NATAL ROSE SOCIETY NEWSLETTER

SPECIAL EDITION JULY 2010

2010

FROM THE CHAIR

Hi, Everybody!

This is a one-off special edition which I thought should reach you before you pruned your roses, or if it's too late for that, before the new foliage starts growing, when you can still work between your bushes without damaging them. The reason for sending you this is that Alan sparked an interesting, rapid dialogue between **Ludwig Taschner** and **Gerrit van Tonder** on the subject of whether or not one should dig in the rose beds after pruning – and I thought you should see it.

The jury seems to be out on this one. You'll have to make up your own minds, I think.

Regards, Savi

ROSE NATTER

Hamlet in the garden:
To dig or not to dig, - that is the question:-
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous fortune,
Or to take a spade against a sea of troubles,
And by digging end them? – To dig, – with a spade, -
Not with a fork; and by digging to say we end
The heartache and the thousand natural shocks
That roses are heir to, 'tis a consummation
Devoutly to be wished. To dig, – too deep –
So tired! The muscles scream! Ah! there's the pub...

From TALKING ROSES (Ludwig), JULY 2010:

Once the pruning is done and the cut-off stems and leaves removed (shredded they do make an excellent mulch or compost) it is a good idea to check the all-important aeration at root level. This is best carried out by making a sample hole between two plants. If the fork penetrates easily and brings up crumbly soil all is well and nothing further needs to be done. By all means spread the 30 g Vigorosa around each bush and dig this, as well as old mulch, leaves etc., in lightly to give the bed a neat look. After this, water well. If it is hard to get the prongs of a fork or blade of a spade deep down and if hard lumps come up when turning over the soil the aeration is most certainly not good. To fix it requires spreading out a 10 cm thick layer of a soil conditioner and to dig it in making sure that all lumps are broken up and soil and soil conditioner is well mixed. The same applies to very sandy soil.

What are soil conditioners? Our most preferable material is peanut shells. They are organic, of a tough nut fibre which absorbs moisture but does not easily decompose, assuring good aeration for years. Since it has no nutritious value it will not burn the roots. Other soil conditioners are pine bark compost, especially if mixed with bark chips. [Too acidic for KZN – Alan.] This will decompose, but provides nutrition in the process. Coir bricks (cocos fibre) are good for water absorption and do not easily decompose – excellent for sandy soil. Inorganic material such as clinker ash, coarse sand or gravel will also do the job. Horse manure, shredded maize stalks, etc. are all materials to

use. Local availability is often the answer. Roots that have been loosened in the process are no cause for concern. They will very quickly make new fibrous roots in this improved, aerated soil and function so much better. Once this process is completed, spread Vigorosa over the rooting zone and water well. Watch the roses virtually jump out of the soil; that is how well they will perform.

From my reply (Alan), 4 July:

Hi, Ludwig...

Gerrit van Tonder [Professor at the Institute of Groundwater Studies at the University of the Free State in Bloemfontein] was so very kind as to contact me after having read what I said about "organic" this and that, to say that he agreed with what I said, and to say that Gerhard Verdoorn has changed his tune about "chemicals." He suggested that I Google for "Verdoorn organic" and see for myself. And he's right! Amazing! You should read what Gerhard Verdoorn has to say!

Your latest Talking Roses is good, especially the photo of you. (I don't know how you manage to look so good in photos. In real life, of course, it's a different story.) The only thing I don't agree with is your encouragement of people to dig around their roses. You know the story. Symbiosis around the hair roots, etc. Of course you're right when you say that the roses will recover, but why would you want them to have to recover from damage you didn't have to do in the first place?

