

CUADRO 7.2.2 - CALCULO DE LAS PERDIDAS ECONOMICAS OCASIONADAS POR EL FENOMENO DE LAS AGUAS CLARAS

Precio de la manzana y pera: 0,05 a 0,12 \$/kg
Tasa de interés: 10 % anual
Pérdida por fríasica entre 0 y 1 m.: 20%
Incidencia de a. dasas en salinidad: 25 %
Pérdida por fríasica entre 1 y 1.5 m.: 10%
Incidencia de a. dasas en capa fríasica: 25 %

PERDIDAS ECONOMICAS POR SALINIDAD EN VID

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	1.733	1.018	0.0156	27.446	185.313
1980	1.733	1.018	0.0313	55.091	336.933
1981	1.733	1.018	0.0469	82.837	450.454
1982	1.549	1.048	0.0625	107.887	545.214
1983	1.565	1.079	0.0825	105.465	484.608
1984	1.481	1.110	0.0625	102.870	428.877
1985	1.386	1.141	0.0625	99.577	378.143
1986	1.312	1.173	0.0625	96.181	332.044
1987	1.228	1.205	0.0625	92.478	290.235
1988	1.144	1.237	0.0625	88.462	252.301
1989	1.060	1.269	0.0625	84.128	218.205
1990	976	1.302	0.0625	79.470	187.387
1991	892	1.336	0.0625	74.485	159.685
1992	808	1.369	0.0625	69.167	134.786
1993	724	1.403	0.0625	63.510	112.512
1994	696	1.412	0.0625	61.464	98.989
1995	669	1.421	0.0625	59.387	86.949
1996	641	1.430	0.0625	57.279	76.238
1997	613	1.439	0.0625	55.139	66.719
1998	585	1.448	0.0625	52.918	58.559
1999	557	1.256	0.0625	71.626	71.626
SUBTOTAL					4.977.104

PERDIDAS ECONOMICAS POR SALINIDAD EN PERA Y MANZANA

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	6.722	2.760	0.0156	289.904	1.950.326
1980	6.722	2.760	0.0313	579.807	3.546.047
1981	6.722	2.760	0.0469	869.711	4.835.518
1982	6.703	2.777	0.0625	1.163.163	5.879.173
1983	6.683	2.793	0.0825	1.168.392	5.393.540
1984	6.683	2.808	0.0625	1.169.304	4.884.472
1985	6.643	2.823	0.0625	1.171.261	4.402.291
1986	6.623	2.837	0.0625	1.174.165	4.053.605
1987	6.603	2.850	0.0625	1.176.159	3.691.292
1988	6.583	2.863	0.0625	1.177.926	3.360.476
1989	6.563	2.875	0.0625	1.179.186	3.058.511
1990	6.543	2.886	0.0625	1.180.248	2.782.962
1991	6.523	2.897	0.0625	1.181.007	2.531.594
1992	6.504	2.917	0.0625	1.182.534	2.310.270
1993	6.484	2.936	0.0625	1.183.842	2.107.878
1994	6.557	3.000	0.0625	1.229.648	1.985.361
1995	6.631	3.064	0.0625	1.269.656	1.885.361
1996	6.704	3.128	0.0625	1.309.853	1.743.414
1997	6.778	3.188	0.0625	1.350.225	1.633.772
1998	6.851	3.169	0.0625	1.368.839	1.492.523
1999	6.925	3.150	0.0625	1.363.281	1.363.281
SUBTOTAL					64.874.210

