

La Niña Impact on Agriculture in the Southeast

A La Niña watch has been issued by the Southeast Climate Consortium and the state climatologists of Alabama, Florida and Georgia. A watch means that conditions are likely for the development of a full-fledged La Niña event. Latest forecasts indicate a 65% chance that a La Niña will develop compared to 34% for neutral and 1% for El Niño events.

La Niña conditions usually bring a warmer and drier fall and winter seasons (October through March) to Florida, central and lower Alabama and central and southern Georgia. La Niña events in 1999 and 2000 and more recently in

early 2006, were associated with an increase in forest fires across Florida and Georgia. La Niña is also known to be associated with an active tropical hurricane season.

Now is a good opportunity to review some of the implications that La Niña has on our agricultural industry. The links in the table below point to more detailed discussions available at Agclimate.org or UF-EDIS and UGA publications available online. **For more information, contact your local extension agent.**

Crop/Commodity	Potential La Niña Impacts
Winter vegetables (tomato , green peppers)	Tomato and green peppers generally yield more during La Niña years than during Neutral or El Niño years. Dry weather generally decreases fungal and bacterial diseases and help growers reduce the number of fungicide applications, however viruses caused by thrips (Tomato Spotted Wilt [TSW]) and white fly (Tomato Yellow Leaf Curl [TYLCV]) are problems. EDIS publication: Using Seasonal Climate Variability Forecasts: Risk Management for Tomato Production in South Florida
Forestry	Warm and dry conditions associated with La Niña events may prompt managers to consider re-scheduling planting of drought vulnerable seedlings, reinforce existing control efforts of southern pine beetle, and delay the harvest of pine straw to retain soil moisture. EDIS publication: Using Seasonal Climate Variability Forecasts to Plan Forest Plantation Establishment
Pasture	The objective of ranchers for this winter is to get through with the minimum amount of grain feed, but success of winter pastures depends on rainfall. This is especially true when over seeding. The recent severe drought has created a pasture and hay shortage throughout the region, greatly impacting farm finances and profit. In central and south peninsular Florida over seeding of cool-season annuals into an established grass sod often fails due to insufficient soil moisture and this is generally not recommended unless irrigation is available since dry conditions can be exacerbated during La Niña seasons. Grazing management this fall and winter is critical especially under drought conditions that still grip the southeast. Related articles: Winter annuals make sense (UGA CAES publication) , Climate-Based Management Options for North Central Florida Beef Cattle Producers (EDIS)

Crop/Commodity	Potential La Niña 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. La Niña conditions generally result in decreased chill accumulation in the early part of the winter (Nov. – Jan.) and can increase 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.</p> <p>Winter annual broad leaf weeds may thrive under warm and dry conditions, and these weeds act as host plants for cat-facing insects (sucking bugs) of peaches. High populations of cat-facing insects have been documented in peach orchards where winter annual broad leaf weeds are allowed to grow.</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 for warm weather during the fall and winter may predispose lychee, longan, and mango to continue or initiate vegetative growth during the fall/winter period. This in turn may reduce or eliminate late winter or early spring flowering of these crops. Lychee, longan, and mango producers are advised not to apply any nitrogen containing fertilizers from late summer onward and to also stop irrigating. This will decrease the potential for unwanted vegetative growth during the fall and winter months and increase the chances for flowering in the late winter or early spring for these crops. The potential for continued warm temperatures may enhance fruit production of sapodilla and loquat. Drier conditions should reduce disease pressure but may increase the incidence of some insects such as mites and scales. For more information about subtropical fruits: http://fruitscapes.ifas.ufl.edu/</p>
<p>Fruits – tropical (mamey sapote, carambola, papaya, guava, banana)</p>	<p>Warm temperatures during the fall and winter may allow continued growth and increased production of carambola, guava, banana, mamey sapote, and papaya. Drier than normal conditions should decrease disease pressure but may increase insect pressure, i.e., mites on guava and papaya. Growers should be alert to the continued warm and dry conditions and irrigate during dry periods to facilitate fruit growth and development. Plant nutrients levels should be monitored closely because more nutrients may be required to maintain more vigorous fruit and vegetative growth during this time than normal. For more information about tropical fruits: http://fruitscapes.ifas.ufl.edu/</p>

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Row Crops	La Niña impacts are less evident on annual summer crops since its strongest effect occurs during fall, winter and spring. Warm conditions may help certain pests and diseases. Warm, dry winter may increase flower thrips abundance. Yellow mustard and wild pansy are ideal hosts for thrips, and a warm winter may provide ideal growing conditions for these and many other host plants. Similarly, warm conditions (similar to winter of 2006) may help soybean rust over-winter on kudzu in south Georgia and throughout the Panhandle of Florida.

International Outlook

La Niña events causes wetter than normal conditions to develop over northern Australia, Indonesia, Malaysia, southeastern Africa and northern Brazil during the northern winter. Drier than normal conditions are observed along the west coast of tropical South America, southern Brazil, Paraguay, Uruguay, and central Argentina. v, La Niña events have been associated with below average corn and soybean yields in those regions.

Global precipitation and temperature forecast:

http://iri.columbia.edu/climate/forecast/net_asmt/index.html