

Coming Full Circle

The UAE's ubiquitous date palm has become a symbol of the country. But the last few decades have seen it suffering horribly from a plague of pests. One entrepreneur, however, has come up with an ingenious and fascinating organic win-win solution.

Text: Wayne Page, D.Hort (KEW), Landscape Designer, Rootz N Shootz; Photos: Silvia Baron, Senior Photographer; Grace Paras, Staff Photographer; Shutterstock

An old Arab proverb says of the date palm, "Its feet shall be in a stream of water, and its head in the furnace of Heaven". The ability of this remarkable palm to thrive in extremely hot and dry conditions with little or no rain has made it the classic symbol of the oasis and a reliable indicator of the presence of ground water in rocky ravines, crevices and wadis. No wonder then that it is one of the most commonly used trees in landscaping and gardening in the UAE.

And not only does this tree tolerate the extremes of the UAE's climate, but it also represents a cultural association with mankind that can be traced as far back as 4000 BC. Dates were among the first fruit crops to be domesticated in ancient times and had a cultural and religious significance. Their history, recorded over 5,000 years reflects their economic and social importance. In Muslim tradition, God created the date palm from dust left over after Adam was created and Arabs consequently know it as the 'Tree of Life', an appropriate name given its multiplicity of uses.

As a landscape designer and botanist, I've been truly amazed how this tree has not only shaped

human landscapes in the past, but continues to have a significant role in the landscapes of the future. Almost everywhere you look in Dubai, you will spot a date palm. Perhaps giving shade to your car, or elegantly lining a long driveway in front of a villa or shopping mall, or even on the side of the road all wrapped up, with barely any roots, and awaiting planting. Recently, I asked one of my clients what sort of palm tree they wanted at their villa on the Palm Jumeirah and I was astounded when he replied, "There is more than one sort of Palm?" In fact there are about 2,500 palm species represented across the globe.

Given the large numbers of cultivated dates in our region, it is no wonder that the arrival of exotic palm pests is having such a detrimental effect on our beloved trees. Although some of these pests like the red palm weevil and rhinoceros beetle have been reported in the UAE for many years, the true effects of their untamed masses is just beginning to be apparent. Such is the extent of this pest that authorities recently put a temporary ban on planting this tree on the Palm Jumeirah and introduced strict rules on all palm imports and replantation. With no known weapon against these pests, trees can quickly become infected

Right: The date palm, a symbol of this part of the world, was one of the first trees to be cultivated by mankind





Left: Michael's unique shredding machine transforms pest-infested palm trunks into the only locally-produced 100 per cent organic compost (above) available here today



and eventually die. For many commercial growers the damage of these pests has therefore been disastrous.

But as the battle continues to find an effective control of these tenacious pests and trees continue to die and be carted off to bonfires, an exciting new use for our Phoenix palms is rising from the ashes. "Compost!" Michael Geraghty, co-founder of Environmental Resources LLC, told me on the telephone. "It will be the date palm's reincarnation." I considered his remark and thought about how so little recycling is done here in Dubai and how the composts I use in my garden designs are imported. What a great idea to recycle a local product that seems to be in plentiful supply. I needed to find out more.

Michael is an Australian entrepreneur who has over the years instigated an amazing research and development programme to produce an

organic substrate from discarded date palms. In short, he has created a giant shredding machine, which can shred a complete palm trunk. It was in 2002 that a delegation from the Saudi Arabian Ministry of Agriculture headed by Dr Abdul Karim, visited Michael in Malaysia and had the opportunity to view the technology first hand. At this point in time the red palm weevil was a major pest in the Kingdom, and the debilitating effects of this insect were an equally major concern.

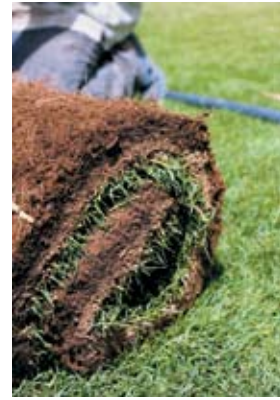
Upon seeing the concept and the process, Abdul Karim developed a unique strategy in his campaign to mitigate the debilitating effects of the weevil. He and his team had already ascertained that the weevil population was increasing dramatically. This, they acknowledged, was probably attributable to the large numbers of date palms that were being discarded. More and more farms were suffering from lack of water and the aquifers that once fed shallow water tables were diminishing. Farm management was deteriorating, and the environment was ripe for the weevil to attack host palms, and proliferate. A programme was then drawn up whereby badly infested palms would be collected and shredded using

Michael's machine. The shredding process, unlike any other system available, completely decimated any adult pests or larvae contained in the trunk. Furthermore, the end product was rendered into a form that made it difficult for any surviving eggs to incubate and hatch. This approach, although not an answer to the eradication of the red palm weevil, played a significant role in removing any hosts for their further proliferation.

