APPENDIX 1

THE CROP INSURANCE SCHEME REGULATIONS

The Act requires growers who produce in excess of twenty tonnes of fruit in the immediate preceding season to effect Fruit Crop Insurance in respect to fruit which is to be grown for marketing as packed fruit

Packed fruit is defined as follows

"a quantity of fruit which is -

a. Produced in any year comeencing on 1st July by a grower to whom the Act apples; and

b. measured as the equivalent standard cartons, each containing 18 kilograms of fruit, and includes any such quantity of fruit which is sold in a carton, bin, bag, or any other container, whether by way of roadside, local, mainland or overseas sale but does not include fruit which is produced for canning, juicing or any other from of processing or which is dumped."

Only 90% of the base insurable quantity of fruit can be insured. This term is defined as:-

the average quantity of packed fruit produced from the trees grown on all the land occupied by a grower in Tasmania during the 4-year period immediately preceding 1 July 1991; or

such quantity of packed fruit as the Board may pursuant to Regulation 12, determine to be the base insurable quantity of packed fruit produced by the grower.

Regulation 12 provides -
"Where a grower to whom the Act applies satisfies the Board that there was during the 4 year period or the current season a substanital change in the amount of packed fruit produced by that grower as appears to be just and equitable, having regard to the

nature of the change in the amount of packed fruit produced or to be produced by that grower."

Percent base premium paid in preceding season	Percent base premium paid for current scheme	
	Claim in preceding season	No claim in preceding season
60	80	60
70	90	60
80	100	70
90	110	80
100	120	90
110	130	100
120	140	110
130	150	120
140	160	130
150	160	140
160	160	160

Source: (Act 1982)

APPENDIX 2

GROWER DISCUSSION PROFORMA

AIM OF DISCUSSION
I have been evaluating the compulsory crop insurance scheme on the basis of its impact on the businesses operating in the apple industry.

Part of the work is in talking to a couple of growers about their orchards, about their business and about their attitudes to insurance. The reason for this is people are a very important part of the evluation process.

What I would like to talk to you is about your orchard business. The information remains confidential. Some informations will be contained in my study but no reference will be made by name. My interest being in an evaluation of the scheme rather than an evaluation of the person.

QUESTIONS
General
How many years have you worked your orchard area?

What area of orchard is under your control?

Who operates this orchard area?

Family
Self
Company
Other

Do you pack your own fruit?
If no what does it cost you each year?

ORCHARD INFORMATION

If you were to group your varieties into 4 representative varieties; Goldies, Red Dels, Older style varieties and new varieties such as Red Fuji what areas would you grow of each

Old style varieties, eg democrat

Golden delicious

Red delicious

New varieties eg Red Fuji

What yield for a mature orchard would you expect each year and what packout?

Old style varieties

Golden delicious

Red delicious

New varieties

For the four varieties what average price would you expect to receive for your first grade fruit?

Old style varieties

Golden delicious

Red delicious

New varieties

In terms of growing costs which would be the cheapest variety to grow, which would be the most expensive

Old style varieties

Golden delicious

Red delicious

New varieties

INSURANCE
How many times have you made a claim for damaged fruit since 1982? Do you know which year?

For what reason did you make the claim?

Hail

Frost

Other

Chances of Frost damage.
There are a few things I am looking at here; The chances of frost in your orchard at various times of the year, the number of frosts in that period and the chances that it causes damage to your crop and the amount of damage it would cause.

TIME	NUMBER	light damage	heavy damage	destroyed
Early Oct	0 -			
Late Oct	0 -			
Early Nov	0 -			
Late Nov	0 -			
Early Dec	0 -			

Damage levels
None

Low

Medium

Totally destroyed

HAIL

For hail how often would you expect a storm

occassionally

one a year

two a year

>2 a year

What level of damages do you get from hail.

None

Low

Medium

High.

THE INSURANCE SCHEME

What do you think of the current crop insurance scheme that runs in the apple industry?

