



Water Infiltration: Do Your Landlords Understand?

Dear Exapta customers & contacts,

Whether you've seen this article previously or not, it is worth reviewing—whether you farm in wet conditions or dry. It explains the single most important factor in getting water (rainfall or irrigation or snow melt) to move into the soil:

[Understanding the Process of Water Infiltration*](#) by Rolf Derpsch.

Rolf is perhaps the world's foremost expert on no-tillage: He certainly has consulted and researched no-till in the most diverse settings. Born in Chile, multilingual, and educated partly in the UK, much of Rolf's career was spent working in Paraguay with farmers using everything from single draft animals to multiple large tractors and implements. Rolf has done much work in Brazil, as well as the USA, Australia, Africa, Europe, and, well, practically everywhere. Deeply embued with a scientific mindset, he is careful about the 'answers' to a problem, and always grounded in what the experiments are saying. A keen observer, Rolf is also very mindful of practical aspects and limitations his clients have in terms of access to technologies and materials.

As for the role of mulch cover on water infiltration, there are many studies that have been done, and essentially none have ever contradicted what is presented in Rolf's article. Other factors play a role in percolation of water deep into the profile, but mulch cover dominates the infiltration aspect.

So, as you go about making decisions this fall (Northern Hemisphere), keep in mind that you need to keep your no-till covered with mulch. For many of you needing to keep more residue cover (especially the southern 3/4ths of USA), that means carrying the corn head as high as is feasible, with as little stalk breakage as possible—i.e., drive faster, and use the less-aggressive fluted snap rolls. This will also facilitate planting the next crop, since the upright stalks aren't in the way at seeding, whereas any stalks or chopped residue lying on the soil surface must either be moved (i.e, with row cleaners), or cut (with the disc opener). Standing stalks simply get rolled down in the direction of travel by the planter, although some extra shielding or knock-down bars are often needed to keep chains and hoses and sensor wires intact. On the plus side, tall stalks don't damage tractor tires as much as short ones.



Rolf Derpsch,
No-till Expert



Avoid haying, silage, or grazing of dead/dying stalks (corn or milo), unless you're actually in the unique situation of having too much residue (Ontario, perhaps under irrigation elsewhere, especially corn-on-corn). During a severe, prolonged drought, such as what Texas, Oklahoma, and parts of KS are facing (as well as the deep South) in late 2011, it is crucial that the sparse vegetation *not* be removed for livestock. Instead, the livestock need to be exported to where the feedstuffs are plentiful—this is simple economics. For those with cow herds of their favorite genetics, this will mean renting rangeland and/or hiring caretaking in distant areas with plentiful stockpiles of standing grass or other feed. To prevent the problem in the future, stockpile more standing grass and perennial forage in the paddocks. Exapta fully supports the livestock industry, but degradation of cropland is not the answer.

Seriously consider cover crops, but choose wisely: If you need more mulch, you will need a grass species as the primary component of a mix. For instance, rye (or triticale) seeded in the fall on fields going to soybeans (or cotton) is a wonderful thing, especially if it is allowed to go until it's beginning to head, when the stalks have gained some durability (lignified). Rye can often be broadcast on the surface to successfully establish a stand when rain or snow occurs. If you use a planter or drill to install a cover crop, take into account the amount of residue knocked down/trampled, or buried by the seeder—you want to end up with more residue by the end of the next season, not less. Again, grass species for cover crops will accomplish this. I.e., broadleaf species for covers should be only part of a mix, unless you are actually needing to diminish the amount of cover you have (e.g., Manitoba, Ontario).

If you're trading equipment this winter, or rebuilding current machines, think about fluted snap rolls on the corn head, narrow gauge tires on the JD & SDX air drills, and so forth. For spring crops seeded with drills, consider whether wider row spacings are appropriate, and—if so—lock up one rank of the openers on the drill. You'll save a lot more stubble.

In somewhat dry and warm climates, preserving residue is of utmost importance. Not just for water infiltration, but also for profitability. No-till with no mulch cover is distinctly unprofitable and unsustainable.

Does your landlord balk at no-till? Your tenant? Your dad, brother, or spouse? Be sure to give them a copy of Rolf's article as well. Seeing the rainfall simulator live is even more compelling—take them with you to wherever it's 'playing.'

*This article also appeared, in a slightly different format, in No-till on the Plains' magazine, *Leading Edge*. For more info, or to subscribe, visit www.notill.org, or 888-330-5142.



A handwritten signature in black ink, located at the bottom left of the page. The signature is stylized and appears to be 'Rolf'.