

## 5.1.2

### 14. Handling of apples

Apples are not as sensitive to the development of defects due to poor cooling as summer pears. This however, is not a reason to slacken the protocols as stringent cooling practices can add months of storage potential to your produce.

The most sensitive cultivars are the Gala types, Golden Delicious, Braeburn and Red Delicious types. Apples also require forced air-cooling.

- 📖 Do not over-utilise the daily cooling capacity of the room.
- 📖 Stack the bins directly in the path of the air, to force the air through the wall of fruit.
- 📖 Do not stagger or block pack the bins. This will result in the air taking the route of least resistance and cooling will be inefficient and moisture loss will be high.
- 📖 Keep doors closed or install plastic curtains or automatic air curtains.
- 📖 Make sure that for initial cooling, fan speed is high. After the room is filled and closed, airspeed is reduced to minimise moisture loss.
- 📖 Ethylene sensitive cultivars such as Royal Gala should not be loaded in the same container with high ethylene producing cultivars such as certain Summer pears. The ethylene might have a detrimental effect on fruit quality.
- 📖 Take special care of reloading times after packing, especially in cases where fruit is sorted and packed as Class 1 and where Class 2 fruit is rerouted to the cold store.

**Table 3. Handling protocols and storage parameters for apples.**

Cultivar	Poly bag Packaging	Max Storage period RA	CA storage gas mixture*	Potential shelf life	Inspection STD's	Optimum storage temperature
Gala types	n/a	3 months	1,5% O <sub>2</sub> + 1,5% CO <sub>2</sub>	7 days	Min 5,9 kg	-0,5°C
Golden Delicious	Poly Bag	6 months	1,5% O <sub>2</sub> + 2,5% CO <sub>2</sub>	7 days	Min 6,8 kg	-0,5°C
Red Delicious	n/a	6 months	1,5% O <sub>2</sub> + 2,5% CO <sub>2</sub>	7 days	Min 6,4 kg	-0,5°C
Braeburn	n/a	6 months	1,5% O <sub>2</sub> + 1,5% CO <sub>2</sub>	7 days	Min 6,4 kg	-0,5°C
Fuji types	n/a	6 months	1,5% O <sub>2</sub> + 1,5% CO <sub>2</sub>	7 days	Min 5,4 kg	-0,5°C
Granny Smith	n/a	6 months	1,5% O <sub>2</sub> + 1,0% CO <sub>2</sub>	7 days	Min 5,9 kg	0,0 - 1,0°C
Cripps Pink	n/a	6 months	1,5% O <sub>2</sub> + 1,0% CO <sub>2</sub>	7 days	Min 6,3 kg >10 % Red Colour	-0,5°C
Cripps Red	n/a	6 months	1,5% O <sub>2</sub> + 2,5% CO <sub>2</sub>	7 days	Min 6,3 kg	-0,5°C

Pink Lady®	n/a	4 months	1,5% O <sub>2</sub> + 1,0% CO <sub>2</sub>	7 days	Min 7.0 kg >40 % Red Colour Min TSS 13%	-0,5°C-
Sundowner®	n/a	6 months	1,5% O <sub>2</sub> + 2,5% CO <sub>2</sub>	7 days	Min 30 % starch breakdown	-0,5°C

\*Extract. Refer to Annexure 3 for detailed CA gas mixtures. With permission from ARC Infruitec-Nietvoorbij.