What is your aim when you insure your crop under the Scheme?

Would you be interested in paying a higher premium if you knew in a bad year the payout would be covering most of your growing costs?

If crop insurance was not compulsory, would you still insure your crop?

If there was no compulsory insurance scheme would you use other methods of crop protection?

Hail netting

Frost sprinklers

Methods of business protection

Crop Revenue insurance

Just grin and bear it

Put away money in a good year and hold until a bad year

APPENDIX 3

SUMMARY OF CLIMATIC DATA

3.1. INCIDENCE OF FROST EVENTS AT DPIF's GROVE RESEARCH STATION

For each month of the critical period since records began shown in Table C1, an @RISK risk discrete function was used.

for October the distribution for frost events was

=riskdiscrete({0,1,2,3,4,5,6,7,8,9},{5,1,4,7,4,4,2,3,2,2})

for November the distribution for frost events was

=riskdiscrete({0,1,2,3,4,5,6,7,8,9},{15,7,6,1,1,5,0,0,0,2})

for December the distribution for frost events was

=riskdiscrete({0,1,2,3,4},{20,10,2,4,1})

3.2 SUMMARY OF HAIL DATA FOR 1957-1993 FOR GROVE RESEARCH STATION

The distribution developed for the simulationS for hail events was an @RISK risk discrete function.

=riskdiscrete({0,1,2,3},{21,11,4,2})

The source information for this distribution is found in the Table C2.

Table C1

Summary of Frost Events at Grove for 1957-93

YEAR	EARLY OCT.	LATE OCT.	EARLY NOV.	LATE NOV	EARLY DEC
1957	4	1	5	4	0
1958	1	5	0	1	2
1959	4	5	3	1	0
1960	3	5	2	3	1
1961	1	1	0	2	0
1962	4	1	1	0	2
1963	3	0	5	0	4
1964	0	0	0	0	0
1965	3	1	0	0	0
1966	3	1	1	0	3
1967	3	2	0	0	0
1968	6	2	1	0	0
1969	4	5	3	2	0
1970	2	3	1	1	2
1971	1	1	0	0	0
1972	4	5	3	2	0
1973	4	0	0	1	0
1974	5	2	1	0	0
1975	1	4	1	2	1
1976	3	4	0	0	0
1977	1	6	6	3	4
1978	4	4	2	0	1
1979	4	2	1	0	1
1980	2	0	1	1	1
1981	1	2	4	1	0
1982	0	1	0	0	1
1983	3	0	0	0	1
1984	1	3	1	1	0
1985	2	1	0	0	0
1986	2	0	0	0	1
1987	0	0	0	0	0
1988	0	0	0	0	2
1989	0	0	0	0	1
1990	3	0	0	0	0
1991	3	0	0	0	0
1992	2	1	0	0	1
1993	0	0	1	1	0

Table C2

Hail Events at Grove 1957-93

Year	No of hail events per growing season
1957	0
1958	0
1959	1
1960	0
1961	1
1962	1
1963	0
1964	1
1965	3
1966	2
1967	0
1968	1
1969	1
1970	0
1971	2
1972	0
1973	0
1974	0
1975	0
1976	0
1977	2
1978	0
1979	0
1980	1
1981	0
1982	0
1983	0
1984	0
1985	0
1986	3
1987	1
1988	0
1989	1
1990	2
1991	0
1992	0
1993	1

