

Multan, 2006

# **Working with mango growers and supply chains to improve knowledge and practise**

**Mr. Rowland Holmes & Mr. Terry Campbell**

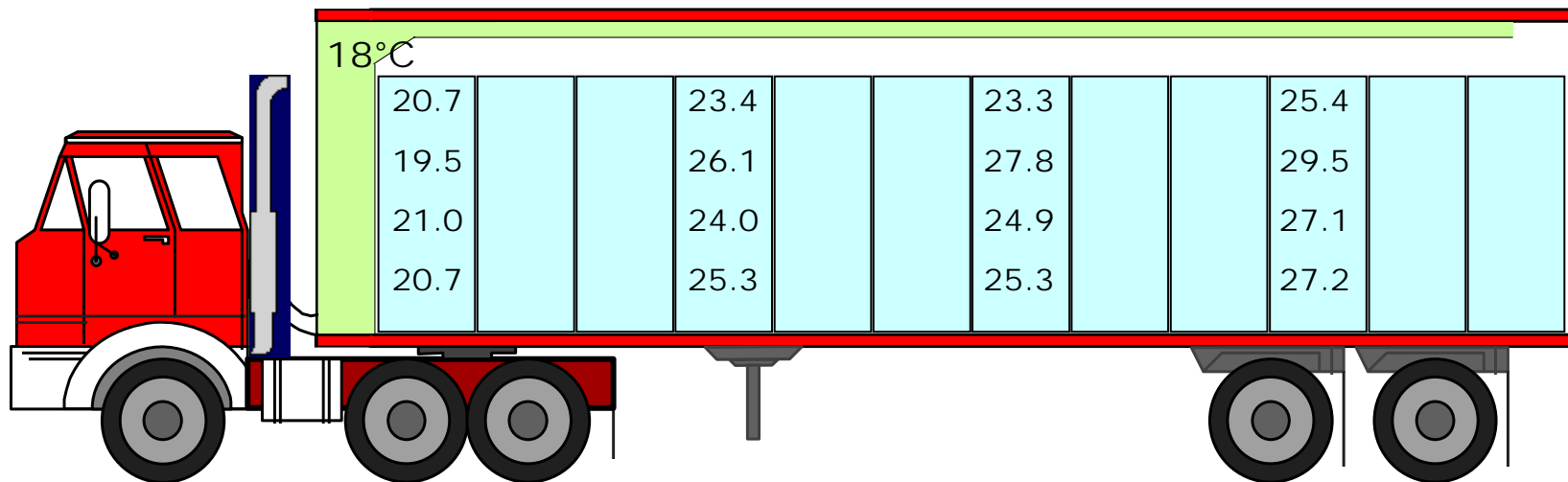
# Better Mangoes



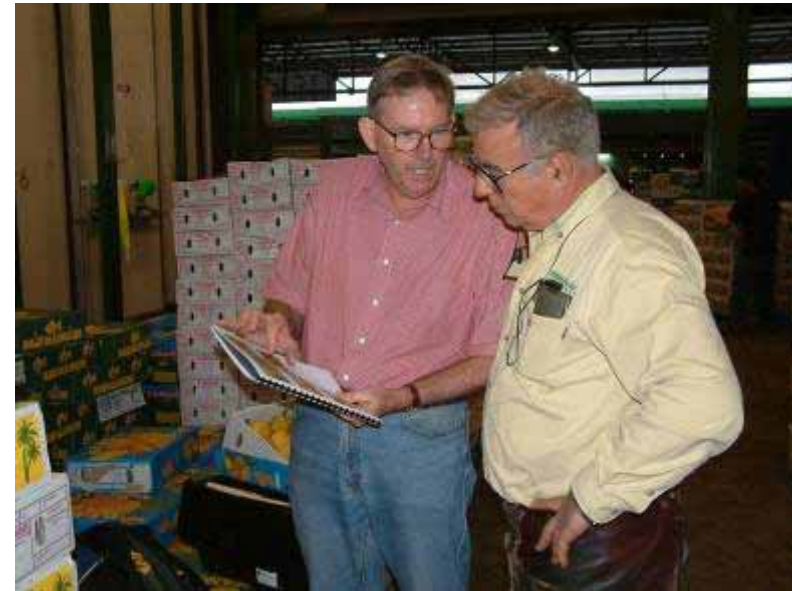
# Better Mangoes



# Better Mangoes








# Information & Communication



**MANGO defect guide**

**Correct identification  
Good communication  
Better Mangoes**

This guide is to help mango handlers identify the common defects that appear during handling in the supply chain. Correct identification and good feedback through the chain will identify where improvements can be made.

