

# Notes For New Nurseries

## - Design, Layout And Construction



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**When initially designing a new nursery, the possibility of high wind events at some time in the future should be recognised. Plan and design as though a severe storm or cyclone will eventually occur. Be prepared for weather events that might bring high winds, such as cyclones or severe storms, and for the damage that such winds can cause. But also be prepared for torrential rain and flash flooding that can accompany such weather events. The damage caused by winds will be distinct from that caused by water and flooding. The nursery design should incorporate all contingencies wherever possible.**

Before selecting what type (size, shape, etc...) structure you want refer to the detailed information and the technical specifications for the construction of resilient nursery facilities as presented in the report *Improving the Performance of Crop Protection Enclosures to Resist Wind Loads* enclosed with this information pack.

Many nursery businesses have traditionally featured temporary or unsecured facilities. Shadehouses made of shadecloth supported by a basic frame are often constructed by the nursery owner themselves, and are not necessarily robust enough to withstand a weather event. When designing your nursery, this may remain the best and most cost-effective way to develop facilities to protect your plants from high light levels. However, be aware of the likely performance of the structures in strong winds. Weigh up the benefits of constructing an inexpensive and more easily replaceable structure with the possible longer-term costs of losing the structure in a weather event compared to a more robust structure.

The topography of the property should be taken into account during nursery planning. Wind speeds can increase over hills and the most vulnerable structures and valuable plants should be positioned in most protected locations.

When selecting shadecloth, a looser weave may be preferable to reduce wind resistance if this also provides an appropriate level of light protection for the plants. Designs might also include the option to remove wall panels from igloos or shadecloth from shadehouse structures. This would mean that they can be prepared prior to an event to allow the wind to blow through.

In a high wind event, loose materials and items can often do the most damage to property and plant stock. Be aware of this when designing the facilities. Consider the likelihood that any part of the structure could become airborne and incorporate ways to avoid this in the design. Items that may be vulnerable in a storm include advertising materials, signage, guttering, awnings and vents. For example, overhead or suspended irrigation systems can be more vulnerable in storms and cyclones than other methods of irrigation. This may need to be considered during nursery planning and design.

The plants themselves are probably the most valuable assets in a nursery. Repairing damaged structures will be essential, but conserving as many plants as possible during that process is also critical to speeding up the recovery process and getting back to business. A nursery design should consider elements that will protect plants before and after an event and will provide back-up irrigation and power if necessary.

It is highly recommended that advice is obtained from professionals with experience in the construction of nursery facilities. The consultant/s should have knowledge about structural engineering, nursery structures that will best suit the local area and the property layout. If you are constructing facilities yourself, make sure that you know and follow the specifications of the manufacturers.

## Protecting plants

- Protecting your plants may not be possible and depending on your nursery and the different product lines you grow the strategies available for their protection will vary.
- Lay larger plants down as flat as possible - in one direction. This places them down below the main area of wind activity (i.e. lower than 30cm from the ground), minimises damage from being pushed over from the wind and also minimises the tangling which causes significant damage to the plants when untangling after the event.
- Place small trays and pots on the ground (under benches if possible) to reduce the chance of being blown about. Note: Use your judgement based on what you know about your property and your specific crops. For example, in nurseries prone to flooding, exact placement of plants should be carefully considered.
- Some nurseries have 'sheltered' areas either as a result of the site topography (such as embankments, gullies or depressions) or have sturdy structures such as sheds or media storage bays. Many nurseries protect as much higher value plants as possible by moving plants to these areas just prior to the event.
- Check with staff that they have a plan make any agreements about returning to work and other arrangements as possible.
- Contact neighbours and nearby businesses to ensure they are informed of the coming event and to confirm any collaborative recovery plans that you may have organised during the long- and medium-term preparations.

## Protecting yourself and your family

Refer to the materials provided with this pack from the Queensland State Emergency Service (SES) or refer to their website for information. Also check with your local authority and local media for more specific and up-to-date information as the situation progresses.



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