

8.3.1

SUMMER PEAR PROTOCOLS 2001

The Summer Pear Work Group, consisting of technical experts (including members of exporters and PPECB) and chaired by Richard Hurndall of Hortec, met on several occasions during the past season and made certain recommendations to be adopted in the inspection standards, as well as providing operational guidelines. The recommendations and guidelines were endorsed by SAAPPA.

As background, the Summer Pear Work Group was convened to make recommendations to safeguard the quality, and thereby the image and profitability of summer pears. In past seasons, quality problems affected returns of the South African summer pear industry.

For the purposes of these protocols, summer pears are defined by the cultivars: Bon Chretien, Bon Rouge, Rosemarie, Flamingo, Doyenne du Comice, Beurre Hardy, Harrow Delight, Clapp's Favourite, Starkrimson and General le Clerq.

The following is a summary of recommendations of the work group.

Operational Guidelines

Harvesting

Accurate crop estimates are necessary for planning of harvesting operations, including size of the labour force, number of bins required, etc. There is no substitute for counting of fruit, and growers should allocate enough time for this process.

Fruit firmness remains the most useful indicator of maturity and storage potential in pears. Orchards should be monitored on a regular basis, with large enough samples to be representative of the block. Contact Hortec if you require assistance with ranking orchards according to harvest or correlating firmness with size for selective harvesting decisions. See attached 'certificate of analysis'. Harvesting should be scheduled to avoid bottlenecks late in the picking window.

Adjustments to Minimum Firmness Standards:

Bon Chretien types	from 6,8 kg to 7,2 kg
Starkrimson	from 5,4 kg to 6,8 kg

For co-operative packing facilities, good communication between farm and packhouse is essential to ensure smooth transfer and handling of fruit.

Cooling and Packing

All summer pears are extremely susceptible to rapid loss of firmness under conditions of delayed cooling, particularly towards the end of each cultivar's picking window. It is therefore imperative that this fruit be cooled to a pulp temperature of minus 0.5 °C as soon after harvest as possible. Field heat should be minimised by keeping harvested fruit in the shade, and picking in the cooler times of the day if at all possible.

Most pears are packed in plastic liners that retard the cooling rate of the fruit, even in forced air cooling systems. Only forced air (tunnel) cooling should be used, as room cooling is too slow.

Some success has been achieved in packing some fruit without bags, but this fruit cannot be stored for any length of time without significant yellowing and softening. It should, therefore, only be considered for non-high risk consignments (see firmness indicators below) with specific marketing requirements where fruit is sold on a fixed program basis, and only in consultation with the receiver.

Temperatures

Temperature monitoring and recording throughout the handling and transport process is critical. It is recommended that arrival temperature at the harbour be monitored and recorded. It is in the interest of all packhouses to properly cool the fruit to a pulp temperature of minus 0.5 °C (measured in the warmest part of the pallet) prior to transport to the port. The port facilities are too frequently swamped with warm loads requiring re-cooling. This leads to delays in dispatch, with subsequent deterioration of fruit quality and shelf-life.

Stand time of delivery vehicles in the harbour should be monitored.

USDA protocols (loggers/probes) are strongly recommended. These prescribe a maximum pulp temperature of 0 °C prior to commencement of loading. Current regulations for summer pears prescribe a maximum pulp temperature inside the pallet of 0.5 °C for containerised shipments, and 1 °C for conventional shipment. Pulp temperature of 'outer' fruit on the pallet must not exceed 2 °C (porthole or integral containers, irrespective of packaging type), 8 °C (conventional break bulk shipping, with plastic liners in cartons) or 12 °C (conventional break bulk shipping, without plastic liners in cartons).

No mixed fruit types should be allowed in a deck or container.

For fruit in plastic bags, an initial air delivery temperature of minus 1,8 °C for three days can be specified for cooling on the ship. Thereafter, minus 1,3 °C can be used. A temperature of minus 1 °C is recommended for pears without plastic bags.

PPECB monitors air temperatures in all vessels reporting the data on a daily basis. Fruit pulp temperatures may, however, be significantly

higher, especially under conditions where fruit is ripening rapidly. It is practically impossible to recool warm fruit to the correct pulp temperature once aboard the vessel, as the refrigeration systems were not designed for this function. This emphasises the need to adequately cool the fruit prior to loading aboard the vessel or container.

Mode of transport

As a principle, the work group felt that the use of integral containers be phased in for summer pears over a period of time. Whilst this obviously holds financial implications, this must be weighed against the benefits of improved quality through enhanced maintenance of the cold chain.

As a first step, it is recommended that integral containers be used for the higher risk summer pear consignments. High-risk consignments can be linked to firmness levels below the following figures:

	lbs	Kg
Bon Chretien	19	8,6
Bon Rouge	19	8,6
Rosemarie	13	5,9
Flamingo	14	6,3
Doyenne du Comice	10	4,5
Beurre Hardy	10	4,5
Harrow Delight	15	6,8
Clapp's Favourite	19	8,6
Starkrimson	19	8,6
General le Clerq	13	5,9

Compiled by Hortec and PPECB, with inputs from members of the Summer Pear Work Group.

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