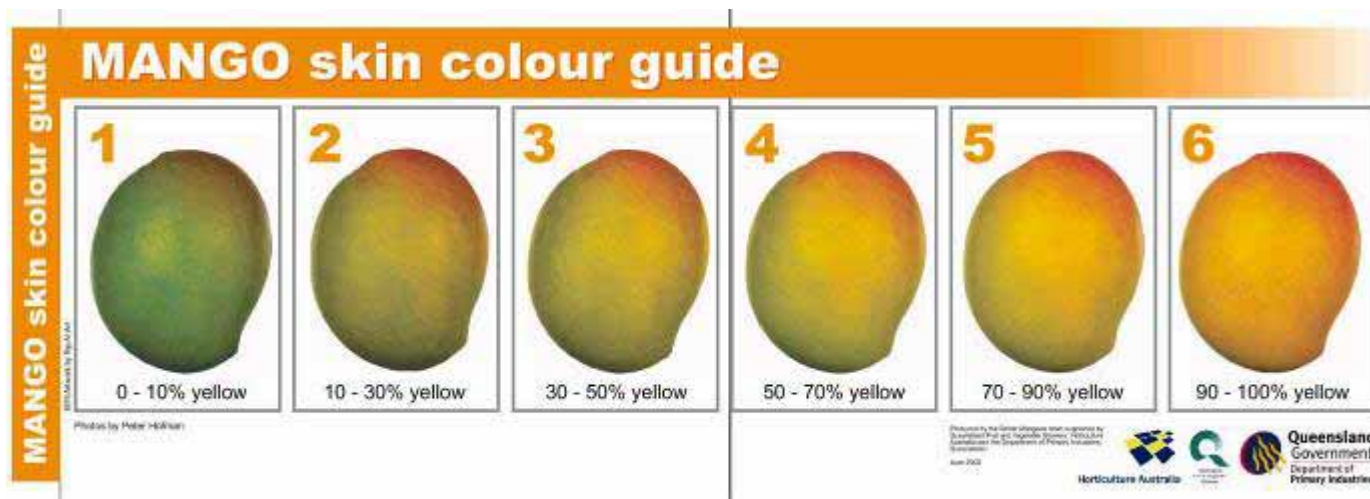
<p><b>1 Stem end rots</b></p>  <p><b>Stem end rots</b> Reddish-brown, soft rot that penetrates deep into the flesh. Early on, rot is black, with no distinct spots.</p>	<p><b>2 Dendritic spot</b></p>  <p><b>Great black spots with irregular edges.</b> These are also growing and black rot penetrates deep into the flesh.</p>	<p><b>3 Anthracnose</b></p>  <p><b>Dark, sunken and sunken.</b> A dark, sunken, circular, sunken and sunken. Anthracnose, on the body of the fruit or around the stem. The rot penetrates deep into the flesh. This spot may be present after the fruit is cut.</p>	<p><b>4 Sapburn</b></p>  <p><b>Dark brown spots and patches, often slightly sunken.</b> They appear all over the fruit or around the stem and blossom.</p>	<p><b>5 Skin browning</b></p>  <p><b>St. Brown</b> Fine brown speckles of 1-2 mm.</p> <p><b>St. Red</b> Light to dark brown flecking, spots, blotches, blotches or 1-2 mm.</p>	<p><b>6 Lenticel spot</b></p>  <p><b>Round or star shaped brown spots on the skin.</b></p>
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Photographs have the DPI collection by David Ledger, Rowland Holmes and Tony Clarke. Call the DPI Call Centre 13 23 23 for advice on mango handling and the website support of this guide.