From Ludwig's reply, 7 July:

Had a super weekend with excellent attendance for the tree pruning demos I gave. ... And we sold lots and lots of peanut shells for the people to dig around their roses. I do not easily write about something I have not done and was satisfied with the results. Last year this time we FIXED some established rose plantings in private gardens and bigger corporate plantings simply by digging in lots of peanut shells and a bit of compost. The performance of the roses after that simply is not comparable. An important aspect is that in such *lekker* loose soil the water penetrates and gets to the roots. It is only if water flows easily to the roots that air can follow and it is then that microbes are getting busy and that one can re-establish a meaningful symbiosis around the roots. Already last month we set out trials at SOLEIL treating a portion of poor performing roses with Mycoroot [A commercial preparation of mycorrhyza - Alan] and dug up the other part, re-prepared the soil with peanut shells and replanted the same plants, and of course left a part untreated. Right, one hears and reads about the advantage of Mycoroot treatment from soccer greens to commercial cut rose plantings in Kenya and Colombia and Germany. However, it is always done when the plants are under stress because of the poorly aerated soil and because the symbiosis is not functioning any more. It is like adding bacteria for quicker composting. It is not needed when it is done properly from the beginning.

From my reply, 7 July:

This is fascinating. Do you mind if I publish it in the next NRS Newsletter – if there is one? I would have thought that peanut shells would disintegrate almost immediately. What exactly happens to them under the ground, and why are they so beneficial?

From Ludwig's reply, 7 July:

Indeed I use every opportunity to write and talk on the importance of aeration at root level. This is more because of observation and common gardening sense than because of scientific-backed knowledge. So I was very pleased when I came across a piece in a recent Dutch publication on vegetable growing. It appears that researchers have

developed a measuring instrument for oxygen in the root environment. They think that all growers underestimate the consequences of oxygen-poor water and the scale of problems.

To quote:

> *"Roots need oxygen for the respiration that supplies energy for growth and maintenance, but also for absorbing and excluding ions. Reduced oxygen availability reduces the absorption, for instance, of nitrogen, potash and iron, but raises the absorption of sodium. A lack of oxygen also reduces the number of growth points and causes root death. Water absorption is then reduced too and causes water stress to the plant. Considerable root death is often followed by damage caused by diseases such as Phytium and Fusarium."*

Speaking to an expert on the commercial production of millions of mini pot-roses in high-tech greenhouses in Denmark I quickly picked up on the advice that the watering of these pots, which is carried out by flooding the aluminium table in which the mini pot-roses are standing, should never be more than 15 minutes in order to avoid root rot. In practical terms in means that the water flows into the table with raised edges until it stand about 5 cm high and after 15 minutes the plug is pulled for the water to flow in drains back to the reservoir or other crops. The growing mix in the pots has such excellent capillary action that it will have sucked up enough water to last for a day.

I have been writing and talking about the importance of well-aerated soil to grow super roses. What is good for the roses is obviously good for most plants. I was therefore not surprised to come across an article in the *Farmer's Weekly* of 1 May 2009 on Soilmix Africa. This is a huge 430 kW caterpillar machine weighing 25 tons that brakes up, rotates and mixes the soil to a depth of 1,2 m. Fertiliser, compost and manure is spread out over the surface and is properly mixed after this machine goes over it. Grapes, citrus, apples, etc. bear fruit earlier and of better quality. Maize cobs are four times the size when grown in deeply cultivated lands compared to those growing in 20 cm-deep ploughed fields. It is even recommended to let this machine run closely past trees and grape vines of established orchards. So, let's dig around our roses in winter and prepare new beds or trenches one metre deep. Many gardeners have adhered to this method with excellent results.

My reply, 7 July:

Truly fascinating. May I send this to Gerrit van Tonder and ask him for his reaction?

From Ludwig's reply, 7 July:

The beauty of the peanut shells is that they do not disintegrate or decompose. They are nut shells and have a tough fibre, but sufficiently broken up in the de-shelling process to allow water to get in between the fibres. It simply keeps the soil from compacting for years. It has no nutritional value ...

You are welcome to use any of it in the newsletter and forward that other article to Van Tonder.

