1

CONTENTS

Preparation Clothes, bags and gloves	4
Start picking Size and colour	
Picking practices Snap picking Single snip picking Double snip picking Use correct snips Place fruit in crates	9 10 11 12
Fruit Handling Check crate Fill crates properly Unloading picking bag Take care when Handling fruit Carrying crates carefully	15 16 17 18 18
Safety Personal safety Food safety Exercises Accidents Manual handling	26 27 28 30

Produced by: NSW Department of Primary Industries Editor: Steven Falivene (Citrus Development Officer: steven.falivene@dpi.nsw.gov.au) Design, illustration & layout: Black Kitty Design (luisa@blackkitty.com.au) Project leader: Dr Tahir Khurshid Acknowledgements:Dr Ghulamnabi Nabi, Akbar Saggu, Tauseef Tahir & Wajid Ali This booklet is based on the "Harvest the Rewards" booklet produced by Citrus Growers of South Australia Inc. © Copyright 2015

PAKISTAN EXPORT CITRUS HARVEST HANDBOOK

pre-release version

4-5



Pakistan Citrus Export Harvest Handbook

This booklet is an outcome of the Pakistan Australian Centre for International Agriculture Research (ACIAR), Department of Foreign Affairs and Trade (Australian Aid) and NSW Department of Primary Industries funded project.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2015). However, because of advances in knowledge, users are reminded of the need to ensure that information upon writin they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary industries or the user's independent adviser. Recognising that some of the information this document is provided by third parties, the State of New South Wales, the author and the publisher take no responsibility for the accuracy, currency, reliability and correctness of any information included in the document provided by third parties.

© Copyright 2015

-2- pre-release version

pre-release version -3-



6-7

START PICKING

Check with your supervisor each morning when and where to harvest. Conditions can change overnight and during the day



- On cold (i.e. winter) days harvest starts between 10 - 12 am until dew on trees has dried and favourable weather conditions are present (p32-35).
- On some days harvest may not occur (i.e. too cold, heavy dew/fog or rain)
- Harvest can commence early morning in summer

-6- pre-release version

Fruit is damaged (oleocellosis, p32) or weakened when harvested in unfavourable conditions



Do not harvest if temperature is more than 35°C, or other unsuitable weather conditions (p32)

-7-

pre-release version



12-13



Single snip picking Always snip pick mandarins and check with your supervisor if required for other varieties

pre-release version

Double snip picking

Use when first learning snip picking and or when fruits are not within comfortable reach



-11-

14-15

FRUIT HANDLING

Do not to tear, scrape or cut fruit

-10-

Place fruit in crates

Crates will stop soil diseases, insects and other contaminates spoiling the fruit

Never place fruit on the ground



-14pre-release version

Check crate

pre-release version

Report any broken or chemically contaminated crates to your supervisor





Remove any insects. sand. sticks, mud, rubbish, pieces of fruit etc.



Put aside crates that need washing

-15pre-release version









22-23

18-19





28-29

Exercises

Carrying fruit works the lower spine (discs) and back muscles. Prior to starting work conduct stretching exercises. The touch sky stretch is advised to be conducted at least every hour to help avoid lower spine problems.

Holding a stretch for 10 sec starts to stretch the muscle (minimum time for stretch), 30 seconds is reasonable and 60 seconds or more is optimal.

Calf stretch Lean forward and stretch hamstring and calf for each leg

Shoulder stretch Hold back each arm

ack each ann

-28- pre-release version





30-31

26-27

Accidents

In case of accident or injury:

- Do not put yourself in danger to help injured, wait until the danger has been removed or stopped
- Take the injured person away from the danger. Try not to move them if they have a possible neck or spine injury, wait for professional first aid
- For a major injury immediately call the supervisor, for other injuries report to your supervisor and seek first aid.



-31-

-30- pre-release version

pre-release version

pre

Manual handling

- · Warm up your muscles (i.e. warm up exercises or other low exertion activities
- · Ensure the load does not exceed your safe lifting weight. If too heavy ask for help
- Do not lift if you have an injury ٠
- Lift by bending your knees and keeping your back straight, do not lift by bending over and lifting with your lower back muscles
- Keep the load close to your body
- Do not twist your back whilst carrying the load, reposition your legs to move around
- Regularly stretch your back (stretching) exercises p 28)

-32pre-release version

36-37

Oleocellosis risk test

In high oleocellosis risk periods (i.e. cold temperatures) the supervisor may check fruit and/or weather conditions prior to harvest . Slightly immature fruit (pale or slightly green) have a higher risk to oleocellosis damage.

During oleocellosis risk periods (i.e. below 15°C) the following measurements and checks provide an indication of damage risk:

- · Temperature and relative humidity to assess if good rind drying conditions are present (VPD more than 0.6 Kpa)
- ٠ The temperature of the rind compared to wet bulb temperature must be more than 2-3°C difference
- Penetrometer rind oil release pressure (RORP) test more than 3 kg pressure to rupture an oil gland

-36pre-release version



Digital weather

meter (dry

and wet bulb

(• 39 • D

Fruit rind temperature measurement

Penetrometer conducting a rind oil release

-37-

pressure (RORP) test

pre-release version

temperature and

relative humidity)



Oleocellosis is a rind injury that can occur when harvesting too roughly (i.e. fruit squeezed or bumped) or during unsuitable weather conditions.

It is caused when rind oil cells break and the oil burns the rind. A dark blemish on the rind with a slightly sunken surface appears within two to four days. Raised intact oil cells may be visible in the damaged area.

-35-



38-39

-38- pre-release version pre-release version -39-

pre-release version