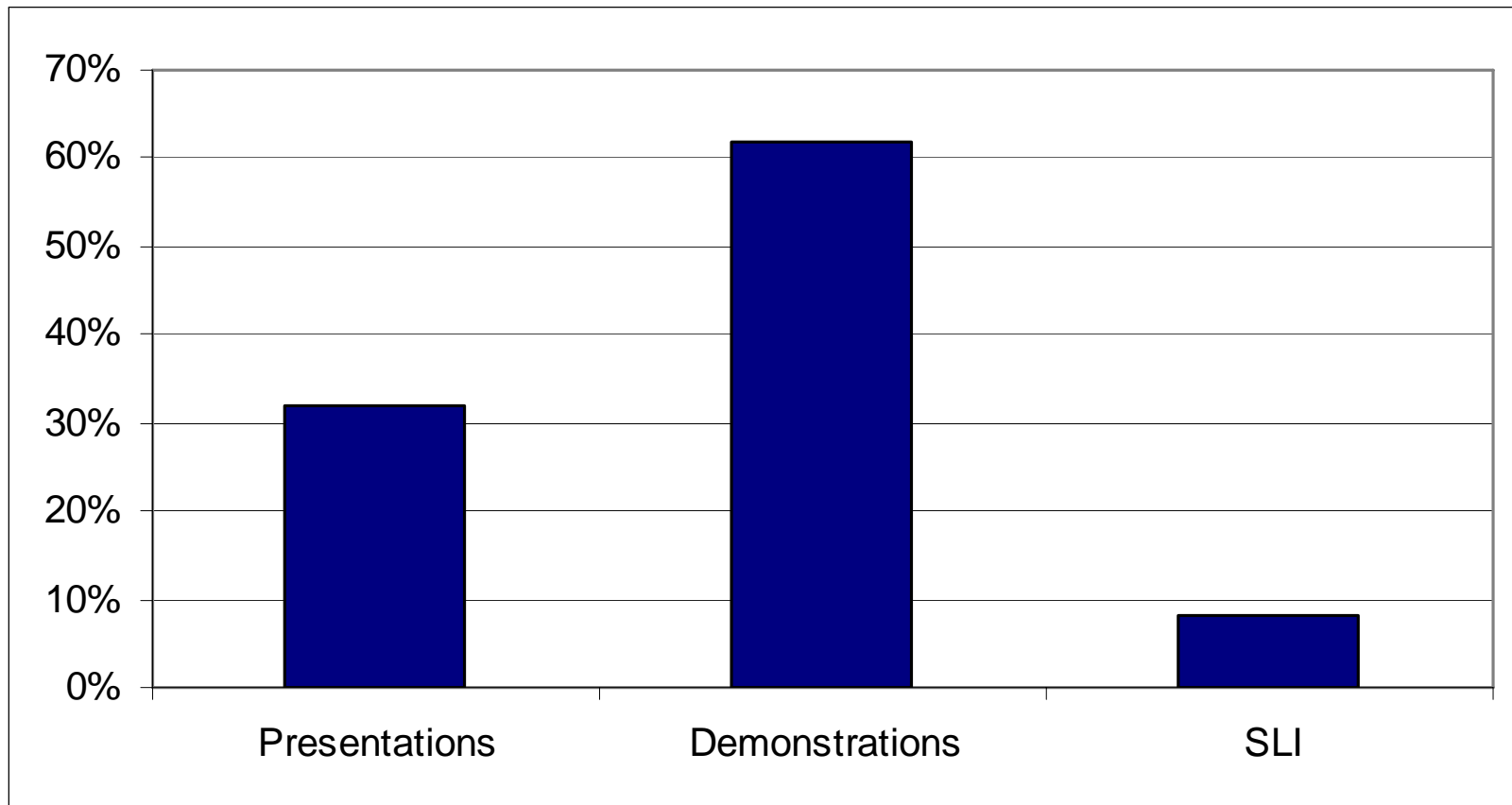
Queensland Government  
Department of Primary Industries and Fisheries

