 8-19-58, 96 cig./4 oz.

K. S. Kent (August), 8-19-58, 104 cig./4 oz.

The irritation tests were conducted according to Procedure A previously published by Finnegan *et al.* (*J. Pharmacol. & Exper. Therap.* 89: 115, 1947) except that intravenously administered sodium pentobarbital anesthesia was used in place of morphine analgesia and a modified (improved) eye cup replaced the earlier described one. The third, fourth and fifth puffs of smoke from each cigarette was used. Ten cigarettes of each manufacture were tested during the period of Aug. 21, 1958 - Aug. 29, 1958. Results:

The ratio differences for each individual rabbit (exposed right eye membrane ratio minus control left eye membrane ratio) are shown in Table I and a statistical comparison (by analysis of variance) of the results on Dual Filter Tareyton cigarettes versus the other cigarettes is shown in Table II.

It is apparent that the smoke from Dual Filter Tareyton cigarettes contains significantly less edema-producing irritants than the smoke of the other cigarettes tested.

Table I

Ratio differences Produced by Smoke from  
Dual Filter Tareyton, Parliament, Winston  
and King Size Kent Cigarettes on the  
Mucous Membrane of the Rabbit Eye.

Animal No.	Dual Filter Tareyton	Parliament	Winston	King Size Kent
1	1.11	3.11	0.11	2.16
2	-0.17	3.10	5.09	1.04
3	0.70	3.33	2.02	1.61
4	0.50	3.71	6.57	1.66
5	2.57	5.89	2.19	2.65
6	2.16	2.37	2.78	3.06
7	-0.10	1.28	2.22	1.70
8	0.32	1.05	5.04	1.78
9	0.93	0.55	1.98	0.86
10	0.23	2.38	1.13	1.32
AVG.	0.83	2.71	3.25	2.12

Table II

Statistical Significances of the Differences in Irritation Produced by Smoke from Dual Filter Tareyton versus Those Produced by Parliament, Winston or King Size Kent Cigarettes.

Cigarette	Mean Ratio Difference	t-value	P-value
D. F. Tareyton Parliament	0.83 2.71	3.30	< .01
D. F. Tareyton Winston	0.83 3.25	3.66	< .01
D. F. Tareyton K. S. Kent	0.83 2.42	3.26	< .01



Fig-1

RABBIT EYE IRRITATION (RT. EYE EXPOSED)

Date	Cigarette	Animal No.	Animal Wt.	Eye	Vial No.	Tare	Neg. Pressure	Gross Wts.		Net Wts.		Ratio	Difference
								Net	Dry	Wet	Dry		
	Parliament	1	2.0	R	19	4.5777	10.45/10.5	4.8576	4.6127	0.2799	0.0350	8.00	3.14
				L	167	4.2013	10.5/9.5	4.2980	4.2212	0.0867	0.0199	4.86	
	Winston	2	2.0	R	26	4.6639	8.0/8.0	4.8060	4.6898	0.1421	0.0259	5.49	0.44
				L	37	4.5514	7.5/5.0	4.6722	4.5753	0.1208	0.0239	5.05	
	Kent	3	2.0	R	9	4.4571	8.0/9.0	4.6687	4.4830	0.2116	0.0259	8.17	2.46
				L	40	4.4345	6.0/8.5	4.5715	4.4585	0.1370	0.0240	5.71	
	Taryton	4	2.1	R	7	4.4854	9.75/9.75	4.6200	4.5072	0.1346	0.0218	6.17	1.11
				L	42	4.5557	6.5/7.0	4.6676	4.5778	0.1119	0.0221	5.06	
	Taryton	5	2.1	R	33	4.2754	9.0/10.5	4.4353	4.3031	0.1599	0.0277	5.77	-0.17
				L	168	4.3075	8.0/8.5	4.4674	4.3344	0.1599	0.0269	5.94	
	Parliament	6	1.9	R	16	4.4164	10.5/10.5	4.6953	4.4465	0.2789	0.0301	9.27	3.40
				L	166	4.4600	8.0/8.0	4.5627	4.4775	0.1027	0.0175	5.87	
	Winston	7	2.2	R	32	4.3772	8.0/8.0	4.7734	4.4128	0.3962	0.0356	11.13	5.09
				L	165	4.4637	7.0/7.0	4.5724	4.4817	0.1687	0.0180	6.04	
	Kent	8	1.9	R	41	4.4883	9.0/9.5	4.7916	4.5213	0.3033	0.0330	9.19	4.04
				L	148	4.4070	9.0/9.0	4.5141	4.4278	0.1071	0.0208	5.15	

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RABBIT EYE IRRITATION (RT. EYE EXPOSED)

