

El Niño Impacts on Agriculture in the Southeast

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El Niño has returned for the first time since the weak event of 2002-03. Since the forecast calls for a weak event again, its effects may be less evident than during a normal or strong El Niño event such as the ones of 1982-83 and 1997-98. It is important to remember that for the portions of the Southeast United States (Florida, the coastal plains of Alabama and Georgia) El Niño brings very wet and cool winter and spring seasons. El Niño is also known to be associated with a relatively inactive tropical hurricane season. We believe that now is a good opportunity to review some of the implications that El Niño has on our agricultural industry. The links in the table below point to more detailed discussions available at Agclimate.org or specific [EDIS publications](#) available online. **For more information, contact your local extension agent.**

Crop/Commodity	Potential El Niño impacts
Winter vegetables (tomato , green peppers)	Tomato and green peppers generally yield less during El Niño years than during Neutral or La Niña years. Most soil-borne pathogens and fruit quality problems increase in El Niño years. Fruit quality problems like gray wall are also more prevalent in El Niño years. EDIS publication: Using Seasonal Climate Variability Forecasts: Risk Management for Tomato Production in South Florida .
Forestry	El Niño plantings (wetter conditions) are generally well established. However, under such conditions, plantings in very low lands might be avoided to minimize losses as excessive rains might drown seedlings. Wetter conditions may also have a negative impact on harvest operations. EDIS publication: Using Seasonal Climate Variability Forecasts to Plan Forest Plantation Establishment
Pasture	In general El Niño years are good for winter pasture due to wetter conditions. However, growth may be slower due to increased cloudiness and consequent decrease in solar radiation. EDIS publication: Climate-Based Management Options for North Central Florida Beef Cattle Producers
Row Crops	El Niño impacts are less evident on annual summer crops since its strongest signal occurs during fall, winter and spring. Analysis of historical yield data is a good way to evaluate potential impacts on various row crops. Check the regional maps or county yield data available in AgClimate. Increased disease pressure and slower development may affects spring sown horticultural crops.

Crop/Commodity	Potential El Niño impacts
<p>Fruits – temperate (peach, nectarine, apple, pear, blueberry, raspberry, strawberry)</p>	<p>Seasonal climate variability impacts deciduous fruit production mainly through changes in the satisfaction of dormancy that occurs by the accumulation of chilling hours (temperature at or below 45°F) and changes in the accumulation of heat units that promote flowering and fruit development. Also affected can be the extent of the threat from freeze damage during flower and fruit development, and the timing and severity of diseases and pests.</p> <p>El Niño conditions generally result in increased chill accumulation in the early part of the winter (Nov. – Jan) and can reduce the need for oil or other dormancy compensating sprays in peaches and blueberries. Check the chilling forecast and the regional chill maps for greater detail. While temperatures are cooler overall, the threat of severe freezes in the Southeast is reduced when El Niño conditions predominate.</p> <p>Cooler rainy conditions may slow development rates in some perennial fruit crops such as strawberry. Lower levels of solar radiation resulting from cloudy conditions may also affect growth in some cultivars. Additionally, conditions may favor the development of fungal diseases such as Anthracnose and Botrytis fruit rots. Crown rots caused by <i>Colletotrichum</i> and <i>Phytophthora</i> species and angular leaf spot (<i>Xanthomonas fragariae</i>) are other diseases that are favored by cool wet winters. Thus, in contrast with the 2006 season, when we had a La Niña year that is typically drier and warmer than normal, and consequently had very little disease, growers should be alert and prepared for a coming season with potentially high disease pressure.</p>
<p>Fruits – subtropical (lychee, longan, loquat, sapodilla, mango)</p>	<p>As with temperate fruits, seasonal climate variability impacts fruit production through: 1) changes in the satisfaction of dormancy that occurs by the accumulation of chilling hours below 60°F from mid-November through January and 2) through the effect of temperatures and rainfall on maintaining trees in a non-vegetative (environmentally induced dormancy called quiescent) state from September through February. Like temperate fruits, seasonal climate also affects the timing and severity of diseases and pests.</p> <p>The potential increase in cool weather should facilitate lychee and longan quiescence especially if producers have not applied any nitrogen containing fertilizer and stopped irrigating groves from August onward. Cooler temperatures should enhance mango tree quiescence and as with lychee/longan no nitrogen should be applied to mango trees during the fall/winter period. Increased wet conditions may increase fruit disease problems on loquat flowers and fruit, will increase disease pressure on mango panicles, flowers, and young fruit but, enhance sapodilla fruit development. Thus, in contrast with the 2006 season, when we had a La Niña year that is typically drier and warmer than normal, and consequently had very little disease, growers should be alert and prepared for a coming season with potentially high disease pressure.</p>

Crop/Commodity	Potential El Niño impacts
Fruits – tropical (mamey sapote, carambola, papaya, guava, banana)	<p>An increase in depth and/or frequency of cool temperatures will impact tropical fruits primarily by decreasing plant and fruit growth and development. The increase in wet conditions will increase disease problems.</p> <p>In general, temperatures at or below 60°F will decrease tropical fruit growth of mamey sapote, carambola, papaya, guava, and banana, increase disease pressure on papaya, guava, and banana, and increase defoliation rates of mamey sapote and carambola trees. An increase in wet conditions will increase disease pressure and subsequent defoliation rates of mamey sapote and carambola trees. Thus, in contrast with the 2006 season, when we had a La Niña year that is typically drier and warmer than normal, and consequently had very little disease, growers should be alert and prepared for a coming season with potentially high disease pressure.</p>