# Key outcomes

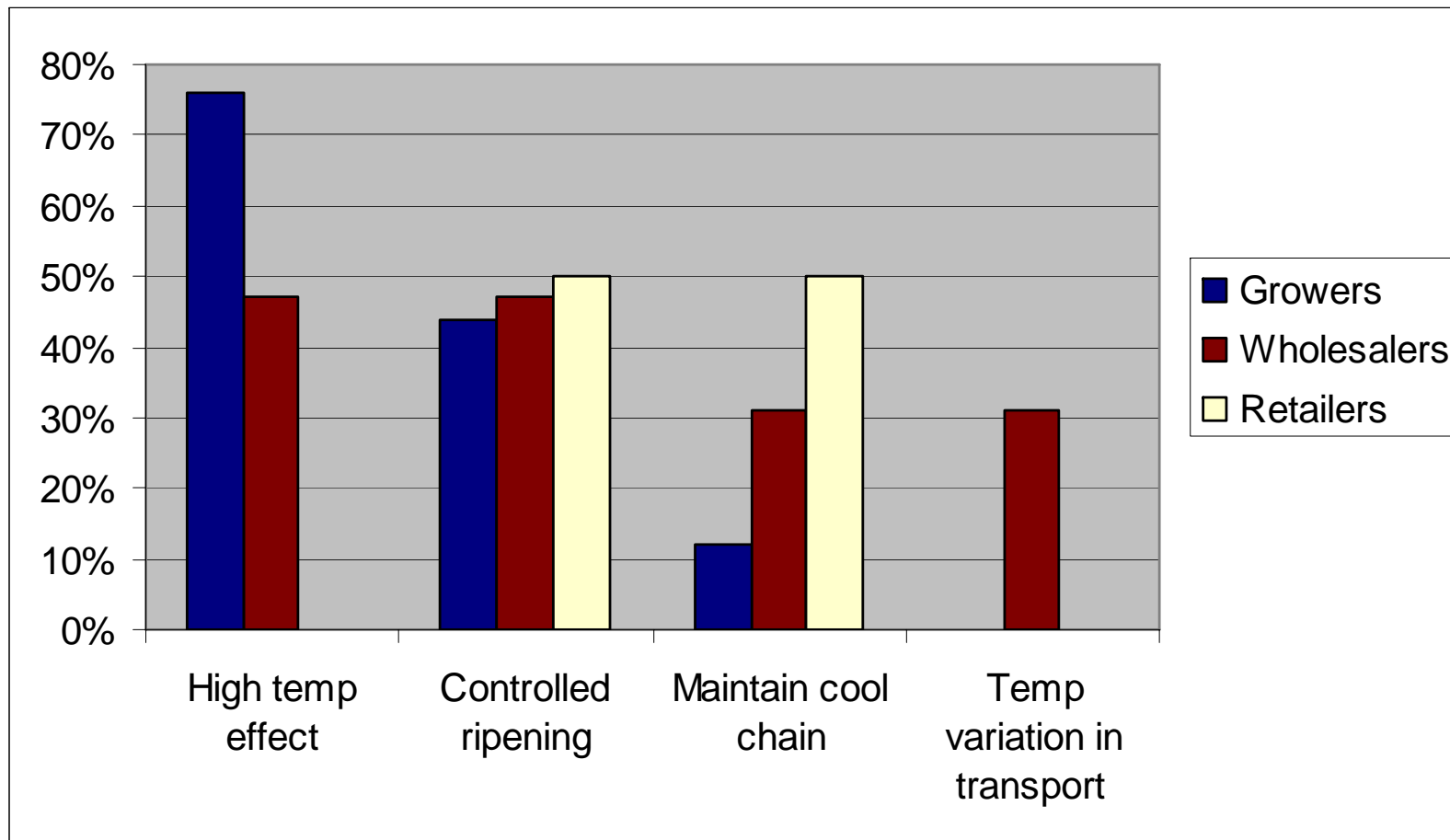
- Developed a Saleable life index
- Identified 2 supply chain systems that work
- Info products communication & information



