

# LifeSpan<sup>®</sup> for Stone Fruit



## LifeSpan<sup>®</sup> Modified Atmosphere Packaging (MAP)

LifeSpan<sup>®</sup> box liners and pallet shrouds are an innovation in post-harvest packaging that extend the storage and marketing life of fresh produce. Used commercially for over 15 years, LifeSpan<sup>®</sup> is a global leader in MAP products and is now an important packaging component for many of the worlds leading fresh produce exporters.

### LifeSpan<sup>®</sup> for Stone Fruit

LifeSpan<sup>®</sup> extends the storage and shelf life of both fresh packed and pre-conditioned fruit delivering Plums, Peaches and, Nectarines to market in harvest fresh condition. Most varieties of Stone Fruit packed in LifeSpan<sup>®</sup> will have a significantly longer storage and marketing life than air stored fruit.

LifeSpan<sup>®</sup> is a proven cost effective mechanism for prolonging the post harvest life of most Stone Fruit, offering greater flexibility in distribution and is suitable for organic produce.

### How it works

LifeSpan<sup>®</sup> MAP Packaging allows the creation of a low oxygen (O<sub>2</sub>), increased carbon dioxide (CO<sub>2</sub>), and high humidity atmosphere inside a box liner. Similar in concept to a CA Coolstore.

Respiration rates vary across the range of stone fruit types (ie Plum is different to Peach etc). As such, the oxygen and carbon dioxide permeability of a LifeSpan<sup>®</sup> liner is specifically designed for the type of stone fruit to be packed in it. The modified atmosphere created will significantly reduce the fruits respiration rate, with the following benefits.

### Benefits for Stone Fruit

- Maintenance of fruit firmness or pressures through reduced respiration
- Reduced dehydration or shrivel and subsequent fruit weight loss from a high humidity environment and slower respiration
- Delay of the onset of chilling injury symptoms
- Slower ripening, skin colour and flesh texture change during storage or distribution, allowing even ripening at market & longer shelf life
- Ability to extend shelf-life post pre-conditioning

### LifeSpan<sup>®</sup> Experience

Generally LifeSpan<sup>®</sup> works best on mid to late season varieties of most yellow and white flesh varieties of stone fruit, in excess of 50 varieties have been packed in LifeSpan<sup>®</sup> across the range of Plums, Nectarines and Peaches. New varieties of stone fruit are being developed rapidly and as such it is essential that you first trial LifeSpan<sup>®</sup> with any new varieties. Note: A full list of specific details about varieties known to have been packed in LifeSpan<sup>®</sup> can be gained from your local LifeSpan<sup>®</sup> Distribution Agent or by contacting us directly.

# LifeSpan<sup>®</sup>

Modified Atmosphere Packaging



### Contacts

For more information, visit [www.amcor.com/lifespan](http://www.amcor.com/lifespan) or email [lifespan@amcor.com](mailto:lifespan@amcor.com)

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## Plums

For all plums, best results are attained when fruit is allowed to fully free ripen, ie. full colour but still firm. This ensures high sugar levels which in turn delays the onset of chilling injury and maximises fruit response to MAP. Although some variations occur due to varietal characteristics generally results are good for between 4-8 weeks on many plum varieties, 11-13 weeks on Angeleno. Many pluot varieties such as Blue Gusto, Flavour Rich, Flavour Fall and, Flavour King have also been successfully stored in LifeSpan<sup>®</sup> plum liners. Seek full list of varieties for specific exceptions.

## Nectarines

For yellow flesh nectarines best results are attained on all varieties when fruit is allowed to fully tree ripen. ie. Full colour but still firm. This ensures high sugar levels which in turn delays onset of chilling injury and maximises fruit response to LifeSpan<sup>®</sup>. Generally results are good for between 4-6 weeks on most yellow flesh varieties. White flesh 6-7 weeks. Seek full list of varieties for specific exceptions.



## Peaches

Many yellow flesh and white flesh varieties have now been packed,

stored and shipped successfully in LifeSpan<sup>®</sup>. Peaches have consistently stored 30-80% longer in LifeSpan<sup>®</sup> than the same variety in air storage.

Yellow flesh peaches have had greater variations between specific varieties and thus trials are essential. Successful yellow flesh varieties include, O'Henry, Elegant Lady and September Sun. Seek full list of varieties for specific exceptions.

## Preconditioned Fruit

Some varieties of pre-conditioned stone fruit have been packed and shipped successfully in standard LifeSpan<sup>®</sup> liners and experienced the same list of benefits as non-preconditioned fruit.

## Importance of pre-cooling & cool-chain management

Good temperature management commences the

moment produce is harvested. LifeSpan<sup>®</sup> is designed to work at a pre-determined temperature range of 0-2°C / 32-36°F so it is important produce is pre-cooled before packing.

Maintaining the cool-chain at the designated temperature range throughout storage and distribution is essential for maximising LifeSpan<sup>®</sup>'s benefits. It is important that the LifeSpan<sup>®</sup> liners are opened when the produce is removed from the cool-chain for any significant period of time.

## Chilling Injuries in StoneFruit – The Limiting Factor.

Chilling injury in stone fruit is a group of symptoms caused by storing stone fruit at undesirable temperatures for extended periods. The expression of chilling injury is often seen or described as, mealiness, wooliness, gel formation, flesh discolouration, bleed from the skin and bleed from the stone. LifeSpan<sup>®</sup> neither causes, nor prevents chilling injury. In most cases some form of chilling injury will still be the limiting factor to storage time when packed in LifeSpan<sup>®</sup>, however this is likely to be far longer than if the same fruit had been stored in air. LifeSpan<sup>®</sup> cannot prevent chilling injury but can assist to provide extended storage life before its onset.

Stone fruit can be stored for longer before the onset of chilling injury due to the following:

- Storage always at 0°-2°C / 32-36°F. This can double the storage life compared to 5°C / 41°F before onset of chilling injury.
- Packing full colour firm tree ripe fruit with high sugar content (TSS). Historically export fruit has often been harvested immature to survive long sea freight voyages without ripening. However LifeSpan<sup>®</sup> will suppress the ripening for many weeks and the higher sugar content of tree ripe fruit adds 1-3 weeks extra storage before the onset of chilling injury.
- Beneficial modified atmospheres may suppress the development of chilling injury in many varieties of stone fruit. This can add 1 week extra storage life.

Note that some of the symptoms due to chilling injury only express after the fruit is removed from both modified atmosphere and cool storage and allowed to ripen. Thus it is very important that trials are undertaken by new users of LifeSpan<sup>®</sup> to determine the maximum storage period possible before onset of chilling injury.

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## Contacts

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