



## Platforms for increased labour efficiency

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New improved orchard design will lead to greater technology uptake and the opportunity to use labour saving devices more such as platforms. Borrowing from a few of Karen Lewis slides (previously presented) she mentioned a whole lot of efficiency gains, platforms offered compared to ladders. These involve 25-40% gains in pruning, 40-60% gains in tree training, 20-25% gains in fruit thinning, and 65-116% in string tying.

So if there are so many efficiency gains by using platforms, why is that so few growers use platforms and if they do, often for only one task. It's not uncommon to see picking platforms parked up after harvest and not being used for pruning or thinning.

Currently, there are also far more growers who don't use platforms even though they have been around for quite some time. The most common reasons why growers don't use platforms include:

- orchard architecture not suitable
- steep terrain
- maintenance and repair costs are deemed too high,
- the high capital cost
- limited availability of a suitable platform
- no perceived efficiency gains (sometimes platforms have been tried and failed).

## Lessons learnt from platforms

We know there are many labour efficiency gains to be had from platforms but there are also some major pitfalls that most platform owners have come across.

We know platforms are not suitable for large dense trees because these trees don't allow easy access to all the fruit. Tree architecture needs to be set up specifically for efficient platform use. Narrow planar canopies that are no deeper than an arm length and preferably narrower are necessary. Craig Hornblow describes the canopy of the future as a SNAP canopy.

- Simple

- Narrow
- Accessible
- Productive

To take this further, experience has shown trees with simple, single lined branches with fruit thinned to singles are easier to pick and suit efficient platform use. Trees need to be open enough so that light can colour fruit evenly from top to bottom of the tree. We like to be able to see through 3-4 rows that way the trees aren't too dense. If this is happening you can be sure that each part of the canopy is receiving greater than 20% of incoming radiation.

Sloping orchards are more difficult for platforms to function efficiently however there are now some very good self-levelling platforms available.

Maintenance can be an issue. Experience has taught platform operators to implement a regular maintenance program pre-season, replacing belts, bushes, pulleys, servicing motors and carrying plenty of spare parts on hand. The cost of downtime when a pulley fails or puncture happens is generally 5-6 staff standing round waiting for someone to repair the machine. Often some things get overlooked with servicing and adopting a pre-emptive maintenance program is better than a responsive one as the later will cost more.

Purchase price can be high for platforms however as more and more become available this should trend down.

#### Less training required.

A big advantage of platforms is that less training of staff to work on them is required compared to ladders. It only takes a few hours to train someone the right picking technique for a platform, compared to ladders. There is so much more to learn including how to place a ladder, how to pick the tree bottoms first, then go up a ladder with an empty bag to avoid banging/bruising fruit on the ladder on the way up and how not to over reach for safety and so on. Training staff to pick from ladders can be far more involved and time consuming.

#### Keeping the work flow even

One of the largest drawbacks of a platform is the entire machine is dependent on the slowest picker. this limitation requires continual management but can be overcome with good tree design, flexibility in people placement around the machine and machine forward speed.

Because platforms staff work as a team, this can encourage more upskilling of staff to conform to the team. Peer pressure can improve performance faster than someone out on their own not really knowing what's expected from them. Also it's not uncommon to see friendly team rivalry happening between teams when more than one platform is working alongside another.

Platforms benefit from having someone experienced to drive the platform and preferably they have some knowledge on maintenance as this can save valuable time and cost waiting for someone to come to help start a stalled machine. Ensuring at least one person is experienced on operating the platform can save a lot of down time and assist by better scheduled servicing to lessen breakdown time.

Some growers prefer to have 3 platforms working together as one experienced supervisor can more efficiently look after 16-18 staff compared to the cost of this person looking after 1 platform (5-6 staff). The supervisor can also shift staff around to get optimum productivity from each platform.

Another advantage is when inclement weather is coming, often pickers using a ladder will not start the next bin as it may take 2 hours to fill, whereas a platform can turn a bin out every 10 minutes so they can keep picking right up to the time inclement weather stops them.

### Increase the labour pool and keep them safe.

Picking with a bag and ladder is a physically demanding job. When a platform is used, the need for physical strength and fitness of the staff is greatly reduced. This means that suddenly most people can pick apples whereas with a ladder, only the fit young strong staff are capable. In Europe where the bulk of the work is done by family members, one of the main reasons for changing tree architecture and going to platforms was to increase the labour type that could pick. Craig Hornblow did an analysis that some pickers climb nearly the height of Mount Everest during a busy season.

Staff on platforms can often work longer hours because picking is less taxing physically compared to staff on ladders. Platforms can have less Health and Safety issues compared to a ladder especially in damp/wet conditions as ladders can be slippery whereas most platforms have grid mesh for staff to stand on which offers better grip and safety barriers. Karen Lewis showed that between 1996 and 2001, \$20 million in claims occurred from ladders.

### Fruit Quality

For some difficult to pick varieties, platforms can often reduce the amount of bruised fruit as fruit are picked and placed onto belts. With all pickers being in small teams, the ability to maintain constant quality control is also enhanced.

### Regular monitoring is required

Simply owning a platform doesn't guarantee labour efficiencies. Platform efficiency should continually be monitored. I recently saw an example where continuing to pick from platforms after 80% of the crop had been picked (in two picks) cost the grower an additional \$4000 in wages. If they had pulled the platforms out and picked from ladders, this loss would have been significantly less. Monitoring platform productivity is very important all the time. However, another outcome was this supervisor wasn't doing his job by analysing daily productivity. This is perhaps the biggest reason why growers who had been using platforms have stopped using them. They worked for a while but often they proved costly in the longer term. You can never rest while owning platforms, but isn't that true about supervision of staff in general.