MAF QUALITY MANAGEMENT (MQM) REPORT TO THE ANNUAL CONFERENCE OF THE NATIONAL BEEKEEPERS' ASSOCIATION OF NEW ZEALAND, WHANGANUI 17-18 JULY 1996

1.0 ORGANISATION AND PERSONNEL

Two new consultants joined the apiculture business unit within MAF Quality Management, during the year. James Driscoll is located at Palmerston North while Paul Bolger is situated in Pukekohe. James works part time for the Quarantine Service while Paul carries out duties for the Horticulture business. The apiculture hours worked by Derek Bettesworth and Paul Bolger in North Region still amount to one full-time apiculture position.

2.0 BEEKEEPING STATISTICS

2.1 Beekeepers, Apiaries and Hives

There were 5306 registered beekeepers owning 286,806 hives as at 30 June 1996 (Table 1). This represented a decrease of 1.9% of beekeepers and 2.1% in hives, a trend continued from previous years.

2.2 Honey Production

The total saleable crop was assessed at 8610 tonnes (30 kg/hive) which is an increase on last years crop of 8047 tonnes (27.5 kg/hive). The six year average is 8735 tonnes or 29.4 kg per hive.

3.0 EXOTIC DISEASE AND PEST RESPONSE (EDPR) CAPABILITY

Three joint exercises were run this year. These used EDPR procedures for a European foulbrood response, to inspect apiaries for AFB. The exercises involved approximately 120 MQM staff and 130 members of local NBA branches, held in Tauranga, Palmerston North and Timaru. Most participants found that this was very successful in helping both groups get a better understanding of each others operations and problems.

Whether or not MAF Regulatory Authority will continue to fund a response capability for bee exotic disease is unclear as the criteria for this funding is under review. It is likely that only those exotic diseases considered to have significant socioeconomic impact will be funded by the taxpayer. It is arguable which if any of the presently scheduled exotic bee diseases would meet these criteria. Exotic diseases not meeting these criteria will have to be funded by industry through a Pest Management Strategy, should industry consider the cost/benefits of doing this worthwhile.

4.0 SURVEILLANCE

The Honey Bee Exotic Disease Surveillance Programme is comprised of four parts, the apiaries register, hive sampling, toxic honey monitoring and border protection.

4.1 Register

The maintenance of this Register (in the form of a computer database) is a legal requirement for the Government under the current Apiaries and Biosecurity Acts. To be really effective the database must have accurate statements of inspection provided by beekeepers each spring. However once again, 2583 (48.7%) of beekeepers failed to provide such statements of inspection by the deadline of 7th December. As at 30 June 1996, 883 beekeepers (16.6%) had still not returned their statements despite reminder notices.

4.2 Hive Sampling

In the past 12 months, MAF staff have inspected 491 apiaries for the presence of exotic bee diseases and taken samples for laboratory analysis for internal and external parasitic mites. In addition, 48 samples were taken for European foulbrood diagnosis and 1 sample was taken for Africanised honey bee analysis. Apiaries were sampled in at risk areas including sea ports, garbage dumps and areas frequented by overseas travellers. No specimens of exotic disease or pests were found. A further 509 samples of bees were tested for live bee exports at Invermay as part of the export certification programme. The samples were analysed for the presence of exotic internal and external parasitic mites. MAF Quality Management wishes to thank the beekeepers for their cooperation in providing samples.

4.3 Quarantine Service

The beekeeping industry continued to have a high profile in the work of MAF's Quarantine Service with numerous consignments of honey and other bee products being intercepted at the border. James Driscoll, Apicultural Advisory Officer, Palmerston North works part time in the Quarantine Service. The disease risk posed by honey and bees continued to be brought to the attention of the travelling public by way of articles and static displays at airports and other venues.

4.4 New Technologies

MAF Quality Management is constantly looking for ways to improve diagnostic capabilities. We are currently investigating a PCR test for European foulbrood (EFB) and an ELISA test for Tracheal Mites. Provided evaluation of these technologies proves satisfactory we should be using these new tests within the next 12 mouths. These tests are much more sensitive and faster than current methods. For example: The PCR test for EFB will give a positive diagnosis within hours rather than up to 10 days as the current test does.