APPENDIX 4

STRUCTURE OF THE SIMULATION MODEL USED

	A	B	C	D	E	F	G	H	I	J	K
1		INVESTMENT ANALYSIS									
2		APPLE ORCHARD IN TASMANIA									
3	CASE STUDY NUMBER:	THREE									
4											
5	**BUSINESS TYPE**	**Partnership**									
6	**Borrowings % of assets**	**0**									
7	**Interest rate on loans**	**0.11**									
8	**Interest earned on property surpl**	**0**									
9	**Loan term - years**	**10**									
10											
11											
12	**Size**	**10**									
13	**Effective orchard**	**10**									
14	**Tree density/ha**	**800**									
15											
16	**CAPITAL COSTS**										
17	Land price $/ha	15000									
18	1. Light Clearing										
19	hours per ha	0									
20	bed forming - hrs per ha	4									
21	cost/hr $	35									
22	2. Dam building										
23	earthworks cu metres	22275									
24	excavation $/ cubic m	2									
25	3. Irrigation										
26	lines/drippers mains $/ha	5000									
27	4. Tree costs $/tree										
28	Democrat $/tree	3.6									
29	Golden Delicious	3.6									
30	Red Delicious	4									
31	Red Fuji	4.5									
32	planting costs $/tree	1.59									
33	5. Other costs										
34	Lime t/ha	5									
35	Spread cost $/t	70									

	A	B	C	D	E	F	G	H	I	J	K
36											
37	6. Machinery	price	deprec	life	salvage						
38	Workshop	10000	375	20	2500						
39	70 hp tractor	60000	4500	10	15000						
40	40 hp 2nd hand	0	0	10	0						
41	Sprayer	18000	1350	10	4500						
42	Slasher/mower	1500	56.25	20	375						
43	Fertiliser spreader	1500	56.25	20	375						
44	Trailer	1000	37.5	20	250						
45	Pump	3500	262.5	10	875						
46											
47											
48	**OVERHEAD COSTS**										
49	Council rates	1200									
50	Accountant fees	1500									
51	Bank charges	1200									
52	Permanent labour	0									
53	Registrations	1500									
54	Fuel and oil	1500									
55	R&M machinery @3%	2865									
56											
57	**FARM DRAWINGS**	35000									
58											
59	**VARIETAL INFORMATION**										
60		**Proportion**		**Yield**	**Packout**	**Price 1st**	**Proc**	**Juice**			
61	Democrat	6%		3200	80%	14.66667	3	2			
62	Golden Delicious	14%		3000	80%	17.66667	3	2			
63	Red Delicious	72%		2850	85%	19.33333	3	2			
64	Red Fuji	8%		2400	70%	29	3	2			
65		100%									
66	**PROCESSING PROPORTION**										
67		Can	Juice								
68	Democrat	50%	50%								
69	Golden Delicious	67%	33%								
70	Red Delicious	0%	100%								
71	Red Fuji	67%	33%								
72											

	A	B	C	D	E	F	G	H	I	J	K
73											
74	**PROCESS EQUIVALENT PRICE $/Ctn**										
75	Democrat	2.50									
76	Golden Delicious	2.67									
77	Red Delicious	2.00									
78	Red Fuji	2.67									
79											
80	**INSURANCE PAYOUT**										
81	Processing	1.7									
82	Juicing	2.3									
83	Destroyed	2									
84											
85											
86	**GROWING COSTS**										
87	Democrat	3.25	0								
88	Golden Delicious	2.6	0								
89	Red Delicious	3	0								
90	Red Fuji	4	0								
91											
92	**INSURANCE COSTS c/1st ctn**										
93	Democrat	0.16									
94	Golden Delicious	0.16									
95	Red Delicious	0.16									
96	Red Fuji	0.16									
97											
98	**MARKETING COSTS (Pack and freight)**										
99	Democrat	10	0								
100	Golden Delicious	10	0								
101	Red Delicious	12	0								
102	Red Fuji	12	0								
103											
104	**PROCESSING COSTS (Sort and freight)**										
105	Democrat	1.25									
106	Golden Delicious	1.25									
107	Red Delicious	1.25									
108	Red Fuji	1.25									
109											