PERDIDAS ECONOMICAS POR FRÍATICA ALTA EN VID

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	1.386	1.018	0.0138	17.629	118.600
1980	1.386	1.018	0.0350	35.258	215.837
1981	1.386	1.018	0.0375	52.888	294.051
1982	1.319	1.048	0.0500	69.090	349.260
1983	1.252	1.079	0.0500	67.497	310.149
1984	1.184	1.110	0.0500	65.709	274.481
1985	1.117	1.141	0.0500	63.729	242.011
1986	1.050	1.173	0.0500	61.586	212.508
1987	983	1.205	0.0500	59.186	185.751
1988	915	1.237	0.0500	56.815	161.531
1989	848	1.269	0.0500	53.842	139.651
1990	781	1.302	0.0500	50.861	119.928
1991	714	1.336	0.0500	47.870	102.186
1992	647	1.369	0.0500	44.267	86.263
1993	579	1.403	0.0500	40.446	72.008
1994	557	1.412	0.0500	39.337	63.353
1995	535	1.421	0.0500	38.008	55.647
1996	513	1.430	0.0500	36.669	48.793
1997	490	1.439	0.0500	35.289	42.700
1998	468	1.448	0.0500	40.908	44.599
1999	446	2.056	0.0500	45.841	45.841
SUBTOTAL					3.185.346

PERDIDAS ECONOMICAS POR FRÍATICA ALTA EN VID

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	4.332	1.018	0.0083	27.446	185.313
1980	4.332	1.018	0.0125	55.091	336.933
1981	4.332	1.018	0.0188	82.837	450.454
1982	4.121	1.048	0.0250	107.887	545.214
1983	3.911	1.079	0.0250	105.465	484.608
1984	3.701	1.110	0.0250	102.870	428.877
1985	3.491	1.141	0.0250	98.577	378.143
1986	3.281	1.173	0.0250	96.181	332.044
1987	3.071	1.205	0.0250	92.478	290.235
1988	2.861	1.237	0.0250	88.462	252.301
1989	2.651	1.269	0.0250	84.128	218.205
1990	2.441	1.302	0.0250	79.470	187.387
1991	2.231	1.336	0.0250	74.485	159.685
1992	2.021	1.369	0.0250	69.167	134.786
1993	1.811	1.403	0.0250	63.510	112.512
1994	1.741	1.412	0.0250	61.464	98.989
1995	1.672	1.421	0.0250	59.387	86.949
1996	1.602	1.430	0.0250	57.279	76.238
1997	1.533	1.439	0.0250	55.139	66.719
1998	1.463	1.448	0.0250	52.918	58.559
1999	1.394	2.056	0.0250	71.626	71.626
SUBTOTAL					4.977.104

PERDIDAS ECONOMICAS POR FRÍATICA ALTA EN MANZANA Y PERA

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	5.378	2.760	0.0125	185.538	1.248.209
1980	5.378	2.760	0.0250	371.076	2.269.470
1981	5.378	2.760	0.0375	556.615	3.094.732
1982	5.362	2.777	0.0500	744.424	3.762.871
1983	5.346	2.793	0.0500	746.491	3.438.108
1984	5.330	2.808	0.0500	748.354	3.126.062
1985	5.314	2.823	0.0500	750.016	2.848.186
1986	5.298	2.837	0.0500	751.478	2.594.307
1987	5.282	2.850	0.0500	752.742	2.362.427
1988	5.266	2.863	0.0500	753.809	2.150.705
1989	5.251	2.875	0.0500	754.680	1.957.447
1990	5.235	2.886	0.0500	755.359	1.781.096
1991	5.219	2.897	0.0500	755.845	1.620.220
1992	5.203	2.917	0.0500	758.742	1.478.573
1993	5.187	2.936	0.0500	761.499	1.349.042
1994	5.166	3.000	0.0500	786.975	1.267.431
1995	5.304	3.064	0.0500	812.580	1.188.698
1996	5.363	3.126	0.0500	838.306	1.119.795
1997	5.422	3.188	0.0500	864.144	1.046.614
1998	5.481	3.169	0.0500	868.377	956.215
1999	5.540	3.150	0.0500	872.500	872.500
SUBTOTAL					41.519.494