4.5 Toxic Honey

This year there has been one incident of toxic honey poisoning. The levels of tutin (40 mg/kg) and hyenanchin (260 mg/kg) detected were at the lower end of values previously found to be associated with poisoning symptoms. The poisoning occurred after eating extracted honey, not burr comb or comb honey, as in several previous cases.

However, the number of beekeepers who continue to operate outside the law is a cause for concern. In the Coromandel restricted area, 18% of beekeepers, and 41% of beekeepers in the Eastern Bay of Plenty restricted area, failed to apply for a permit.

5.0 EXPORT CERTIFICATION

Improved price prospects for Canadian honey resulted in a strong demand for NZ package bees and queens for the Canadian market this past autumn. Approximately 18 tonnes of packages were shipped. All shipments through USA, which followed the protocol negotiated in 1995, transited the United States without problems.

Further efforts were made during the year under Sanitary Phytosanitary (SPS) provisions to obtain agreement from Korean authorities to reduce further the testing requirements of NZ bees. These efforts have not yet proved successful.

Strong demand for honey, particularly from Germany, which began at the end of 1995, has continued. It is disappointing that the high NZ dollar has not permitted a significant price increase to be achieved by producers in NZ. However these exports have removed what could have been a reasonable surplus from the local market which has resulted in some firming of prices this season.

6.0 AMERICAN FOULBROOD AND NBA AFB CONTROL PROGRAMME

The 1995-96 AFB Control Programme contract with MAF Quality Management (MQM) contained most of the provisions of the 1994-95 contract, including the inspection of 3.9% (987) of registered apiaries by MQM personnel, the provision of inspection lists for NBA volunteer inspectors, counselling of beekeepers with AFB problems, and various other services relating to disease control and reporting. A significant new component of this season's contract was a trial of the adult bee test for *Bacillus larvae* spores.

Once again this year, the MQM inspection requirement was exceeded, with 1033 apiaries inspected. The average apiary size was also exceeded, with inspected apiaries averaging 8.4 hives (target minimum apiary size = 6 hives). A total of 35 MQM staff and contract beekeepers were used in these inspections (see Table 3).

The NBA executive canvassed branches prior to this year's contract to determine which branches wished to carry out NBA volunteer (diseaseathon) inspections. Four of the 16 branches elected not to be involved in this part of programme. Nevertheless, total apiaries inspected by NBA volunteers during the contract period actually increased by 10%. Part of the increase may be explained by the involvement of three branches in

Emergency Disease and Pest Response (EDPR) training exercises, which were held in Tauranga, Palmerston North and Timaru. Apiaries inspected for AFB during these exercises were included in the NBA volunteer inspection figures.

NBA branch inspections totalled 981 apiaries, or 63% of the 1545 required to achieve the target of 6.1% of registered apiaries. A total of 108 letters of appointment were issued to beekeepers wishing to assist in NBA inspections, with 82 letters of appointment actually being used. Letters of appointment were not issued to beekeepers taking part in the three EDPR exercises (Table 4).

The NBA AFB Disease Control Programme therefore resulted in the inspection of 8% of New Zealand's apiaries (MQM: 4.1% + NBA: 3.9%). The target inspection level set by the NBA executive for the programme was 10% of apiaries. A total of 16,044 hives were inspected (MQM: 8643 + NBA: 7401). This figure represents 5.5% of the beehives in New Zealand registered at the time the contract was let. Compared to 1994-95, 32% more hives were inspected by MQM and the NBA during the 1995-96 contract period.

MAF Quality Management personnel found 530 hives and 183 apiaries infected with AFB (6.1% of hives and 17.7% of apiaries inspected). As directed by the contract, all MQM inspections were targeted whenever possible to areas where there was the greatest likelihood of finding AFB (ie, trouble spots/outbreaks). NBA inspectors found a further 132 hives and 76 apiaries infected (1.8% of hives and 7.7% of apiaries inspected). Beekeepers reported an additional 1079 hives and 626 apiaries to be infected (Table 5).

The overall reported incidence of AFB in New Zealand beehives in 1995-96 was 0.6% of hives and 3.6% of apiaries, down from 0.8% of hives (25% reduction) and 4.2% of apiaries (14% reduction) in 1994-95 (Table 6).

The suggestion has been made that the reduction in AFB incidence in the last five years is due to beekeepers under-reporting AFB hives to enable them to meet disease area freedom export certification requirements. However, the reduction in AFB reported by beekeepers during that time (13.0%) is similar to the reduction in the amount of AFB found by MQM inspectors (13.7%). This tends to indicate that the decrease in reported AFB reflects a real decrease in the incidence of the disease.