Date	Cigarette	Animal No.	Animal Wt.	Eye	Vial No.	Tare	Neg. Pressure	Gross Wts.		Net Wts.		Ratio	Difference
								Wet	Dry	Wet	Dry		
8-25-58	Kent	1	2.3	R	3	4.4871	10.0, 9.75	4.5203	4.7239	0.2368	0.3322	7.013	1.64
				L	30	4.5457	8.5, 8.5	4.6303	4.5611	0.6846	0.1554	5.449	
	Taraxton	2	2.1	R	25	4.6620	11.5, 10.0	4.7931	4.6814	0.1311	0.194	6.76	0.70
				L	154	4.3420	9.0, 8.75	4.5049	4.3689	0.1629	0.269	6.06	
	Parliament	3	2.0	R	4	4.5955	11.5, 12.0	4.8234	4.6216	0.2279	0.261	8.73	3.33
				L	21	4.5825	10.5, 10.0	4.6981	4.6039	0.1156	0.214	5.40	
	Winston	4	2.2	R	13	4.5693	9.25, 10.25	4.7472	4.5866	0.1829	0.223	8.20	2.02
				L	38	4.3906	10.0, 9.5	4.5093	4.4098	0.1187	0.192	6.18	
Winston	5	2.1	R	19	4.5772	8.5, 8.0	4.9089	4.6054	0.3212	0.0279	11.87	6.57	
			L	41	4.4884	8.0, 7.0	4.5610	4.5021	0.0726	0.0137	5.30		
Kent	6	2.1	R	42	4.5557	10.0, 10.25	4.7152	4.5772	0.1601	0.0215	7.45	1.66	
			L	168	4.3074	8.0, 8.5	4.4215	4.3271	0.1141	0.0197	5.79		
Thurston	7	2.0	R	9	4.4572	11.0, 11.5	4.6067	4.4782	0.1495	0.0210	7.12	0.50	
			L	40	4.4345	9.5, 10.5	4.5404	4.4505	0.1059	0.0160	6.62		
Parliament	8	2.0	R	7	4.4855	11.0, 11.5	4.6410	4.5014	0.1555	0.0159	9.78	3.71	
			L	10	4.4164	8.75, 10.0	4.5223	4.4340	0.1069	0.0176	6.07		

RABBIT EYE IRRITATION (RT. EYE EXPOSED)

Date	Cigarette	Animal		Eye	Vial No.	Tare	Neg. Pressure	Gross Wts.		Net Wts.		Ratio	Difference
		No.	Wt.					Wet	Dry	Wet	Dry		
8-25-58	Parliament	1	1.7	R	26	4.6639	7.75, 10.0	4.5193	4.6762	0.1553	0.0123	12.63	5.89
		L			32	4.3772	9.0, 10.0, 8.5	4.4857	4.3932	0.1079	0.0160	6.74	
	Winston	2	1.7	R	33	4.2754	8.5, 8.5	4.4256	4.2943	0.1502	0.0159	7.95	2.19
		L			167	4.2013	8.0, 8.5, 7.75	4.3182	4.2216	0.1169	0.0203	5.76	
	Kent	3	2.2	R	37	4.5515	9.25, 9.5	4.7032	4.5704	0.1517	0.0189	8.03	2.65
		L			148	4.4069	9.0, 8.5, 8.0	4.5112	4.4263	0.1043	0.0194	5.38	
	Tareyton	4	2.4	R	165	4.4637	10.0, 11.0	4.6681	4.4850	0.2044	0.0213	9.60	2.57
		L			166	4.4600	10.0, 9.5, 10.0	4.6105	4.4314	0.1505	0.0214	7.03	
8-26-58	Tareyton	5	2.1	R	3	4.4570	9.0, 10.0	4.2592	4.5104	0.1719	0.0234	7.35	2.16
		L			25	4.6620	9.0, 8.0, 7.75	4.7373	4.6765	0.0753	0.0145	5.19	
	Parliament	6	1.7	R	21	4.5825	10.0, 10.0	4.7479	4.6010	0.1654	0.0185	8.94	2.37
		L			30	4.5458	9.0, 9.0, 9.0	4.6699	4.5647	0.1241	0.0189	6.57	
	Winston	7	2.4	R	13	4.5643	8.0, 9.25	4.7756	4.5881	0.2113	0.0238	8.88	2.78
		L			38	4.3907	8.0, 8.0, 7.75	4.4957	4.4079	0.1050	0.0172	6.10	
	Kent	8	1.6	R	4	4.5955	11.0, 11.0	4.7902	4.6146	0.1947	0.0191	10.19	3.06
		L			154	4.3420	10.0, 10.5, 10.75	4.4454	4.3565	0.1034	0.0145	7.13	

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RABBIT EYE IRRITATION (RT. EYE EXPOSED)