Just as importantly, it yielded a major benefit in the form of the organic compost that was produced. It was the compost and its commercial applications that initially stimulated Haroon Al Ulama's vision. Haroon has been working with Michael developing compost from the outset, and they spent several years undertaking trials and product development. Now, alongside other partners, they've established Environmental Resources LLC in the UAE as the vehicle for commercialising the date palm compost and its associated applications. The compost is known as 'nurturEarth', and it has already instigated a major re-think of the way organic materials can be used in a desert and landscape environment. Like Michael, I've always been a believer



Above: Michael Geraghty in his AI Madam nursery, examining healthy plants grown in nurturEarth;
Right: Landscaping is made easy with the use of healthily-reared plants



that organic material should be the primary ingredient of any blended soil. This becomes even more crucial with sand. My advice to clients is only select a natural and unadulterated organic material. This represents a dramatic shift to some in the industry, as chemicals like polymers and other additives have been readily accepted and wantonly dumped into the growing medium for years. I was delighted to hear from Michael that this 100 per cent organic product is solely produced from date palms and that the product is grown, nurtured and produced in the UAE. It is the same material that produces the delicious dates we eat.

Inspired by Michael, I thought about how our landscape business, Rootz N Shootz, could become more involved and be the first to fully use the end product in our garden landscapes throughout Dubai. This will be particularly important for gardens on Palm Jumeirah where the existing soil profile is very shallow and

any nutrients and fertilisers added are quickly leached out of the sand. Initially we decided to trial some of the compost around the plants at our warehouse in the somewhat barren wastelands of Al Quoz. Due to its structure and surface area, the addition of this product to the soil mix has greatly reduced water consumption. As the material is fibrous in nature it locks the sand particles together, forming a stable soil profile. Even when placed as a mulch layer it binds itself together, doesn't wash away or gets blown by strong winds. Remarkably this product is also high in free sugars. This attribute allows the promotion and development of a strong micro-organism community within the root zone. Inert, lifeless sand is radically transformed into a thriving world that nurtures healthy plants.

Encouraged by the positive results of this product, I decided to use the compost throughout our new gardens on the Palm Jumeirah. In addition, Michael had also been

experimenting with growing grass on this material with some stunning results. One day he arrived at my office with a rolled up green carpet of grass that was so thick and lush that I first thought it was artificial. He told me that it would require half the usual amount of water to keep it alive, and although it was not perfectly flat, it would be more durable than the grass available today.

Yet again inspired by the application of this unique compost, I decided to try the grass sod in a very shady garden in The Lakes that was trodden daily by an overweight Labrador and several large tortoises. This was five months ago and the grass is still thriving.

We also used the grass sod on a Palm Jumeirah villa which is in full sun for most of the day and is subject to salty winds and sandy feet. As an additional precaution, we mixed half sweet soil with half compost to ensure the grass would have a good chance of survival. Throughout the

rest of the garden we incorporated the compost with the sand and blended it with different mixtures of other organic materials like bark mulch and other mulching materials such as pebbles. Anything to retain moisture and create an environment where the soil can come to life, in addition to looking neat and tidy.

We can't control the climatic conditions that affect the plants here in Dubai, but we can control and condition the sub-surface and therefore the zone where the all-important roots are influenced.

There is so much more to this fascinating story as it has unfolded over 12 years. Now, every time I see a planted bed along the roadside with no mulch and visible irrigation lines. I just want to cover the soil with this compost. My next challenge is to implement a 'forest' I have designed for a villa on the Palm Jumeirah, and Michael's shredding machine is currently working at full capacity. ■

Above: The lush grass surrounding this windswept villa on The Palm, Jumeirah was grown in Michael's compost. It is tough, hardy and requires half the watering of normal turf