Table 1 **BEEKEEPER, APIARY AND HIVE STATISTICS FOR NZ APIARY DISTRICTS AS AT 30 JUNE 1996**

Apiary Register Location	Beekeepers			Apiaries			Hives		
	1996	*1995*	*% Change*	*1996*	*1995*	*% Change*	*1996*	*1995*	*% Change*
Whangarei	1150	1213	- 5.2%	2687	2898	- 7.3%	28777	29101	- 1.1%
Hamilton	530	551	- 3.8%	2947	2905	+1.4%	41270	43742	- 5.7%
Tauranga	511	537	- 4.8%	3414	3531	- 3.3%	47670	50631	- 5.8%
Palmerston North	1330	1352	- 1.6%	4005	4011	- 0.1%	38121	37245	+2.4%
Blenheim	463	469	- 1.3%	1935	2037	- 5.0%	21775	22679	- 4.0%
Lincoln	789	735	+7.3%	5361	5270	+1.7%	58983	58861	+0.2%
Invermay	533	552	- 3.4%	4030	4112	- 2.0%	50210	50821	- 1.2%
TOTAL	5306	5409	- 1.9%	24379	24764	- 1.6%	286806	293080	- 2.1%

Table 2

NEW ZEALAND HONEY PRODUCTION, IN TONNES
AS AT 30 JUNE ANNUALLY

YEAR	Northland, Auckland, Hauraki Plains	Waikato, King Country, Taupo	Bay of Plenty, Coromandel, Poverty Bay	Hawkes Bay, Taranaki, Manawatu, Wairarapa	*NORTH ISLAND*	Marlborough, Nelson, Westland	Canterbury*, North Otago	South & Central Otago, Southland	*SOUTH ISLAND*	NEW ZEALAND	Yield per Hive (kgs)**
1991	668	1057	1470	811	4006	265	1965	1054	3284	7290	23.3
1992	1200	1068	998	1231	4497	650	2870	1543	5063	9560	31.4
1993	1033	811	958	577	3379	560	1611	1536	3707	7086	23.3
1994	1295	1946	1524	1442	6207	493	2883	2236	5612	11819	40.8
1995	354	962	1426	1200	3942	499	1685	1921	4105	8047	27.5
1996	829	1639	1077	1367	4912	607	1287	1804	3698	8610	30.0
6 yr ave	897	1247	1242	1105	4491	512	2050	1682	4245	8735	29.4

* Includes honeydew

** Total estimated production available for extraction divided by total number of registered hives

Table 3

PERFORMANCE OF MQM INSPECTORS*
NBA AFB DISEASE CONTROL PROGRAMME
YEAR ENDING 30 JUNE 1996

Apiary Register Location	MQM Staff	Contract Inspectors	Apiaries Inspected		Hives Inspected		AFB Found (% Inspected)	
			Target**	Completed (%)			Hives (%)	Apiaries (%)
Whangarei	5	3	116	118 (101.7%)	1191		83 (7.0%)	36 (30.5%)
Hamilton	6	0	121	153 (126.4%)	1330		15 (1.1%)	10 (6.5%)
Tauranga	3	1	144	144 (100.0%)	1472		175 (11.9%)	44 (30.6%)
Palmerston Nth	3	3	154	154 (100.0%)	824		117 (14.2%)	26 (16.9%)
Blenheim	3	0	81	81 (100.0%)	958		41 (4.3%)	24 (29.6%)
Lincoln	3	0	207	217 (104.8%)	1774		58 (3.3%)	25 (11.5%)
Invermay	5	0	164	166 (101.2%)	1094		41 (3.7%)	18 (10.8%)
TOTAL	**28**	**7**	**987**	**1033 (104.7%)**	**8643**	**(8.4)*** **	**530 (6.1%)**	**183 (17.7%)**
1994-95	**22**	**10**	**979**	**993 (101.4%)**	**7489**	**(7.5)*** **	**506 (6.8%)**	**188 (18.9%)**

* Includes beekeepers employed by MQM

** Based on programme target of 3.9% of apiaries per Apiary District (June 30, 1994 statistics); 1994-95 programme based on 3.9%.