	A	B	C	D	E	F	G	H	I	J	K
110											
111											
112	Yield as % of mature production	1	1	1	1	1	1	1	1	1	1
113	**YIELD BASE WHOLE FARM**										
114	Democrat	1920	1920	1920	1920	1920	1920	1920	1920	1920	1920
115	Golden Delicious	4200	4200	4200	4200	4200	4200	4200	4200	4200	4200
116	Red Delicious	20520	20520	20520	20520	20520	20520	20520	20520	20520	20520
117	Red Fuji	1920	1920	1920	1920	1920	1920	1920	1920	1920	1920
118	**TOTAL YIELD**	**28560**	**28560**	**28560**	**28560**	**28560**	**28560**	**28560**	**28560**	**28560**	**28560**
119											
120	**INSURED YIELD**										
121	Democrat	1382.4	1382.4	1382.4	1382.4	1382.4	1382.4	1382.4	1382.4	1382.4	1382.4
122	Golden Delicious	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024
123	Red Delicious	15698	15698	15698	15698	15698	15698	15698	15698	15698	15698
124	Red Fuji	1210	1210	1210	1210	1210	1210	1210	1210	1210	1210
125	**TOTAL INSURED YIELD**	**21314**	**21314**	**21314**	**21314**	**21314**	**21314**	**21314**	**21314**	**21314**	**21314**
126											
127		2									
128		1									
129	**FROST INFORMATION**	1									
130	**YEAR**	**1**									
131	FROST OCT	2	2	2	2	2	2	2	2	2	2
132	FROST NOV	1	1	1	1	1	1	1	1	1	1
133	FROST DEC	1	1	1	1	1	1	1	1	1	1
134											
135	SEVERITY OCTOBER										
136	DAMAGE PARAMETERS	VALUE		DAMAGE							
137	None	0.1		0							
138	Light	0.4		0.3							
139	Moderate	0.8		0.5							
140	Wiped out	1		1							
141											
142											
143	SEVERITY NOVEMBER										
144	DAMAGE PARAMETERS	VALUE		DAMAGE							
145	None	0.3		0							
146	Light	0.6		0.2							

