Calcium Is King

Timely application of calcium is critical for large-seeded peanuts.

or as long as Clarkton, N.C., peanut grower Dan Ward can remember, timely application of land plaster has been a family tradition that is key to profitability.

"We apply a ton to the acre before the plants get too big, which could damage them," says Ward, who grows large-seeded Virginia peanuts and also serves on the National Peanut Board. "You don't want to apply land plaster too early, because it could move out of the pegging zone in the

sandy soil.

"If there's a lack of calcium, it results in pops. For best results, we spread the land plaster in late June or early July."

Calcium Is Critical

Having enough calcium present in the pegging zone is essential for large-seeded runners, says University of Georgia Extension specialist Glenn Harris, who specializes in soil fertility.

"In Georgia, we have shifted from

small-seeded runner cultivars to largeseeded runners, where calcium nutrition is even more critical," Harris says.

The university currently suggests two options for supplying calcium. If soil pH is low, liming is an option provided that at least half is applied at planting time and on the surface without turning. The other, more common method to provide calcium is to apply 1,000 pounds per acre of gypsum at bloomtime if pegging zone soil samples taken soon after emergence are 500 pounds per acre calcium or less, or if the calcium-to-potassium ratio is less than three-to-one.

"Calcium is critical for proper seed development and to avoid pops, pod rot, black heart and, if peanuts are produced for seed, poor germination. A good supply of soluble calcium needs to be present in the top three to four inches of soil so it can be absorbed directly through the hull and into the developing seed," Harris explains.

Better Early Than Late

Timely application is precisely the recommendation of Jay Chapin, Clemson University Extension peanut specialist. Timely management is one of Chapin's five keys to successfully growing peanuts, and using land plaster is one of his top ten production principles.

"Ideally, you want to apply the calcium at first bloom, which is typically about 30 to 35 days after planting," Chapin says. "For growers who have a spread of planting dates and need to manage their work to get all the calcium applied, it is okay to be two weeks early, but they don't want to be two weeks late, which can be 50 days after planting.

'The consequence of being late is the



Dan Ward, of Clarkton, N.C., knows that calcium is a critical input for peanuts,

33 DAP

Check

	cium Application Timing On Peanut Yield, Grade lackville, S.C., 2008.					
Timing	Yield	TSMK	ELK	Value		
	(lb/a)	(%)	(%)	(\$/A)		
At-Plant	4538	70.9	54.7	1168		
13 DAP	4576	70.7	54.7	1175		

66.1 TSMK= Total Sound Mature Kernels; ELK = Extra Large Kernels; At-Plant (gyp sum applied at planting); DAP = Days After Planting; Check = No gypsum.

71.9

57.1

46.7

1190

969

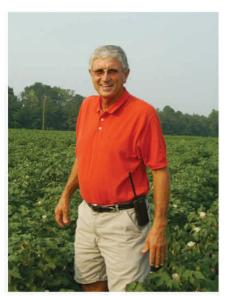
4574

3947

Timing	Yield (lb/a)	TSMK (%)	ELK (%)	Value (\$/A)
35 DAP	5543	71.6	57.0	1610
50 DAP	5069	68.5	50.0	1462
Check	4712	67.2	47.0	1303

applied at planting); DAP = Days After Planting; Check = No gypsum.

Trials conducted in 2008 and 2009 at Clemson University (CU) reveal that peanut growers can apply land plaster a bit early (13 DAP) to manage their work load but will lose money from declines in yield and grade when calcium is applied late (50 DAP), says Jay Chapin, Extension peanut specialist.



Enfield, N.C., producer Jerry Hamill says he likes to be finished spreading land plaster by mid-July.

risk of reduced grade and yield, especially with the large-seeded Virginia peanuts, which make up 80 percent of production in South Carolina," he says.

Jerry Hamill, of Enfield, N.C., grows Virginia peanuts, many of which are sold in the shell at ballparks.

"We apply our land plaster starting in the middle of June over several weeks,' Hamill says. "I like to be finished spreading it by July 14, before the peanuts close the middles (of the rows). But I don't want to put it on too early. We put on 1,400 to 1,500 pounds per acre."

Calcium Builds Better Peanuts

"Calcium is very important for the runner seed peanuts that we grow," says Donald Chase, Oglethorpe, Ga. "Our seed contract stipulates that you must use calcium. But benefits to using calcium go beyond yield. I think you have better, stronger pods and get better germinating seed with calcium.

"If you expect high yields, you use calcium," Chase says. "You need calcium in that pegging zone when the peg goes down into the soil. We put down about 1,000 pounds per acre."

Ward relies on land plaster from Archer Daniels Midland's (ADM) Southport, N.C., citric acid plant. "I've been using it for six or seven years, and it's worked," he says. "We spread a ton of it per acre. The large-seeded, Virginia peanuts have a higher calcium requirement than the runners, so it's especially important that we apply enough land plaster."

Better Grades And Profits

David Jordan, North Carolina State University Extension peanut specialist, says using calcium helps growers manage risk and increase profitability.

"Having elevated levels of supplemen-

tal calcium present in the top one to two inches of the soil helps out when the pods and the kernels are developing," Jordan says. "The calcium moves directly from the soil into the developing kernels and pods.

"While it's hard to consistently document a yield response from supplemental calcium in research plots, a very high percentage of the time market grades, both percentages of extra large kernels and total sound mature kernels of peanuts, increase," Jordan says.

The increase in these market grade factors can increase economic value significantly and, ultimately, bring in more revenue for the farmer, he says. PG

This article was written by Dan Zinkand and submitted by Karen Bernick Marketing Communications on behalf of GYP-SOIL/Beneficial Reuse Management. For more information on Gysoil brand gypsum, go to their Web site at www.gypsoil.com.

Gysoil Brand Gypsum

ADM recently entered into an agreement with the Gypsoil Division of Beneficial Reuse Management to distribute gypsum produced at the Southport, N.C., plant. The product is marketed as Gypsoil brand gypsum.

"Gypsoil land plaster is a very pure, natural form of calcium that is a by-product from making food-grade citric acid," says Ron Chamberlain, Gypsoll's Director of Gypsum Pro-

grams, Chicago, III. "It provides a very available form of calcium sulfate to the soil. If there's adequate rainfall - as little as eight inches in a region that averages 35 to 45 inches of rainfall - Gypsoil will be readily available to the pegs so that they can take up the calcium.

"Growers who use calcium can, over time, help the soll develop better soil structure, which improves water infiltration and increases the presence of oxygen," Chamberlain says. "With more oxygen in the soil, residue breaks down better, which builds better soil. There is less stress to the plants, for example during drought, because there is a better soil environment." PG

