We, at DeMorgenzon Estate in Stellenbosch, South Africa, believe that music can influence the growth of a vine and the fruit it bears. We have played Baroque, and early Classical, music to our growing vines in the vineyard, in the winery and in the cellar all day, and every day, for the past seven years.

Do the vines 'listen' to the music and does it 'influence' them? I'm not suggesting that one gnarled (and perhaps slightly grumpy) old Chenin Blanc vine leans across to its neighbor and hisses "Haven't we had enough of this Scarlatti already? Can't he give us more Albinoni? If Albinoni was good enough for The Doors why not for us?"

I love Baroque, Classical and Romantic music – and despite his bombast, am wild about Beethoven (it was 'A Clockwork Orange' that first ripped the scales from my ears). I also like Johnny Cash, the Stones and Neil Diamond (My wife loves Leonard Cohen but his music, I fear, would delay ripening until well into winter). However, we don't play their music in the vineyard. It's not what I enjoy that counts, but rather what I believe will be most beneficial to the vines.

Whilst I hadn't really given much thought to 'pairing' wine with music in a recital, I believe that music influences the way wine tastes and smells. My question is that while music can influence how people perceive a particular wine or type of wine, can music affect a growing plant?

In 1973, in "The Secret Life of Plants," Peter Tompkins and Christopher Bird claimed that plants were sentient beings that feel emotions, prefer classical music to rock and roll, and can respond to the unspoken thoughts of humans hundreds of miles away. The fact that much of "The Secret Life of Plants" was subsequently debunked sadly detracts from the fact that plants are much more intelligent and much more like us than most people think. Plants appear to be capable of cognition, communication, information processing, computation, learning, and memory.

Plants are able to sense, and optimally respond to, so many environmental variables - light, water, gravity, temperature, soil structure, nutrients, toxins, microbes, herbivores, chemical signals from other plants - that there may exist some 'brain-like' information-processing system to integrate the data and coordinate a plant's behavioral response.

Indeed, many of the most impressive capabilities of plants can be traced to their unique existential predicament as 'beings' rooted to the ground and therefore unable to pick up and move when they need something, or when conditions turn unfavorable. The "sessile life style," as plant biologists term it, calls for an extensive and nuanced understanding of one's immediate environment, since the plant has to find everything it needs, and has to defend itself, while remaining fixed in place. A highly developed sensory apparatus is required to locate food and identify threats. Plants have evolved between fifteen and twenty distinct senses, including equivalents to our five: smell and taste (they sense and respond to chemicals in the air or on their bodies); sight (they react differently to various wavelengths of light as well as to shadow); touch (a vine or a root "knows" when it encounters a solid object); and, it has been discovered, sound.

The sensory capabilities of plant roots fascinated Charles Darwin, who in his later years became increasingly passionate about plants; he and his son Francis performed scores of ingenious experiments on plants. Many involved the root, or radicle, of young plants, which the Darwins demonstrated could sense light, moisture, gravity, pressure, and several other environmental qualities, and then determine the optimal trajectory for the root's growth. The last sentence of Darwin's 1880 book, "The Power of Movement in Plants," has assumed scriptural authority for some plant neurobiologists: "It is hardly an exaggeration to say that the

tip of the radicle . . . having the power of directing the movements of the adjoining parts, acts like the brain of one of the lower animals; the brain being seated within the anterior end of the body, receiving impressions from the sense organs and directing the several movements."

Scientists have since found that the tips of plant roots, in addition to sensing gravity, moisture, light, pressure, and hardness, can also sense volume, nitrogen, phosphorus, salt, various toxins, microbes, and chemical signals from neighboring plants. Roots about to encounter an impenetrable obstacle or a toxic substance change course before they make contact with it. Roots can tell whether nearby roots are self or other and, if other, kin or stranger. Normally, plants compete for root space with strangers, but, when researchers put four closely related Great Lakes sea-rocket plants in the same pot, the plants restrained their usual competitive behaviors and shared resources.

One of the most productive areas of plant research in recent years has been plant signalling. Since the early nineteen-eighties, it has been known that when a plant's leaves are infected or chewed by insects they emit volatile chemicals that signal other leaves to mount a defense. Sometimes this warning signal contains information about the identity of the insect, gleaned from the taste of its saliva. Depending on the plant and the attacker, the defense might involve altering the leaf's flavor or texture, or producing toxins or other compounds that render the plant's flesh less digestible to herbivores. When antelopes browse acacia trees, the leaves produce tannins that make them unappetizing and difficult to digest. When food is scarce and acacias are overbrowsed, it has been reported, the trees produce sufficient amounts of toxin to kill the animals.

Okay, if we accept that plants may have some sort of 'intelligence,' why do we play Baroque music to them? Well, it's the wave that counts. The vibration made, rather than the beautiful music heard.

Ernst Chladni, the jurist, musician and physicist, was born in 1756 (the same year as Mozart, and died in 1829 - the same year as Beethoven). In 1787 he published Entdeckungen über die Theorie des Klangesor (Discoveries Concerning the Theory of Music). Chladni laid the foundations for the discipline within physics that came to be called acoustics - the science of sound. He made visible what sound waves generate. With the help of a violin bow which he drew perpendicularly across the edge of flat plates covered with sand, he produced those patterns and shapes which today go by the term Chladni figures. Thus he demonstrated that sound actually does affect physical matter and that it has the quality of creating geometric patterns.
Why, then, Baroque Music? The Age of Enlightenment (or Age of Reason) was the era from the 1650s to the 1780s in which cultural and intellectual forces in Western Europe emphasized reason, analysis, and individualism rather than traditional lines of authority. The authority of institutions that were deeply rooted in society, such as the Catholic Church, were challenged. There was much talk of ways to reform society with toleration, science and skepticism.

Clearly there is a lot of scientific basis to the practice of music. Though what sounds melodious, or harmonious, or tuneful, must ultimately be regarded as a subjective matter, there seem to be physical justifications for the things in music which appeal aesthetically to most people. Much of music consists of melodic and rhythmic patterns put together in an orderly, but creative manner. The 'scientific' approach to music reached its height in the Baroque, and it's greatest proponent was Johann Sebastian Bach (1685 – 1750). Bach was the greatest of the Baroque (if not of all) composers. He made use of a number of formal mathematical patterns when he composed his majestic organ fugues. He used, for example, the "golden section" as well as the Fibonacci succession (1, 1, 2, 3, 5, 8, 13 etc., in which each number in the succession is the sum of the two previous ones). In many ways he worked like an architect, joining the two different parts of a musical piece into one harmonious whole before the actual process of composition started.

What have we seen over the past seven years? Whilst the objective of my wring to you is not to extol the (many) virtues of our wines, we experience phenolic ripeness with lower sugar levels which results in wines with all the ripeness, fruit, and acidity one would want, but with slightly lower alcohol levels.

We were approached by the University of Pretoria who have money earmarked for research into the use of vibrations to deter insects. Naturally we were interested, but my conscience was pricked by the $ 12 device I have plugged into the wall socket in my bedroom which not only keeps puckish mosquitos at bay, but – to some extent – discourages my wife's cats from sleeping on my feet. Yes, sound waves – even those at frequencies inaudible to us – have unexpected consequences.

In conclusion, Shakespeare sums it all up perfectly: "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."