	A	B	C	D	E	F	G	H	I	J	K
147	Moderate	0.9		0.4							
148	Wiped out	1		1							
149											
150											
151	SEVERITY DECEMBER										
152	DAMAGE PARAMETERS	VALUE		DAMAGE							
153	None	0.6		0							
154	Light	0.8		0.1							
155	Moderate	0.95		0.2							
156	Wiped out	1		1							
157											
158	**YEAR**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
159	SEVERITY OCTOBER										
160	TRIANG(0,.2,1)	0.310613	0.310613	0.3106129	0.3106129	0.310613	0.310613	0.310613	0.310613	0.310613	0.310613
161	None	0	0	0	0	0	0	0	0	0	0
162	Light	2	2	2	2	2	2	2	2	2	2
163	Moderate	0	0	0	0	0	0	0	0	0	0
164	Wiped out	0	0	0	0	0	0	0	0	0	0
165											
166											
167	SEVERITY NOVEMBER										
168	TRIANG(0,.2,1)	0.310613	0.310613	0.3106129	0.3106129	0.310613	0.310613	0.310613	0.310613	0.310613	0.310613
169	None	0	0	0	0	0	0	0	0	0	0
170	Light	2	2	2	2	2	2	2	2	2	2
171	Moderate	0	0	0	0	0	0	0	0	0	0
172	Wiped out	0	0	0	0	0	0	0	0	0	0
173											
174											
175	SEVERITY DECEMBER										
176	TRIANG(0,.2,1)	0.310613	0.310613	0.3106129	0.3106129	0.310613	0.310613	0.310613	0.310613	0.310613	0.310613
177	None	1	1	1	1	1	1	1	1	1	1
178	Light	0	0	0	0	0	0	0	0	0	0
179	Moderate	0	0	0	0	0	0	0	0	0	0
180	Wiped out	0	0	0	0	0	0	0	0	0	0
181											
182	DAMAGE OCTOBER										
183	None	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F	G	H	I	J	K
184	Light	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
185	Moderate	0	0	0	0	0	0	0	0	0	0
186	Wiped out	0	0	0	0	0	0	0	0	0	0
187	damage magnitude	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
188											
189	DAMAGE NOVEMBER										
190	None	0	0	0	0	0	0	0	0	0	0
191	Light	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
192	Moderate	0	0	0	0	0	0	0	0	0	0
193	Wiped out	0	0	0	0	0	0	0	0	0	0
194	damage magnitude	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
195											
196	DAMAGE DECEMBER										
197	None	0	0	0	0	0	0	0	0	0	0
198	Light	0	0	0	0	0	0	0	0	0	0
199	Moderate	0	0	0	0	0	0	0	0	0	0
200	Wiped out	0	0	0	0	0	0	0	0	0	0
201	damage magnitude	0	0	0	0	0	0	0	0	0	0
202											
203	DAMAGE HAIL EVENTS	0									
204	Hail Distribution	0	0	0	0	0	0	0	0	0	0
205		Value	Damage								
206	none	0	0								
207	light	0.4	0.2								
208	moderate	0.7	0.35								
209	severe	0.9	0.55								
210											
211	DAMAGE TRIAG	0.243524	0.243524	0.2435244	0.2435244	0.243524	0.243524	0.243524	0.243524	0.243524	0.243524
212											
213	HAIL DAMAGE LEVEL	0	0	0	0	0	0	0	0	0	0
214	TOTAL HAIL DAMAGE	0	0	0	0	0	0	0	0	0	0
215											
216	YIELD DAMAGED 1ST GRADE										
217	**FROST**										
218	OCTOBER	6394	6394	6394	6394	6394	6394	6394	6394	6394	6394
219	NOVEMBER	4263	4263	4263	4263	4263	4263	4263	4263	4263	4263
220	DECEMBER	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F	G	H	I	J	K
221	**HAIL**										
222	OCTOBER-MARCH	0	0	0	0	0	0	0	0	0	0
223											
224	DAMAGE ACTUAL	6394	6394	6394	6394	6394	6394	6394	6394	6394	6394
225	THRESHOLD VALUE	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
226	THRESHOLD DAMAGE	0	0	0	0	0	0	0	0	0	0
227	DAMAGE ABOVE THRESHOLD	**6394**	**6394**	**6394**	**6394**	**6394**	**6394**	**6394**	**6394**	**6394**	**6394**
228											
229	DAMAGE BY VARIETY										
230	Democrat	415	415	415	415	415	415	415	415	415	415
231	Golden Delicious	907	907	907	907	907	907	907	907	907	907
232	Red Delicious	4709	4709	4709	4709	4709	4709	4709	4709	4709	4709
233	Red Fuji	363	363	363	363	363	363	363	363	363	363
234	TOTAL DAMAGE CHECK	6394	6394	6394	6394	6394	6394	6394	6394	6394	6394
235	NET 1ST GRADE										
236	Democrat	968	968	968	968	968	968	968	968	968	968
237	Golden Delicious	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117
238	Red Delicious	10988	10988	10988	10988	10988	10988	10988	10988	10988	10988
239	Red Fuji	847	847	847	847	847	847	847	847	847	847
240											
241	**INSURANCE PREMIUMS**										
242	PRODUCTION BASE	21314	21314	21314	21314	21314	21314	21314	21314	21314	21314
243											
244	CLAIM ON INSURANCE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
245	MAXIMUM PREMIUM	N	N	N	Y	Y	Y	Y	Y	Y	Y
246	MINIMUM PREMIUM	N	N	N	N	N	N	N	N	N	N
247	PREMIUM WITH NO CLAIM	0.144	0.176	0.208	0.24	0.24	0.24	0.24	0.24	0.24	0.24
248	PREMIUM WITH CLAIM	0.192	0.224	0.256	0.288	0.288	0.288	0.288	0.288	0.288	0.288
249	MAX PREMIUM	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256	0.256
250	MIN PREMIUM	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
251											
252	PREMIUM BASE	0.16	0.192	0.224	0.256	0.256	0.256	0.256	0.256	0.256	0.256
253		**CAPITAL NEEDED**									
254											
255	**CAPITAL INVESTMENT**										
256	**LAND DEVELOPMENT**										