*** Average hives per apiary (>6 hives/apiary required)

Table 4

PERFORMANCE OF VOLUNTEER INSPECTORS
NBA AFB DISEASE CONTROL PROGRAMME
YEAR ENDING 30 JUNE 1996

NBA Branch	Warrants Issued	Warrants Used	Apiaries Inspected			Hives Inspected	AFB Found (% Inspected)			
			Target*	Completed	(%)		Hives (%)		Apiaries (%)	
Far North***	0	0	40	0	--	0	0	--	0	--
Northland	2	2	50	3	(6.0%)	22	2	(9.1%)	1	(33.3%)
Auckland***	1	1	91	2	(2.2%)	0	0	(0.0%)	0	(0.0%)
Waikato***	0	0	189	0	--	0	0	--	0	--
Bay of Plenty**	7	6	152	274	(180.3%)	2031	17	(0.8%)	12	(4.4%)
Poverty Bay	8	8	73	62	(84.9%)	369	17	(4.6%)	5	(8.1%)
Hawkes Bay	15	11	129	128	(99.2%)	666	8	(1.2%)	6	(4.7%)
S'thern North Island**	0	0	112	112	(100.0%)	725	38	(5.2%)	21	(18.8%)
Marlborough	6	6	44	25	(56.8%)	282	3	(1.1%)	1	(4.0%)
Nelson	18	11	55	63	(114.5%)	335	9	(2.7%)	6	(9.5%)
West Coast	3	2	28	10	(35.7%)	210	13	(6.2%)	6	(60.0%)
Canterbury	30	23	184	96	(52.2%)	942	8	(0.8%)	6	(6.3%)
Sth Canterbury**	9	4	140	154	(110.0%)	1538	10	(0.7%)	7	(4.5%)
North Otago***	0	0	56	0	--	0	0	--	0	--
Otago	0	0	133	0	--	0	0	--	0	--
Southland	9	8	69	52	(75.4%)	281	7	(2.5%)	5	(9.6%)
TOTAL	**108**	**82**	**1545**	**981**	**(63.5%)**	**7401**	**132**	**(1.8%)**	**76**	**(7.7%)**
1994-95	**150**	**98**	**1533**	**880**	**(57.4%)**	**4658**	**258**	**(5.5%)**	**82**	**(9.3%)**

* Based on programme target of 6.1% of apiaries in Apiary Districts (June 30, 1994 statistics); 1994-95 programme based on 6.1%

** Includes EDPR exercise where no letters of appointment were issued

***Branches that elected not to be involved in '95-'96 NBA Voluntary Inspection Programme

Table 5

APIARIES AND HIVES WITH AMERICAN FOULBROOD FOUND DURING NBA DISEASE CONTROL PROGRAMME OR REPORTED TO MQM BY BEEKEEPERS TO 30 JUNE 1996 (1995 FIGURES IN BRACKETS)

MQM Apiary Register Location	Apiaries Found with AFB:				Hives Found with AFB:			
	By MQM Inspectors*	By Volunteer Inspectors**	Reported by Beekeepers	Totals	By MQM Inspectors	By Volunteer Inspectors	Reported by Beekeepers	Totals
Whangarei	36 (12)	1 (8)	58 (75)	95 (95)	83 (19)	2 (12)	108 (150)	193 (181)
Hamilton	10 (16)	0 (0)	110 (135)	120 (151)	15 (25)	0 (0)	168 (234)	183 (259)
Tauranga	44 (54)	17 (20)	87 (101)	148 (175)	175 (222)	34 (80)	108 (199)	317 (501)
Palmerston Nth	26 (42)	27 (10)	69 (115)	122 (167)	117 (100)	46 (34)	125 (308)	288 (442)
Blenheim	24 (15)	13 (14)	60 (124)	97 (153)	41 (31)	25 (67)	148 (233)	214 (331)
Lincoln	25 (22)	13 (23)	132 (148)	170 (193)	58 (54)	18 (38)	231 (312)	307 (404)
Invermay	18 (27)	5 (7)	110 (84)	133 (118)	41 (55)	7 (27)	191 (170)	239 (252)
Total	183 (188)	76 (82)	626 (782)	885 (1052)	530 (506)	132 (258)	1079 (1606)	1741 (2370)

Inspectors employed by MQM (including beekeepers)