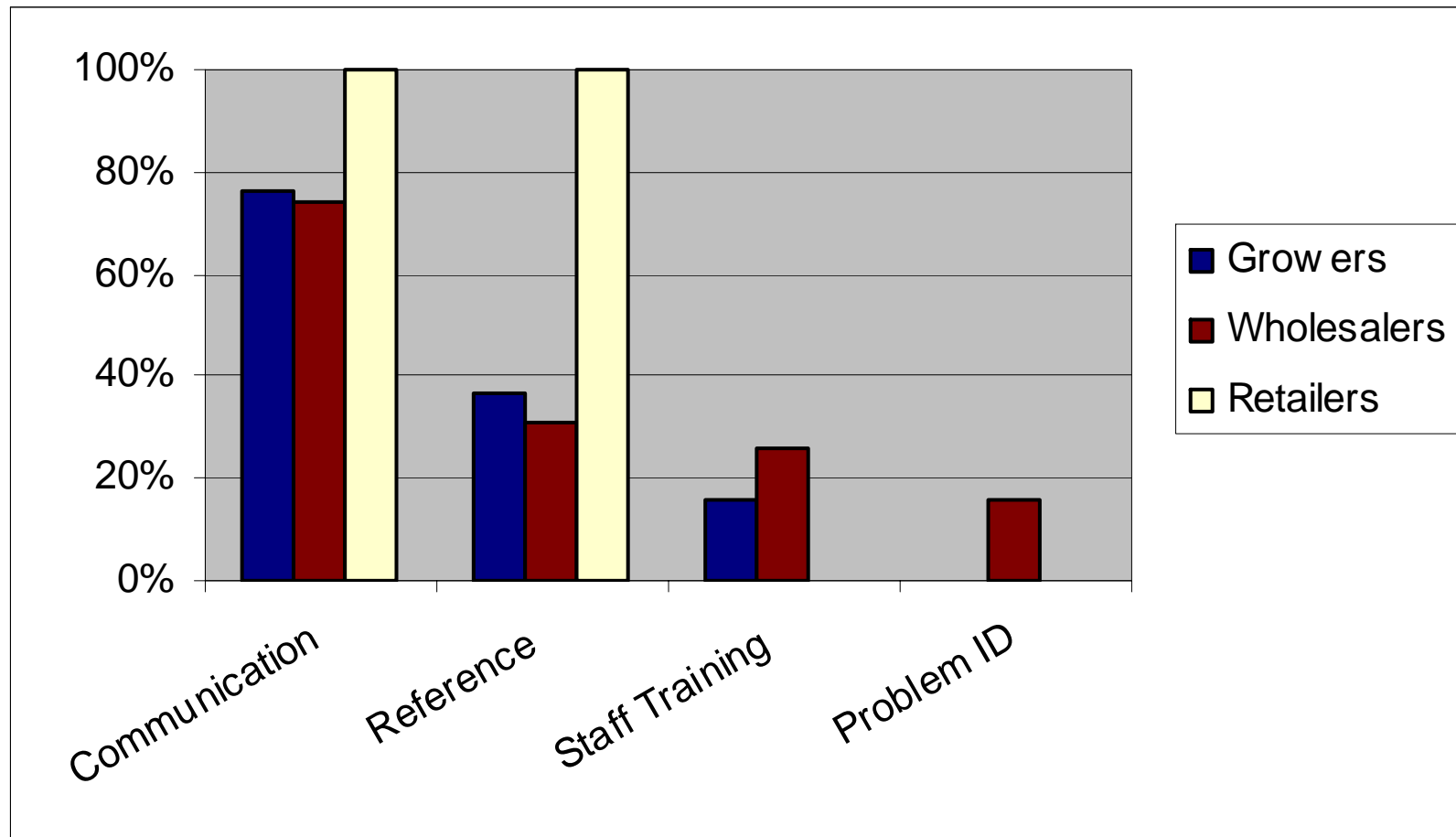
# Triggers for change - growers



# Changes in knowledge



# Use of guides



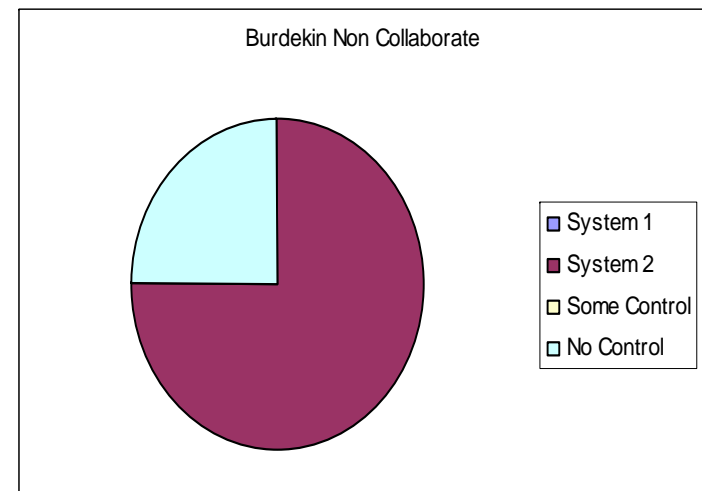
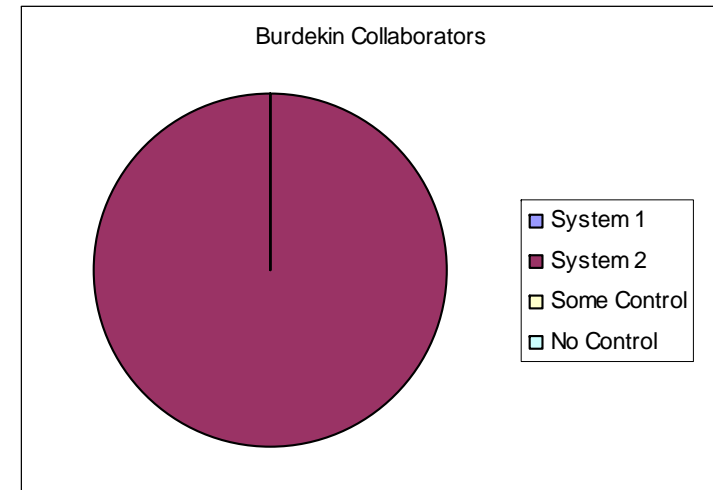
# Burdekin mango growers

## Collaborators

- High level of adoption of System 2
- All modified the system to suit transport/wholesaler

## Non-collaborators

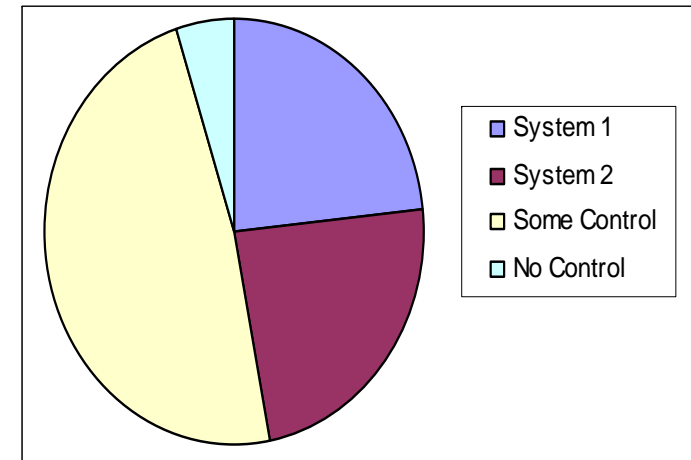