	A	B	C	D	E	F	G	H	I	J	K
257	Land	150000									
258	Bed forming	1400									
259	Dam building	44550									
260	Irrigation pipes/drippers	50000									
261											
262	**MACHINERY**										
263	Workshop	10000									
264	70 hp tractor	60000									
265	40 hp 2nd hand	0									
266	Sprayer	18000									
267	Slasher/mower	1500									
268	Fertiliser spreader	1500									
269	Trailer	1000									
270	Pump	3500									
271											
272	trees 50% in yrs 1 & 2										
273	Democrat	864									
274	Golden Delicious	4032									
275	Red Delicious	23040									
276	Red Fuji	2880									
277	planting cost	6360									
278											
279	**TOTAL CAPITAL COSTS**	**378626**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
280											
281	**YEAR**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
282											
283	**VARIABLE COSTS**										
284	Democrat	6240	6240	6240	6240	6240	6240	6240	6240	6240	6240
285	Golden Delicious	10920	10920	10920	10920	10920	10920	10920	10920	10920	10920
286	Red Delicious	61560	61560	61560	61560	61560	61560	61560	61560	61560	61560
287	Red Fuji	7680	7680	7680	7680	7680	7680	7680	7680	7680	7680
288											
289	**INSURANCE COSTS**										
290	Democrat	221	221	221	221	221	221	221	221	221	221
291	Golden Delicious	484	484	484	484	484	484	484	484	484	484
292	Red Delicious	2512	2512	2512	2512	2512	2512	2512	2512	2512	2512
293	Red Fuji	194	194	194	194	194	194	194	194	194	194

	A	B	C	D	E	F	G	H	I	J	K
294											
295	**PACK AND SELLING COSTS**										
296	Democrat - Firsts	9677	9677	9677	9677	9677	9677	9677	9677	9677	9677
297	Golden Delicious - firsts	21168	21168	21168	21168	21168	21168	21168	21168	21168	21168
298	Red Delicious - firsts	109885	109885	109885	109885	109885	109885	109885	109885	109885	109885
299	Red Fuji - firsts	8467	8467	8467	8467	8467	8467	8467	8467	8467	8467
300											
301	**SORT AND SELLING COSTS**										
302	Democrat - process	1056	1056	1056	1056	1056	1056	1056	1056	1056	1056
303	Golden Delicious - process	2310	2310	2310	2310	2310	2310	2310	2310	2310	2310
304	Red Delicious - process	10388	10388	10388	10388	10388	10388	10388	10388	10388	10388
305	Red Fuji - process	1224	1224	1224	1224	1224	1224	1224	1224	1224	1224
306											
307	**TOTAL VARIABLE COSTS**	**253985**	**253985**	**253985**	**253985**	**253985**	**253985**	**253985**	**253985**	**253985**	**253985**
308											
309	**OVERHEAD COSTS**										
310	Council rates	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
311	Accountant fees	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
312	Bank charges	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
313	Permanent labour	0	0	0	0	0	0	0	0	0	0
314	Registrations	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
315	Fuel and oil	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
316	Repairs and maintenance	2865	2865	2865	2865	2865	2865	2865	2865	2865	2865
317											
318	Depreciation	6637.5	6637.5	6637.5	6637.5	6637.5	6637.5	6637.5	6637.5	6637.5	6637.5
319											
320	**TOTAL CAPITAL COSTS**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
321											
322	**TOTAL GROWING COSTS**	**89810**	**89810**	**89810**	**89810**	**89810**	**89810**	**89810**	**89810**	**89810**	**89810**
323											
324	**TOTAL MARKETING COSTS**	**164175**	**164175**	**164175**	**164175**	**164175**	**164175**	**164175**	**164175**	**164175**	**164175**
325											
326	**TOTAL OVERHEAD COSTS**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**	**16402.5**
327											
328	**TOTAL ALL COSTS**	**270387.6**	**270387.6**	**270387.56**	**270387.56**	**270387.6**	**270387.6**	**270387.6**	**270387.6**	**270387.6**	**270387.6**
329											
330											

