

Appendix A. Yearly production and precipitation at the San Joaquin Experimental Range in Madera County.

Year (Sep 1 - Aug 31)	Production (lbs/a)	Precipitation (in)
1934-35		29.4
1935-36	2057	22.65
1936-37	1694	22.96
1937-38	2662	32.09
1938-39	1452	12.25
1939-40	1936	21.22
1940-41	2057	28.33
1941-42	2037	21.54
1942-43	2427	17.24
1943-44	1631	13.79
1944-45	2594	18.99
1945-46	1815	13.86
1946-47	1815	13.72
1947-48	1491	14.51
1948-49	1391	12.39
1949-50	2842	16.00
1950-51	2495	21.38
1951-52	2562	24.69
1952-53	1956	15.71
1953-54	2584	15.58
1954-55	2181	16.74
1955-56	1970	26.45
1956-57	1963	14.52
1957-58	2138	32.04
1958-59	785	10.12
1959-60	1956	15.53
1960-61	1353	12.49

1961-62	1971	20.68
1962-63	3055	20.04
1963-64	2494	12.75
1964-65	3773	19.65
1965-66	2182	12.81
1966-67	2934	27.97
1967-68	2298	11.93
1968-69	2724	32.44
1969-70	3026	17.36
1970-71	2727	15.8
1971-72	1763	10.73
1972-73	3031	24.05
1973-74	2849	22.7
1974-75	2618	18.87
1975-76	2555	12.75
1976-77	1042	9.07
1977-78	4524	31.27
1978-79	3355	19.99
1979-80	3958	20.31
1980-81	2549	13.00
1981-82	3911	25.00
1982-83	3630	37.4
1983-84	1824	16.27
1984-85	1690	13.62
1985-86	2653	20.8
1986-87	968	11.14
1987-88	807	12.04
1988-89	988	12.98
1989-90	845	13.5
1990-91	2338	16.11
1991-92	2699	16.24

1992-93	1829	25.71
1993-94	1328	13.33
1994-95	2355	31.72
1995-96	2651	14.13
1996-97	2286	24.93
1997-98	2508	31.82
1998-99	2191	13.06
1999-2000	1893	32.72
2000-01	1852	17.27
2001-02	2078	13.53
2002-03	3717	13.3
2003-04	1100	10.75
2004-05	3970	23.05
2005-06	2561	20.06
2006-07	852	8.28
2007-08	1646	
2008-09	1403	
2009-10	3199	
2010-11	1918	
2011-12	2110	
2012-13	1463	
2013-14		
2014-15		
2015-16		
2016-17		
2017-18		
2018-19		
2019-2020		
Average	2238	19
50 % Ave	1119	9.45

Appendix B. Yearly production at the University of California Hopland Research and Extension Center in Hopland, CA.

Year	Production (lbs/a)
1952-53	1994
1953-54	1794
1954-55	897
1955-56	1196
1956-57	1296
1957-58	2791
1958-59	1695
1959-60	1695
1960-61	2193
1961-62	1296
1962-63	2891
1963-64	3489
1964-65	2592
1965-66	2093
1966-67	2592
1967-68	2193
1968-69	2592
1969-70	1695
1970-71	1894
1971-72	2093
1972-73	3389
1973-74	3090
1974-75	2990
1975-76	2592
1976-77	1495
1977-78	2990

1978-79	2392
1979-80	2791
1980-81	2592
1981-82	2791
1882-83	2592
1983-84	2990
1984-85	2592
1985-86	2610
1986-87	1800
1987-88	1840
1988-89	1830
1989-90	2040
1990-91	2430
1991-92	2920
1992-93	3370
1993-94	2450
1994-95	3230
1995-96	2730
1996-97	1770
1997-98	3340
1998-99	2450
1999-2000	2280
2000-01	2361
2001-02	1851
2002-03	2637
2003-04	2611
2004-05	3474
2005-06	2368
2006-07	2330
2007-08	2486
2008-09	2692

2009-10	2692
2010-11	3194
2011-12	2242
2012-13	2359
2013-14	
2014-15	
2015-16	
2016-17	
2017-18	
2018-19	
2019-20	
Average	2404
50 % Ave	1202

Appendix C. Yearly production data from University of California Sierra Foothill
Research and Extension Center.