- Varying influence from Better Mangoes
- Have all made recent changes



# Other growing areas

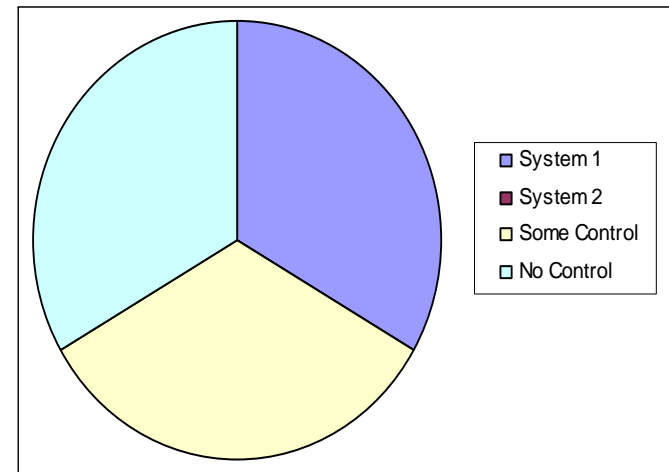
## Mareeba

- System very dependant on market, export very different
- Major impact is on temperature management
- Greater Better mangoes impact than first measured



## Katherine

- Large variation due to use of packing sheds and lack of feedback
- Variation due to market and time in season