	A	B	C	D	E	F	G	H	I	J	K
331		PROFIT AND LOSS STATEMENT									
332											
333	YEAR	1	2	3	4	5	6	7	8	9	10
334											
335	REVENUE										
336	1. First Grade										
337	Democrat	14193	14193	14193	14193	14193	14193	14193	14193	14193	14193
338	Golden Delicious	37397	37397	37397	37397	37397	37397	37397	37397	37397	37397
339	Red Delicious	212444	212444	212444	212444	212444	212444	212444	212444	212444	212444
340	Red Fuji	24555	24555	24555	24555	24555	24555	24555	24555	24555	24555
341	2. Processing										
342	Democrat	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381
343	Golden Delicious	5562	5562	5562	5562	5562	5562	5562	5562	5562	5562
344	Red Delicious	19063	19063	19063	19063	19063	19063	19063	19063	19063	19063
345	Red Fuji	2866	2866	2866	2866	2866	2866	2866	2866	2866	2866
346											
347	3. Insurance										
348	Democrat	829	829	829	829	829	829	829	829	829	829
349	Golden Delicious	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
350	Red Delicious	10831	10831	10831	10831	10831	10831	10831	10831	10831	10831
351	Red Fuji	689	689	689	689	689	689	689	689	689	689
352											
353	INTEREST EARNED		0	0	0	0	0	0	0	0	0
354											
355											
356	TOTAL REVENUE	332531	332531	332531	332531	332531	332531	332531	332531	332531	332531
357		1	1	1	1	1	1	1	1	1	1
358	*LESS*										
359	*COST OF GOODS SOLD*										
360	GROWING COSTS	89810	89810	89810	89810	89810	89810	89810	89810	89810	89810
361											
362	MARKETING COSTS	164175	164175	164175	164175	164175	164175	164175	164175	164175	164175
363											
364	GROSS PROFIT/(LOSS)	78546	78546	78546	78546	78546	78546	78546	78546	78546	78546
365	*less*										
366	Overhead costs	16403	16403	16403	16403	16403	16403	16403	16403	16403	16403
367	Interest paid overdraft										

	A	B	C	D	E	F	G	H	I	J	K
368	Interest paid loans	0									
369											
370	**NET INCOME BEFORE TAX**	**62144**	**62144**	**62144**	**62144**	**62144**	**62144**	**62144**	**62144**	**62144**	**62144**
371											
372	**NON DEDUCTIBLE EXPENSES**										
373	Managers labour	35000	35000	35000	35000	35000	35000	35000	35000	35000	35000
374	Capital repayments	0	0	0	0	0	0	0	0	0	0
375	Taxation paid	18643	18643	18643	18643	18643	18643	18643	18643	18643	18643
376											
377	**NET INCOME AFTER TAX**	**8500**	**8500**	**8500**	**8500**	**8500**	**8500**	**8500**	**8500**	**8500**	**8500**
378											
379	CUMULATIVE CASHFLOW	8500	17001	25501	34002	42502	51003	59503	68004	76504	85005
380											
381											
382											
383	**STATEMENT OF ASSETS AND LIABILITIES**										
384	**ASSETS**										
385	Land and Improvements	378626	378626	378626	378626	378626	378626	378626	378626	378626	378626
386	Machinery	91000	84362.5	77725	71087.5	64450	57812.5	51175	44537.5	37900	31262.5
387	Working capital account	8500.476	17001	25501	34002	42502	51003	59503	68004	76504	85005
388											
389	**TOTAL ASSETS**	**469626**	**462989**	**456351**	**449714**	**443076**	**436439**	**429801**	**423164**	**416526**	**409889**
390											
391											
392	**LIABILITIES**										
393	Capital loans	0	0	0	0	0	0	0	0	0	0
394	Overdraft	0	0	0	0	0	0	0	0	0	0
395	Interest paid	0	0	0	0	0	0	0	0	0	0
396											
397	**TOTAL LIABILITIES**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
398											
399	EQUITY	469626	462988.5	456351	449713.5	443076	436438.5	429801	423163.5	416526	409888.5
400											
401	**EQUITY %**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