Date	Cigarette	Animal No. & Wt.	Eye	Vial No.	Tare	Neg. Pressure	Gross Wts.		Net Wts.		Ratio	Difference
							Wet	Dry	Wet	Dry		
8-26-58	Kent.	1	R	139	4.3376	9.5, 10.5	4.5451	4.3631	0.2075	0.0255	8.14	1.70
			L	145	4.4794	10.0, 9.5, 9.75	4.5760	4.4944	0.0866	0.0150	6.44	
	Tangyan	2	R	56	4.7102	11.0, 11.0	4.8461	4.7314	0.1359	0.0212	6.41	-0.10
			L	161	4.5004	9.5, 9.5, 9.0	4.6280	4.5200	0.1276	0.0196	6.51	
	Parliament	3	R	46	4.5083	10.0, 10.25	4.6443	4.5283	0.1360	0.0200	6.80	1.28
			L	162	4.6322	9.0, 9.0, 9.0	4.7272	4.6494	0.0950	0.0172	5.52	
	Winston	4	R	152	4.4166	9.0, 9.0	4.5492	4.4345	0.1326	0.0179	7.41	2.22
			L	156	4.5098	8.5, 8.0, 8.0	4.5773	4.5228	0.0675	0.0130	5.19	
Tangyan	5	R	9	4.4572	6.0, 7.0	4.6911	4.4786	0.2339	0.0214	10.93	5.04	
		L	40	4.4344	7.0, 7.0, 7.0	4.5498	4.4540	0.1154	0.0196	5.89		
Kent	6	R	19	4.5777	7.0, 10.0	4.7575	4.5945	0.1798	0.0168	10.70	4.78	
		L	42	4.5557	8.0, 8.0, 8.5	4.6409	4.5701	0.0852	0.0144	5.92		
Tangyan	7	R	41	4.4883	9.25, 9.25	4.5957	4.5064	0.1074	0.0181	5.93	0.32	
		L	168	4.3074	8.75, 8.25, 8.0	4.4079	4.3253	0.1005	0.0179	5.61		
Parliament	8	R	7	4.4954	10.0, 10.5	4.6863	4.5123	0.2009	0.0269	7.47	1.05	
		L	10	4.4166	10.0, 10.0, 9.5	4.5483	4.4371	0.1317	0.0205	6.42		

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RABBIT EYE IRRITATION (RT. EYE EXPOSED)

Date	Cigarette	Animal		Eye	Viel. No.	Tare	Neg. Pressure	Gross Wts.		Net Wts.		Ratio	Difference
		No.	Wt.					Wet	Dry	Wet	Dry		
10-27-8	Parliament	1	1.8	R	32	4.3772	10.5/10.5	4.5247	4.3980	0.1475	0.0208	7.09	0.55
				L	33	4.2753	9.9/8.5/8.5	4.4145	4.2966	0.1392	0.0213	6.54	
	Winston	2	1.9	R	37	4.5574	7.25/7.25	4.7402	4.5772	0.1888	0.0258	7.32	1.98
				L	167	4.2013	8.0/7.5/7.0	4.2915	4.2182	0.0902	0.0169	5.34	
	Kent	3	1.8	R	26	4.6638	10.0/9.75	4.8017	4.6826	0.1372	0.0188	7.34	0.86
				L	165	4.9637	8.5/8.25/8.0	4.5927	4.4836	0.1290	0.0199	6.48	
	Tarleton	4	1.7	R	148	4.4070	10.0/10.25	4.5056	4.4232	0.0986	0.0162	6.09	0.93
				L	166	4.4600	8.75/8.0/8.25	4.5425	4.4760	0.0825	0.0160	5.16	
Tarleton	5	1.6	R	21	4.5225	8.75/9.0	4.6968	4.6026	0.1143	0.0201	5.69	0.23	
			L	25	4.6623	8.0/8.25/8.0	4.7895	4.6856	0.1272	0.0233	5.46		
Parliament	6	2.1	R	3	4.4871	8.75/9.5	4.6854	4.5100	0.1983	0.0229	8.66	2.38	
			L	30	4.5458	8.5/8.5/8.0	4.6588	4.5638	0.1150	0.0180	6.28		
Winston	7	1.6	R	4	4.5755	8.75/9.75	4.7624	4.6146	0.1669	0.0191	8.74	4.13	
			L	13	4.5643	8.0/7.5/7.5	4.6473	4.5823	0.0830	0.0180	4.61		
Kent	8	1.9	R	38	4.3907	9.5/9.5	4.5285	4.4105	0.1378	0.0198	6.96	1.32	
			L	154	4.2419	8.75/10.5/8.5	4.4473	4.3606	0.1054	0.0187	5.64		

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