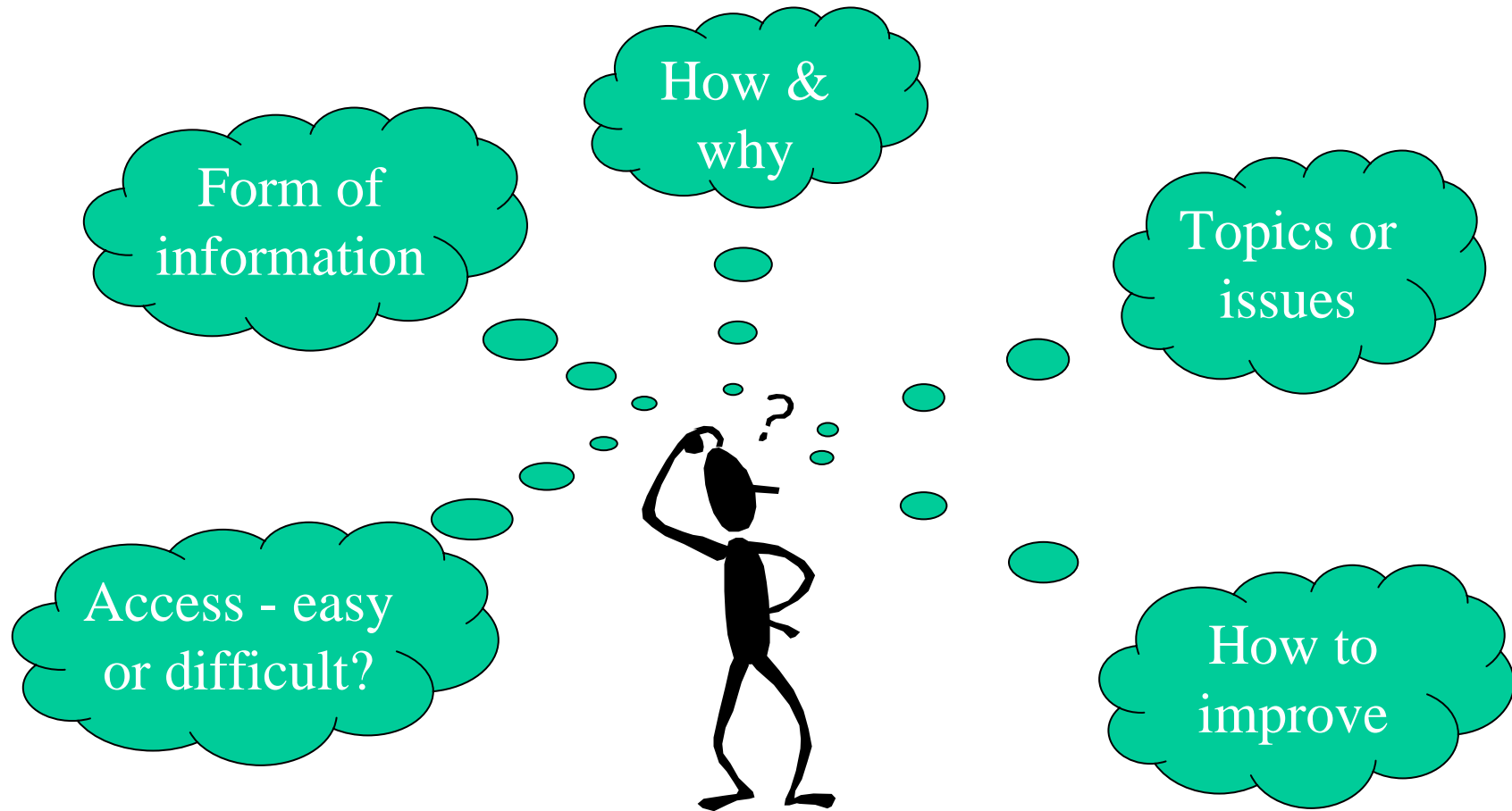
# Managing Mangoes for Profit

## Industry concerns

- Lack of adoption of new ideas
- Poor availability of information from R&D
- Many years of R&D on mangoes
- Very little improvement in mango management practises



# Painting a picture



**Information is only useful when  
someone is looking for it!**



# Mango workshops

- Workshops and field days
- Direct access to technical specialists
- Manuals, field guides, farm plan and information CD's