** Beekeeper inspectors under MQM direction (diseaseathons)

Table 6 INCIDENCE OF AMERICAN FOULBROOD IN APIARY DISTRICTS TO 30 JUNE 1996
(1995 FIGURES IN BRACKETS)

MQM Apiary Register	Diseased Apiaries/ % of Total District Apiaries		Diseased Hives/ % of Total District Hives		Apiaries Inspected NBA Programme*	
Location	Number	%	Number	%	Number	%
Whangarei	95 (95)	3.5% (3.3%)	193 (181)	0.7% (0.6%)	123 (154)	4.1% (5.1%)
Hamilton	120 (151)	4.1% (5.2%)	183 (259)	0.4% (0.6%)	153 (122)	4.9% (4.1%)
Tauranga	148 (175)	4.3% (5.0%)	317 (501)	0.7% (1.0%)	480 (363)	13.0% (10.1%)
Palmerston North	122 (167)	3.0% (4.2%)	288 (442)	0.8% (1.2%)	394 (267)	10.0% (6.7%)
Blenheim	97 (153)	4.8% (7.5%)	214 (331)	0.9% (1.5%)	179 (184)	8.6% (9.0%)
Lincoln	170 (193)	3.2% (3.7%)	307 (404)	0.5% (0.7%)	467 (578)	8.8% (11.2%)
Invermay	133 (118)	3.3% (2.9%)	239 (252)	0.5% (0.5%)	218 (205)	5.2% (4.7%)
TOTAL	885 (1052)	3.6% (4.2%)	1741 (2370)	0.6% (0.8%)	2014 (1873)	8.0% (7.5%)

* Includes both MQM and beekeeper inspectors, whether employed by MQM or under MQM direction (diseaseathons); apiaries inspected as a percentage of apiaries registered on June 30, 1994.

NEW ZEALAND BEEKEEPER, APIARY AND HIVE STATISTICS BY APIARY DISTRICT AS AT 30 JUNE 1996

Apiary Register Location	0-5 Hives		
	Beekeepers	Apiaries	Hives
Whangarei	867	918	1781
Hamilton	341	408	768
Tauranga	281	306	645
Palmerston Nth	918	1023	2103
Blenheim	305	327	613
Lincoln	525	614	1069
Invermay	322	364	724
NEW ZEALAND	3559	3960	7703

6-50 Hives		
Beekeepers	Apiaries	Hives
227	519	3159
141	313	2002
134	296	2097
349	766	4778
109	312	1958
165	442	2624
120	258	1756
1245	2906	18374

51-250 Hives		
Beekeepers	Apiaries	Hives
35	344	4111
18	212	2695
48	478	5267
38	521	4601
18	203	1967
42	534	5307
41	533	5707
240	2825	29655

Apiary Register Location	251-500 Hives		
	Beekeepers	Apiaries	Hives
Whangarei	7	204	4265
Hamilton	10	282	4244
Tauranga	15	331	4249
Palmerston Nth	9	245	3231
Blenheim	19	438	6440
Lincoln	21	430	6512
Invermay	18	529	7255
NEW ZEALAND	99	2459	36196

501-1000 Hives		
Beekeepers	Apiaries	Hives
7	212	4445
11	534	11371
19	663	12477
7	366	4475
9	423	6510
21	1303	15688
16	770	11136
90	4271	66102

More than 1000 Hives		
Beekeepers	Apiaries	Hives
7	490	11016
9	1198	20190
14	1340	22935
9	1084	18933
3	232	4287
15	2038	27783
16	1576	23632
73	7958	128776

Apiary Register Location	0-50 Hives		
	Beekeepers	Apiaries	Hives
Whangarei	1094	1437	4940
Hamilton	482	721	2770
Tauranga	415	602	2742
Palmerston Nth	1267	1789	6881
Blenheim	414	639	2571
Lincoln	690	1056	3693
Invermay	442	622	2480
NEW ZEALAND	4804	6866	26077

More than 50 Hives		
Beekeepers	Apiaries	Hives
56	1250	23837
48	2226	38500
96	2812	44928
63	2216	31240
49	1296	19204
99	4305	55290
91	3408	47730
502	17513	260729

Totals		
Beekeepers	Apiaries	Hives
1150	2687	28777
530	2947	41270
511	3414	47670
1330	4005	38121
463	1935	21775
789	5361	58983
533	4030	50210
5306	24379	286806