PERDIDAS ECONOMICAS POR FRÍATICA ALTA EN MANZANA Y PERA

AÑO	SUPERFICIE AFECTADA [ha]	INGRESO BRUTO [\$/ha]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	16.808	2.760	0.0083	289.904	1.950.326
1980	16.808	2.760	0.0125	579.807	3.546.047
1981	16.808	2.760	0.0188	869.711	4.835.518
1982	16.756	2.777	0.0250	1.163.163	5.879.173
1983	16.707	2.793	0.0300	1.168.392	5.393.540
1984	16.657	2.808	0.0250	1.169.304	4.884.472
1985	16.607	2.823	0.0250	1.171.261	4.402.291
1986	16.557	2.837	0.0250	1.174.165	4.053.605
1987	16.508	2.850	0.0250	1.176.159	3.691.292
1988	16.458	2.863	0.0250	1.177.926	3.360.476
1989	16.408	2.875	0.0250	1.179.186	3.058.511
1990	16.358	2.886	0.0250	1.180.248	2.782.962
1991	16.309	2.897	0.0250	1.181.007	2.531.594
1992	16.259	2.917	0.0250	1.182.534	2.310.270
1993	16.209	2.936	0.0250	1.183.842	2.107.878
1994	16.393	3.000	0.0250	1.229.648	1.985.361
1995	16.577	3.064	0.0250	1.269.656	1.885.361
1996	16.760	3.128	0.0250	1.309.853	1.743.414
1997	16.844	3.188	0.0250	1.350.225	1.633.772
1998	17.128	3.169	0.0250	1.368.839	1.492.523
1999	17.312	3.150	0.0250	1.363.281	1.363.281
SUBTOTAL					64.874.210

COSTO ADICIONAL EN OPERACION Y MANTENIMIENTO DE CANALES

AÑO	SUPERFICIE AFECTADA [ha]	CANAL DE RIEGO [m]	INFLUENCIA [\$/ha]	ANUALIDAD [\$/ha]	ACTUALIZ. [\$/ha]
1979	58.500	65	0.0500	190.125	1.279.068
1980	58.500	65	0.1000	380.250	2.325.574
1981	58.500	65	0.1500	570.375	3.177.238
1982	58.500	65	0.2000	760.500	3.843.925
1983	58.500	65	0.2000	760.500	3.494.477
1984	58.500	65	0.2000	760.500	3.176.797
1985	58.500	65	0.2000	760.500	2.887.997
1986	58.500	65	0.2000	760.500	2.625.452
1987	58.500	65	0.2000	760.500	2.386.776
1988	58.500	65	0.2000	760.500	2.169.795
1989	58.500	65	0.2000	760.500	1.972.541
1990	58.500	65	0.2000	760.500	1.793.210
1991	58.500	65	0.2000	760.500	1.630.199
1992	58.500	65	0.2000	760.500	1.481.999
1993	58.500	65	0.2000	760.500	1.347.272
1994	58.500	65	0.2000	760.500	1.224.793
1995	58.500	65	0.2000	760.500	1.113.448
1996	58.500	65	0.2000	760.500	1.012.226
1997	58.500	65	0.2000	760.500	920.205
1998	58.500	65	0.2000	760.500	836.550
1999	58.500	65	0.2000	760.500	760.500
SUBTOTAL					41.454.049

10

1 Tasa = 10
2 Precio Vid
3 1981 1993 1997 1999
4 0,11 0,14 0,14 0,2
5
6

Pérdidas fríasica 0 - 1 = 20
Precio Manzana y otros
1981 1991 1999
0,12 0,11 0,105

