

Citrus growers must prepare for hurricanes every year

By **Bob Rouse**
and **Mongi Zekri**

Hurricane preparation for citrus growers in 2013 is the same drill as every year. Each year, growers look forward to the rainy season to help grow their fruit to maturity. This year, we will be praying for good rains following a dry year and a long drought. Along with the anticipation of the rainy season is the reality that hurricanes may bring too much water in August and September at the end of the rainy season.

Every year, there are predictions of what the hurricane season (June 1 through November 30) will bring. Sometimes it may seem like hocus-

Saffir-Simpson hurricane storm rating scale		
Storm category	Wind speed (mph)	Expected damage to citrus
1	74-95	Some loss of leaves and fruit, heaviest in exposed areas
2	96-110	Considerable loss of leaves and fruit with some trees blown over
3	111-130	Heavy loss of foliage and fruit, many trees blown over
4	131-155	Trees stripped of all foliage and fruit, many trees blown over and away from property
5	over 155	Damage would be almost indescribable, groves and orchards completely destroyed

pocus when the prognostications are made. Each year, highly popular and widely publicized prognostications for the Atlantic basin come from Colorado State University (CSU) and National Oceanic and Atmospheric Administration forecasters.

One of the big challenges for 2013 will be whether or not El Niño will develop this year. Since El Niño didn't fully develop in 2012, and we have returned to neutral conditions, there is the possibility that El Niño will develop for the 2013 hurricane season. The average number of storms per season (1981 to 2010) has been defined

as 12.1 tropical storms, 6.4 hurricanes, and 2.7 major hurricanes (storms of category 3 in the Saffir-Simpson Hurricane Scale). In 2011, CSU scientists expected the cycle to continue for another 10 to 15 years before switching back to a less active phase. The pre-season numbers prior to April 10, 2013 are for 15 to 18 named storms, eight to 11 hurricanes, and three to six major hurricanes.

The coastal area of Florida where citrus is grown has been extraordinarily lucky in recent years, except for the destructive hurricane seasons of 2004 and 2005. The three hurricanes that impacted citrus in 2004 were Charley (August), ripping the Gulf Coast up through Central Florida, and Frances and Jeanne (September), which devastated east coast groves. In 2005, Wilma (October) caused fruit loss and some tree loss in South Florida.

The bottom line is that predictions are dubious and a curiosity, and shouldn't affect what we must do. We must prepare every year, regardless of weather predictions. Little can be done to protect trees and fruit from hurricane-velocity wind, but we can take steps to protect the people, equipment and supplies that will be needed for the recovery. Here is a checklist for citrus grove managers:

PRE-HURRICANE PREPARATION CHECKLIST

Personnel assignments

1. Make a list of all tasks and make assignments.
2. Update the names on the damage inspection team.
3. Update worker contact list and means for them to call in after the storm.

Safety training

Train workers in the safe operation of unfamiliar equipment they may

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Fruit loss from hurricane winds

have to use. Example: Drivers may have to use chain saws to remove downed trees blocking roads.

Insurance

Buildings, equipment (including tractors, irrigation parts and supplies) may be damaged.

Buildings

1. Close storm shutters or board up windows.
2. Store loose, light-weight objects such as garbage cans and tools.

Liquid tanks

1. Keep fuel, fertilizer and other tanks full so they don't move in the wind.
2. Ensure sufficient fuel is available.

Roads and ditches

1. Clear, grade and keep roads well maintained and keep ditches clean and pumped down.

2. Arrange with a flying service for grove manager to survey grove damage.

Emergency equipment

1. Test-run generators, chain saws, torches, air compressors and other equipment.

2. Have shovels, slings, fuel, paint and equipment parts available and in good repair.

3. Know where to obtain backhoes, front-end loaders and other heavy equipment.

Communications equipment

1. Ensure that radios are in good working order.

2. Have hand-held portable radios with extra charged battery packs available.

3. Direct truck-to-truck radio and cellular phones save valuable time during recovery.

Hazardous materials

1. Secure hazardous materials prior to a storm.

2. Shut down gasoline pumps.

Emergency contacts

Have a list of emergency phone numbers, including electric companies, the sheriff and medical services.

Cultural practices

1. Regular pruning can reduce broken limbs and minimize toppled or uprooted trees.

2. Windbreaks reduce tree damage and spread of citrus canker bacterium.

POST-HURRICANE RECOVERY CHECKLIST

Damage inspection

Make a visual assessment of the damage and determine priorities and equipment needed.

Prioritize damage

A priority plan can quickly determine where and how to begin recovery operations.

Employee call-in

When safe, call in those needed for damage inspection and grove recovery work.

Clear road access

Clear roads to where trees must be reset or recovery activities must be conducted.

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Tree loss from hurricane winds

Water removal

Remove excess water from tree root zones within 72 hours to avoid root damage.

Tree rehabilitation

1. Resetting trees to an upright position should be accomplished as soon as possible.

2. Toppled trees should be pruned back to sound wood.

3. Painting exposed trunks and branches with white latex paint helps prevent sunburn.

Irrigation

Check the irrigation system as rehabilitation is a long process and water is critical.

Fertilizer

1. Plant nutrients should be applied when new growth begins.

2. Toppled trees will require less fertilizer due to reduced root system and tree canopy.

3. Reduce N fertilizer proportionally to canopy or leaf loss.

4. The following year, trees may require more-than-normal rates to re-establish canopy.

5. Micronutrients should be applied in nutritional sprays to the leaves.

Weeds

Resume row middles mowing and herbicide applications on a normal schedule.

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