From Gerrit van Tonder's reply, 7 July

Everyone knows the basic needs that make plants grow: water, air, light, suitable temperatures, and nutrients (which all are requirements for photosynthesis and we know that 95% of the biomass of a plant is due to photosynthesis). Clay and organic matter (humus) are the only two components in soil that can hold and release nutrients. Compaction changes the movement of air and water through soil and can cause a shift from aerobic to more anaerobic organisms, and may increase losses of nitrogen to the atmosphere... Rooting depth may be limited in highly compacted soils. This restricts the depth of the rhizosphere [the rooted area – Alan], the environment that supports microbes.

Thus, as all rose growers know, compaction is bad for roses and the cheapest option available for the gardener is to take a spade and do some digging around the bushes. I have no problem with it given some specific conditions which I will mention later.

Reasons for soil compaction: There may be a too high clay content of the soil. The soil may be deficient in organic matter including humus**.** There may be too much magnesium in the soil**.** The calcium:magnesium ratio may be too high or too low. (For soil to breathe air, the ratio must be in the order of 4:1 in terms of weight).

How to get rid of compaction: Till/turn/dig or loosen the soil**.** Add compost/soil organic material to the soil**.** Add gypsum. We know that gypsum loosens clayey soil and washes out salty nutrients in irrigated or alkaline soils. If the magnesium content is already low, Epsom salts must also be added, and when the pH is lower than 6, lime must be add. A sandy soil cannot hold nutrients as the permeability is too high and soil amendments like compost must be added; grow green manure like vetch or clover in the winter and dig it in the summer to improve the carbon content of the soil. It also supplies free nitrogen to the soil.

What happens if one tills the soil? Organic material in the soil is oxidised more and the soil loses soil carbon at a higher rate. The tilling of soil without the addition of soil organic matter like compost is bad for the soil and in the end it will be a dust bowl where no plants will grow. I think that the failure to add compost during the turning of the soil is one of the main reasons for the deterioration of roses over time. Another reason is for sure that too much Nitrate fertiliser is added to rose bushes on a regularly basis. The top fertile organic layer of a few centimeters of soil, where most earthworms and soil organisms are active, is buried to a depth of, say 180 mm, which is bad for the biological life of the soil. Tilling destroy the hyphas [the thread-like filaments – Alan] of mycorrhizal fungi. This is important only in poor soils which are low in phosphorus. It is mainly humus and the hyphas that loosen the bonded iron and alphosphate in the soil. Phosphorus moves very slowly in soil and for this reason it is good to add it in the winter just before turning the soil.

What is good about tilling? Soil is aerated and the porosity increases. An aerated soil is important for soil to be healthy and free of anaerobic microbes like eelworm and scale on roses**.** The soil permeability will increase, which is good for drainage if the soil has high clay content (30% or more).

Tilling thus has pros and cons! A dry land crop farmer MUST till his land but must try to minimise it. For an irrigation farmer, minimum tillage is the answer for sure. But it takes up to at least seven years to adapt to minimum tilling methods. And a clay soil of course needs more turning than a sandy soil.

To summarise: I am not against turning of the soil around rose bushes. [My emphasis – Alan] I think it is better to turn the soil after pruning and add amendments like compost + brown sugar + super phosphate before turning the soil. Mulch is absolutely necessary. During the rest of the season it is enough to use a garden fork to loosen the soil. If the gardener wants to turn the soil regularly it is fine, but then he must add compost to the soil before turning it.

I see myself as a biological/nature friendly gardener and am against 100% organic or 100% conventional gardening. My motto is: use the best from both conventional and organic gardening methods. And with best I mean methods that are the least harmful to plants and the environment in the end …

From Ludwig's reply, 9 July:

[After some lurid comments on the World Cup semi-final between Germany and Spain:] The German fish shops are getting premium prices for the octopus right now. Revenge is *lekker*, I suppose. Paul apparently predicted the Germans will win against Uruguay and Spain will make it.