Varación Precio
1

AÑO	SUPERFICIE		SUPERFICIE		SUPERFICIE		SUPERFICIE		INGRESO		INGRESO		SUPERFICIE		SUPERFICIE		RENDIMIENTO		RENDIMIENTO		PRECIO
	VID	Manz. Y PERA	VID	Manz. Y PERA	VID	Manz. Y PERA	VID	Manz. Y PERA	BRUTO	Manz. Y PERA	BRUTO	Manz. Y PERA	CULTIVADA	Manz. Y PERA	CULTIVADA	Manz. Y PERA	kg/ha	Manz. Y PERA	kg/ha		
	SALINIDAD	SALINIDAD	Fi. 0 - 1	Fi. 0 - 1	Fi. 1 - 1.5	Fi. 1 - 1.5	Fi. 1 - 1.5	Fi. 1 - 1.5					TOTAL								
1979	1.733	6.722	1.086	6.378	4.332	18.804	1.018	2.760	42.275	8.663	33.612	8.250	23.000	1.119	23.000	1.119	23.000	1.119	23.000	1.119	
1980	1.733	6.722	1.386	5.378	4.332	18.804	1.018	2.760	42.275	8.663	33.612	8.250	23.000	1.119	23.000	1.119	23.000	1.119	23.000	1.119	
1981	1.733	6.722	1.386	5.378	4.332	18.804	1.018	2.760	42.275	8.663	33.612	8.250	23.000	1.119	23.000	1.119	23.000	1.119	23.000	1.119	
1982	1.849	6.703	1.319	5.362	4.121	16.768	1.048	2.777	41.765	8.643	33.413	8.234	23.333	1.113	23.333	1.113	23.333	1.113	23.333	1.113	
1983	1.865	6.585	1.284	5.362	3.911	17.703	1.079	2.793	41.258	8.623	33.215	8.215	23.667	1.107	23.667	1.107	23.667	1.107	23.667	1.107	
1984	1.841	6.683	1.184	5.330	3.701	16.607	1.101	2.808	40.716	7.943	33.314	8.443	24.000	1.118	24.000	1.118	24.000	1.118	24.000	1.118	
1985	1.396	6.643	1.117	5.314	3.491	16.607	1.141	2.823	40.196	6.982	33.214	8.508	24.333	1.120	24.333	1.120	24.333	1.120	24.333	1.120	
1986	1.312	6.623	1.050	5.298	3.281	16.607	1.175	2.837	39.677	6.592	33.115	8.572	24.667	1.123	24.667	1.123	24.667	1.123	24.667	1.123	
1987	1.228	6.603	990	5.282	3.069	16.607	1.209	2.851	39.158	6.182	33.016	8.640	25.000	1.126	25.000	1.126	25.000	1.126	25.000	1.126	
1988	1.144	6.583	915	5.266	2.861	16.458	1.237	2.863	38.637	5.772	32.916	8.701	25.333	1.128	25.333	1.128	25.333	1.128	25.333	1.128	
1989	1.060	6.563	848	5.251	2.661	16.408	1.269	2.875	38.118	5.360	32.816	8.765	25.667	1.130	25.667	1.130	25.667	1.130	25.667	1.130	
1990	978	6.543	781	5.235	2.441	16.361	1.302	2.887	37.598	4.948	32.716	8.829	26.000	1.133	26.000	1.133	26.000	1.133	26.000	1.133	
1991	892	6.523	714	5.219	2.231	16.308	1.336	2.897	37.078	4.561	32.617	8.893	26.333	1.135	26.333	1.135	26.333	1.135	26.333	1.135	
1992	808	6.504	647	5.203	2.021	16.259	1.369	2.917	36.559	4.041	32.518	8.958	26.667	1.138	26.667	1.138	26.667	1.138	26.667	1.138	
1993	724	6.484	579	5.187	1.811	16.209	1.403	2.936	36.039	3.621	32.418	10.023	27.000	1.140	27.000	1.140	27.000	1.140	27.000	1.140	
1994	657	6.464	511	5.169	1.594	16.159	1.437	2.955	35.519	3.204	32.318	10.357	27.333	1.143	27.333	1.143	27.333	1.143	27.333	1.143	
1995	669	6.443	533	5.154	1.672	16.577	1.421	3.004	36.496	3.343	33.153	10.151	28.000	1.140	28.000	1.140	28.000	1.140	28.000	1.140	
1996	641	6.704	513	5.363	1.602	16.760	1.430	3.126	36.725	3.204	33.521	10.216	29.250	1.140	29.250	1.140	29.250	1.140	29.250	1.140	
1997	613	6.778	490	5.422	1.533	16.944	1.439	3.188	36.953	3.065	33.888	10.280	30.000	1.140	30.000	1.140	30.000	1.140	30.000	1.140	
1998	595	6.851	461	5.481	1.463	17.128	1.448	3.250	37.182	2.926	34.263	10.349	30.750	1.140	30.750	1.140	30.750	1.140	30.750	1.140	
1999	557	6.928	446	5.540	1.394	17.312	2.058	3.150	37.410	2.787	34.623	10.280	30.000	1.140	30.000	1.140	30.000	1.140	30.000	1.140	