# Key outcomes

- Better understanding of basic science
- Learning experience
- Indigenous knowledge
- Improved access & awareness of information

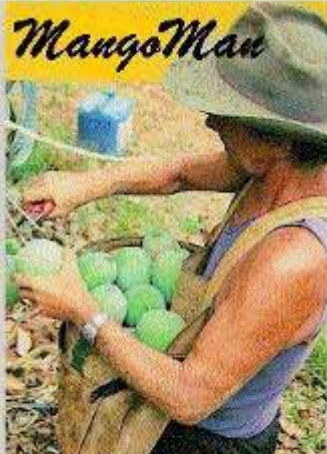


# Mangoman

- **Analyse current mango production practises to establish best practise**
- **Develop recording systems to assist data collection and help growers analyse their business**
- **Compile accurate planting and production statistics**

# MangoMan

Welcome to MangoMan



## Mango Man

Mango Orchard Management and Benchmarking System

Copyright © 1996-97, DPI

Registered to:  
**DEMO Version 97.002**

Developed by the DPI MangoMan team with funding from QFVG and the HRDC.

MangoMan (ver. 97.002)

Thursday 23/03/2006

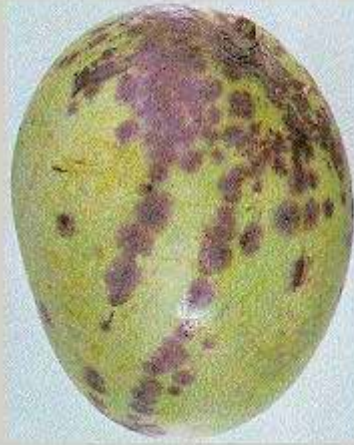
**Diagnostics** 1 of 16 Anthracnose

**Cause:**  
The fungus Colletotrichum gleosporioides

**Occurrence:**  
Occurs in all mango growing areas of the world. It can be very serious if the correct spray program is not followed.

**Symptoms:**  
Infection of young fruit may cause fruit drop. Small dark-brown specks enlarging to irregular, dark-brown

**Management:**  
Field Spray with mancozeb (800g/kg) using 200g product per 100L, weekly during flowering (fortnightly during dry)



Navigation: All / Stem / Fruit / Leaves / Flowers / Roots / Post-Harvest

**Block Field Data** Block: Example Tree # 450

Entry#	Date	Tree #	Percent of Block	Input / Operation / Event	Type	Total Input	Lbr (hrs)	Mach <sup>1</sup> (hrs)	Rain (mm)	Irrig (hrs)	Rain Equiv. (mm)	Total Cost (\$)	Calc. Amt (/ha)	N (g/tree)	K (g/tree)
1	7/07/1997	450	100	SpraySeed	H	3.5	3.0	3.0				\$99	2.1		
2	1/08/1997	450	100	Roundup	H	4.0	3.5	3.0				\$120	2.4		
3	4/08/1997	450	100	Endosulfan	P	3.3	4.0	4.0				\$136	1.9		
4	8/08/1997	450	100	Octave	P	1.7	3.8	3.8				\$360	1.0		
5	8/08/1997	450	100	Mancozeb	P	4.0		4.0				\$110	2.4		
6	9/08/1997	450	100	Irrigation	I		2.0			8.0	26	\$88			
7	20/08/1997	450	100	Octave	P	1.7	4.0	4.0				\$365	1.0		
8	20/08/1997	450	100	Mancozeb	P	3.5						\$55	2.1		
9	12/09/1997	450	100	Kocide DF	P	3.5	4.0	4.0				\$123	2.1		
10	1/10/1997	450	100	Kocide DF	P	3.5	3.5	3.5				\$111	2.1		
11	2/10/1997	450	100	Lime	F	3400.0						\$204	1998.8		

# Pre-requisites for change

- **Motivation**                      **WANT** to change
- **Knowledge**                      **HOW** to change
- **Resources**                      **MEANS** to change

# Where to now

- **Mango Information CD**
- **Delivering Mango Technology**
  - Industry engagement
  - Participatory research trials
  - Development of training workshops and information products
  - Communication strategy

# Challenge

**How can we use the lessons we  
learned in Australia, in  
Pakistan**

# Mapping the Knowledge System