I had, of course, lots of correspondence with Gerrit van Tonder on soil, etc. Obviously the scientific reasoning is correct. I learned very early on when I started to write and publicly talk about rose growing that there simply cannot be a MUST do this and a MUST do that. Every garden is different with soil and climate, etc.

I can see that professors can't help themselves but try and educate everyone in detail. The problem with that is that I will sell fewer roses and membership in rose societies will deteriorate even more. What is needed are the Piet and Boeta stories coupled to the beer drinking. No, even that is wrong. Just get the men out of the societies and gardening. They cannot help making things intricate ...

Sand is not just sand. I advised a vegetable farmer in Brandfort in the Free State on planting roses commercially. He grew super carrots and potatoes and what have you. The soil was deeply ploughed and organics were ploughed in. The roses grew incredibly well in the first year. In the third year it did not look so good, even though the roses received water, fertiliser, everything. The roses planted in subsequent years also grew well in the first year only. So we dug up some plants. The roots, which were about 20 cm deep, had turned around and had grown upwards to just under the surface. This incredibly fine sand that turns the Free State into a dust bowl in August compacts to such an extent that the roots just would not perform at a lower level. Ploughing in lots of peanut shells solved the problem. With veggie crops the soil is ploughed up twice a year and in such way aerated.

The no-tilling or no-ploughing of maize lands works well because the roots and part of the trunks in the ground have died and dried out, creating air pockets, and as they eventually decompose, once the rain or irrigation starts, microbe activity is increased and in that way nutrients made available.

The problem we have with bush roses in our gardens is the pruning, cutting of blooms and worse of all, defoliation by black spot. Leaves are necessary to encourage root development. Rose roots need to have the best environment. This will change. I have in my own garden a *Mondiale* growing 1 m away from a big privet (*Ligustrum lucidum*) tree standing 3 m high, slightly in the shade on the east of the house, flowering on and on with no setback, and that in a total soil compaction, not to talk of root competition. More and more of such eco-chic varieties will appear in the next ten years, and then rose growing will really be easy. By the way, the roots of the largest rose of the world (in Nevada) and the thousand-year-old rose in Hildesheim found their way towards meters-deep underground fountains, and obviously with a never-ending supply of aerated water they just seem to carry on forever.

When asked to plant roses into beds prepared by the landscapers at VodaWorld I dug out one spade full of white yellow muck and said "no ways". They said it has to be, and they agreed to pay. For the first 4 000 rose plants we used 400 cubic metres – half peanut shells, half milled pine bark. That translated to 100 dm^3 or 2,5 bags as sold in nurseries per plant. That was 5 years ago. All we have been doing since is fertilising and watering, but we will probably mulch with peanut shells this winter.

I certainly do not recommend digging monthly or even annually around the roses. Do it once properly every two three years, if that often. [My emphasis – Alan.] I found that in stony soil or with lots of broken up shell rock the roots seem to grow around the stones and there always seems to be sufficient aeration ...

[After a bit more about the football...] Our truck will go to Natal next week (with peanut shells on it).

END OF DEBATE

JUST A BIT MORE ABOUT ORGANICS:

Gerrit was so kind as to send me the following, from the *Times* newsletter:

The town Apac, just north from Kampala in Uganda, is the "The Most Malarial Town on Earth." Signboards erected by the side of the road before entering the town announced the presence of two foreign-assistance programmes. One is a European-funded child-protection group, which had no malaria component to its programme. The other is

the National Wetlands Programme (NWP), funded by Belgium. Partly because of NWP's influence, the draining of malarial swamps is banned — which amounts to preserving wetlands at the price of human life.

Spraying houses with insecticide — which in 2008 cut malaria infections in half — is forbidden. Why? Because of objections from Uganda's organic-cotton farmers, who supply Nike, H&M and Walmart's Baby George line. Chemical-free farming sounds like a great idea in the West, but the reality is that Baby Omara is dying so Baby George can wear organic.

The picture below is meant to soothe your savage breast. Winter roses are the best, right? This is Rainbow Nation.

Alan