Year	Production (lbs/a)
1979-80	1670
1980-81	2560
1981-82	2770
1982-83	4630
1986-87	1486
1987-88	1071
1988-89	2527
1990-91	2565
1991-92	2984
1992-93	4696
1993-94	2767
1994-95	3213
1995-96	4123
1996-97	3201
1997-98	2797
1998-99	1746
1999-00	3580
2000-01	3082
2001-02	2754
2002-03	4348
2003-04	2831
2004-05	4410
2005-06	4122
2006-07	2977
2007-08	1847
2008-09	2815
2009-10	3176

2010-11	3794
2011-12	2389
2012-13	2881
2013-14	
2014-15	
2015-16	
2016-17	
2017-18	
2018-19	
2019-20	
Average	2994
50 % Ave	1497

Appendix D. Yearly production data from the Hawes Ranch in Shasta County, CA.

Year	Production (lbs/a)	Precipitation (in)
1973-74	1,584	41.6
1974-75	2,711	32.11
1975-76	1,889	18.83
1976-77	850	15.8
1977-78	1,440	52.31
1978-79	1,564	30.65
1979-80	1,592	40.29
1980-81	2,937	35.49
1981-82	2,348	52.48
1882-83	1,804	61.32
1983-84	942	38.08
1984-85	1,331	25.52
1985-86	863	45.89
1986-87	878	24.47
1987-88	630	30.23
1988-89	612	33.55
1989-90	859	29.93
1990-91	645	22.07
1991-92	2,328	28.51
1992-93	1,704	52.9
1993-94	783	23.6
1994-95	783	57.22
1995-96	1,885	38.45
1996-97	857	31.95
1997-98	2,875	65.61

1998-99	977	30.94
1999-2000	1,802	34.28
2000-01	1,612	30.15
2001-02	1,285	28.87
2002-03	1,758	35.57
2003-04	1,499	35.05
2004-05	2,702	38
2005-06	1,518	45.22
2006-07	1,758	22.66
2007-08	1,012	24.07
2008-09	843	23.71
2009-10	1876	30.45
2010-11	1752	36.26
2011-12	1951	23.62
2012-13	1257	28.46
2013-14		
2014-15		
2015-16		
2016-17		
2017-18		
2018-19		
2019-20		
Average	1505	35
50 % Ave	753	17
Years of Data	40	

Appendix E. Yearly production data from several locations in San Luis Obispo County, CA.

Year	Adelaida	Bitter-water	Camatta	Cambria	Carrizo	Creston	Huasna	Morro Bay	Pozo	Shandon	Soda Lake	Cal Poly
2000-01	2343		1854	6122	3457		4135	3627				
2001-02	4359		1027	7334	833		4219	2316				
2002-03	5071		1983	9454	2590		4752	5730		2693		
2003-04	3106	1728	876	8135	1974		6455	2949		2328	730	
2004-05	7928	3840	1773	8409	4976		9026	7581		5578	2506	
2005-06	4980	3555	2764	10261	7182		8434	4658		8571	3956	
2006-07	1839	176	482	4312	1876		4182	1871		2309	29	
2007-08	4640	2907	1990	7324	2021		5112	3587		3844	1281	
2008-09	3354	982	546	5257	1940		3704	2494		1370	416	
2009-10	9723	4087	2289	9786	5170	1987	9232	5004	4540	4914	1447	7396
2010-11	2644	4507	3752	7332	4820	1755	4340	4048	3675	3102	2124	4724
2011-12	3724	971	1084	5083	5378	881	3336	3248	4081	1940	490	6589
2012-13	1334	317	262	6282	537	460	1993	2175	2385	1376	141	3981
2013-14												
2014-15												
2015-16												
2016-17												
2018-19												
2019-20												
Average	4234	2307	1591	7315	3289	1271	5302	3791	3670	3457	1312	5672
50 % Ave	2117	1153	795	3657	1644	635	2651	1896	1835	1728	656	2836

Appendix F. Yearly production data from several locations in Western Fresno County, CA.