GLOSSARY OF TERMS

Biennial Bearing

Apple trees that are not managed properly tend toward biennial bearing. In an "on" year there would be high numbers of smaller fruit and in an "off" year there would be lower numbers of larger fruit. A way to combat biennial bearing trees is by thinning (q.v).

Bin

A measure of fruit containing approximately 20 cartons of fruit. Net fruit weight would be in the order of 360 kg but does vary depending on the size of fruit. A bin of small fruit would weigh more than a bin of large fruit because there are less air spaces around the fruit.

Bushel

Volume of fruit equivalent to an 18 kg carton.

Carton

There are two sizes of cartons used in the industry, an Australian Standard Carton measuring 500 mm by 300 mm by 290 mm and carrying a maximum of 216 58 mm diameter fruit carton and a Scoresby or Standard carton. Packed cartons can weigh 18-20 kg.

Count

Way of expressing the size of apples. An apple of 80 count would be approximately 140 mm in diameter and a weight 180 g. The count is used to describe the number of fruit per carton. Therefore for an 80 count there would be 80 apples per carton. Fruit size range is from 64 per carton to 216 per standard carton (see carton).

Frost Sprinklers

Frost is triggered by low temperatures and so sensors in orchard areas trigger sprays that douse the trees in water which then freezes protecting the trees from the damaging effects of frost. The reason for spraying water onto trees is that the water freezes on the surface of the plant thereby protecting the water contained plant cells that if frozen breaks the cell membrane causing damage (Douglas 1995).

Packout

The percentage of fruit that is packed as first grade fruit. Normally expressed as a percentage but can also be expressed as number of cartons (qv) per bin (qv). For example Red Delicious ranges from 75 percent to 90 percent packout or 15 to 19 cartons per 20 carton bin.

Pollinators Cross Pollination

Few varieties of apples can self pollinate. Most need a pollinator that flowers at the same time to enable commercial crops to be grown. In recent orchard plantings the ratio of the main variety to a pollinator is 9 trees per pollinator tree. Another way of pollinating is to graft a branch of a pollinator onto the tree needing pollination.

Reworking

Grafting of new budwood to existing trees or rootstock to change varieties without grubbing out and replanting orchard areas.

Russet

A skin disorder of apples that results in the skin taking on a corky texture brown in colour. Russet can be caused by chemical scalding or natural causes. Significant percentages of an apple's skin affected by russet will cause the apple to be downgraded in price or processed.

Thinning

The practice of decreasing the number of fruit per tree either by use of chemicals or physically hand thinning trees. It is by utilising thinning technology - both chemical and physical that the biennial cropping characteristic of apple trees is decreased. If fruit numbers are not decreased after fruit set, the resultant crop could be made up of large numbers of fruit of a diameter of less than 30 mm which have no commercial value in the fresh fruit market.

Typey

Each variety has a certain shape. Some may be conical meaning its wide at the stem end and narrower at the calyx end. The shapes of common varieties are

Red Delicious - Conical and blocky
Golden Delicious - Slightly conical
Red Fuji - Round
Johnagold - similar to Golden Delicious but with red blush

Wind rub or Limb rub

A problem that develops when there is repeated rubbing of limbs across fruit. It results in a brownish area of skin and sometimes bruising. This leads to downgrading of fruit to the processing markets.

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