Manganese Toxicity

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Forgive me if this topic has already been aired but having put up with grevilleas, grafted and cutting grown, for the past 15 years **(This article was published in March 2002)** that have ALL suffered from dead or dying old leaves, what LOOKS like iron deficiency, branches just dropping dead, distorted new leaves (if any) and VERY poor flowering, I thought that maybe some of you may also have similar problems and would like a probable fix.

We have all been told to mulch, avoid phosphorous, and to feed a little at a time-yes?
But nobody explained exactly what ACID soil is. To most people it implies that as 'natives love acid soils' surely the more acid the soil is the better! Our soil here is around 4.3 and all our grevilleas grew very well for a few years until we mulched again for the umpteenth time and slowly the whole garden containing 230 grevilleas) went "off".

All of the aforementioned symptoms developed over the next year or so with a number of slow deaths. After many attempts to FIX the problem (it looks like iron or magnesium deficiency) we took a huge bag of leaves for analysis to be told that Manganese was the culprit.

At a PH of 6 or less Manganese becomes more available, and even if you have not added any knowingly, it is quite possible that your MULCH has. Most (all?) wood-based mulch has a high manganese content and the worst, by far, is PINE BARK! Freshly mashed-up so-called Bush or Tree mulch is not much better either.
Compounding the problem is the tendency for all mulches to acidify the soil as they break down which, in turn, makes the manganese more available. So what we thought was good garden practice was killing our plants.

THE CURE. **Shift your pH up to 6 or 6.5.**
Use Dolomite not Lime. Add loads of GYPSUM. The calcium will help to suppress the manganese. Water it all in and wait for a few months. We do not advise using ANY N.P.K. fertilisers during this time; there is probably quite a bit still in the soil but is not available due to the low PH. You don't have to have a pH as low as ours either, 5.5, with a heavy wood mulch, is quite enough (to cause problems). After 2 years of Dolomite spreading I think we've got it beaten.

Have any members noticed a similar deterioration in the health of Grevilleas over time? It would help if you could let others know of your experiences through the newsletter.