Best Practice Guidelines: Summer Pears

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General:

Summer Pears are grouped for their specific characteristics of high respiration rates, sensitivity to breaks in the cold chain and consumer preference for a sweet soft juicy product. Should best practice guides not be followed meticulously, serious defects, such as internal browning, unsightly chafe marks and over ripeness, will follow.

Because cooling plays such a crucial role in the handling chain of summer pears, planning for sufficient cooling capacity is vital, especially in times of loadshedding.

1. Cultivars:

- Flamingo
- Rosemarie
- Cheeky
- Bon Rouge
- Williams Bon Chretien
- Early Bon Chretien
- Celina

2. Harvest maturity:

- Firmness is the main maturity indicator when it comes to pears. Use DALRRD's regulation as a guideline.
- Add 0.9 kg (2 pounds) to the minimum firmness to lower the risk of overmature fruit coming into the packhouse.
- Use own discretion to start harvesting – pears close to the maximum of the "firmness window" tend to be very susceptible to developing rub marks through the handling chain.
- Don't forget about your market's TSS requirements.

3. Harvest

- Avoid harvesting fruit with high turgidity after rain.
- Avoid harvesting during periods with high ambient temperature as far as possible.
- Cover the bins with wet blankets during transport from the orchard to bin off-loading area.
- All fruit should be transported from the orchard to the packhouse (cold store) on the same day.
- Insert thermocouples to measure the core temperature of the bins during the cooldown period.

4. Fruit receiving

- Measure the temperature of incoming fruit.
- If fruit are packed wet – do not drench at fruit receiving.
- If fruit are packed dry – drench at fruit receiving.
    - Chlorine drench @ 100ppm.
    - Test chlorine concentration every 200 bins to ensure effective treatment.

5. Fruit cooling before packing:

- Room set point: -1.0 °C DAT.
- Stick to your room's designed cooling capacity.
    - If its 200 bins per day, don't load it with 300, rather put the last 100 in another room.
    - Keep loadshedding in mind – this will have a negative affect on your cooling capacity.
- Keep fruit in the cold room for 48 hours before packing.
- Measure fruit temperature to determine if the fruit has been cooled to below 0 °C.
- The next day's fruit must be kept in a separate room.

6. Packing:

- Only use the specially designed SuperVent carton for summer pears.
- Do not change packaging (bags/cartons) without proper trials to test the impact on quality.
- Fruit with a temperature above +2.0 °C should not be packed.
- When packing wet, maintain a chlorine concentration of 100ppm.
- Generally, pack in 20-micron bags.
- Temperature after packing, palletizing and inspection should be kept below 12 °C.
- Timeous inspection by PPECB should help to maintain the cold chain.

7. Re-cooling:

- Forced air cooling (FAC) after packing is non-negotiable.
- FAC @ -2.0 °C. After 24 hours rotate pallets in tunnels 180 degrees – the inside wall will now be on the outside wall of the tunnel.
- Final fruit temperature of -0.5 °C should be reached within 48 hours after packing.

8. Load out:

- Load pallets directly from cold room/tunnel into the shipping container – don't let it stand outside.
- Load out temperatures must not exceed +1.5°C.
- Container temperature set point between -0.5 to -1.5 °C.
    - Thicker bag = lower set point
    - Thinner bag = warmer set point
    - 37-micron bag ideally @ -1.0 °C

- DP1: Minus 1.0 ° C (summer pears in bags only)
    - Carry at minus 1°C for the full duration of the voyage. Closed Vents.
- DP2: Minus 1.5 ° C (summer pears in bags only)
    - Carry at minus 1°C for the full duration of the voyage. Closed Vents.
- D05: Minus 0.5 ° C (summer pears without bags)
    - Carry at minus 0.5°C for the full duration of the voyage. Closed Vents.

9. Transport

- With high ambient temperatures during the early months of the year, gensets should be used when traveling time to the port terminal exceeds 1 hour. This is one hour less than PPECB's Time Temperature Tolerance (TTT) regulations for deciduous fruit, but due to the sensitivity of summer pears for breaks in the cold chain, especially during January to March, this guideline is considered as necessary.

- Take note that a genset adds about 1 ton to the vehicle mass and problems may occur at weighbridges with axle mass limitations.

(PPECB HP22 Carrying Temperature Regime Codes of Perishable Produce)