Year	Arburua	Belgarra	Climara	Delgado	Exclose	Grazer	Wisflat
	Production (lb/a)						
1998-99		3,000		346	1,656	800	
1999-2000		1,805		979	1,593	1,402	
2000-01		1,228		921	1,075	1,497	
2001-02	288	1,094		269	211	288	134
2002-03	461	1,190		422	374	518	240
2003-04	346	2,150		614	230	1,229	345
2004-05	2,224	2,496	4,253	1,088	1,728	3,110	928
2005-06	3360	950		950	1478	1834	3302
2006-07	509	2624		2624	86	0	
2007-08	744	1792		1792	840	2016	456
2008-09	403	557		408		634	307
2009-10	538	3494		845	1632	1670	499
2010-11	2822	4954		1555	2957	2035	1056
2011-12	173	58		115	250	326	96
2012-13	730	1094		144	422	269	144
2013-14							
2014-15							
2015-16							
2016-17							
2018-19							
2019-20							
Average	1,050	1,899	4,253	871	1,038	1,175	682
50 % Ave	525	950	2127	436	519	588	341

Appendix G. Yearly production data from several locations in West Merced County, CA.

Year	Arburua	Ballvar	Onell	Milsholm	Peckham	Quinto	Conosta	Los Banos	Wisflat
2001-02	288	2870	1219	1930	1574	1027	845	922	134
2002-03	461	2,515	1,632	1,675	1,565	2,246	1,061	1,402	240
2003-04	422	1,987	2,064	1,210	1,181	3,475	1,324	2,718	346
2004-05	2,224		3,379	2,285	2,390		2,798	3,283	928
2005-06	3,360	4536	3456	3192	2772	2220	3888	2592	3300
2006-07	511	446	545	1025	1080	588	595	528	
2007-08	744	3802	2995	1371	1459	1248	1416	2677	456
2008-09	403	2899	2246	1286	864		1088	816	307
2009-10	538	3264	2611		1824		1699	2688	499
2010-11	2822	3302	3283	2170	2362		2755	3782	1056
2011-12									
2012-13	730	1901	1286	643	403		595	422	144
2013-14									
2014-15									
2015-16									
2016-17									
2017-18									
2018-19									
2019-20									
Average	1137	2752	2247	1679	1589	1801	1642	1985	741
50% Ave	568	1376	1123	839	794	900	821	992	371

Sierra Nevada Foothills (7 Sites)

Year	Mountain Ranch	Paloma	Copperopolis	Ione	Sutter Creek	Latrobe
1995-96		5299	2110	4992	4857	4742
1996-97	3789	1731	2286	2621	3356	1045
1997-98	4932	5517	2367	4547	3306	3309
1998-99	5664	2115	4128	3552	3454	1469
1999-00	5184	6192	3178	2784	2176	1728
2000-01	2867	3739	3122	3824	4349	1363
?????						
2002-03	4285	2203	4483	3936	3296	963
2003-04	1443	3789	1082	6595	4192	1347
2004-05	6754	1090	6210	1869	1917	722
2005-06	3875	4181	2429	6021	4331	3485
2006-07	5603	3238	4061	3270	3645	950
2007-08	3894	3677	3453	3946	4944	2624
2008-09	6461	2179	5952	2134	4067	1766
2009-10	7232		8816	7654	5152	4266
2010-11	6323		4606	2198	4301	1696
2011-12	6099		3926	3309	4304	2672
2012-13	4825		2354	4058	3694	1833
2013-14						
2014-15						
2015-16						
2016-17						
2017-18						
2018-19						
2019-20						
Average	4952	3458	3798	3959	3844	2116
50 % Ave	2476	1729	1899	1980	1922	1058

Sierra Nevada Foothills (7 Sites)

El Dorado	Keystone
3838	
4410	
4829	
3696	
3562	
2899	
2042	
2802	
5606	
1635	
3456	
5962	2190
5366	4673
3043	4650
3587	4934
3292	2972
3752	3884
1876	1942