

*Hope, vision*  
• & •  
• A SALAD  
• A DAY:  
HOW TO  
“CHANGE YOUR ANGLE”  
*a Green Prison Series*  
PART 1  
BY SGT. MICHAEL MCLEON

*The following article was extracted from a longer TEDx Talk by Sgt. Michael (Mac) McLeon in Missouri in June 2019. This was the second of two TEDx Talks by McLeon in the spring of 2019, both were on how a salad can start a movement.*

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**I**want to tell you about my partner. We call him Bigum. He's 5 feet, 9 inches tall and weighs hundreds of pounds. He's fat, but he's as healthy as a horse. That's probably because he is one!

I ride around on him all day long. It's every Texas boy's dream. I get paid to ride a horse! Of course, I have to do a few other things as well, like supervise prisoners. Oh, and I am a correctional officer for the Texas Department of Criminal Justice (TDCJ) at the Michael Unit, just outside of Palestine, Texas.

When I am seated high in the saddle, I'm a good nine feet above the ground. It's not exactly a bird's eye view, but it allows me to appreciate the vastness of what I see before me. And it's not just men in white suits weeding and picking vegetables. It's not crops growing in neat rows. It's hope. It's progress.

I'm sure that when you think of prisons, you don't think of crops, ingenuity, progress and hope. You probably think of bars, prisoners and maybe that guy you saw on the news the other night, but when was the last time you noticed

what actually goes on in a prison? For that matter, when was the last time you even thought about it?

You see, prisons are places of confinement where we send law breakers and, for the most part, we never give them a second thought until, for all the wrong reasons, we hear about them on the news. Once an incarcerated individual has done their time, they go home, and if they haven't gotten a better education, learned a skill or otherwise addressed their addictions, they are more than likely headed back to prison.

This is a complex issue. As a correctional officer, part of my job is to reintegrate incarcerated adults back into society. That looks very different depending on the person. After all, prisoners are people and people have different interests and skills. The skill set we were trying to share with these incarcerated individuals was gardening. With this in mind, we started to look at gardening a bit differently, and because of that we have sparked change within the prison system. And it is all because of a simple thing that many of us take for granted — a salad. →



Sgt. Kelly Sandel surveys the Mark W. Michael Unit's ever-growing aquaponic system at the Texas Department of Criminal Justice (TDCJ).

Artwork opposite page adapted from istock/Electric\_Crayon

Photo courtesy Sgt. Michael McLean Sergeant of Corrections / Field Force of Texas Department of Criminal Justice, Mark W. Michael Unit

## A salad of possibilities

It started back in 2007, when a kitchen captain in the TDCJ's Dalhart Unit wanted to add some flavor to the meals he was preparing, so he decided to plant a small herb garden on prison property. The unit was being audited at the time and the auditor smelled something good in the prison kitchen. There are plenty of conversations in prison, but people do not normally talk about how tasty the food is or how good it smells.

As with any audit, there can be some anxiety. This is especially true when the auditor discovers something new, something he's never experienced before. Our beans smelled a heck of a lot better than anyone else's. It was explained to him that the smell was the result of the herb garden the kitchen captain had recently planted. As it turned out, there are no rules, regulations or policies about herb gardens in prisons. So, he left it alone and moved on. But there are no secrets in East Texas. Word got out. It was a no-brainer. Prisons across the state heard about the herb garden in the Dalhart Unit and all of a sudden, everyone wanted one.

The herb gardens were clearly a success. You see, a little savory in beans goes a long way. Food had gone from the bland, marginally seasoned fare typical of many large-scale food operations, to a tasty, well-received meal that both prisoners and staff could appreciate. Remember, whatever your view of corrections or criminals might be, it is our job to feed them. What's more, in Texas, the correctional staff eats the same food as the incarcerated population. If they are eating beans and cornbread, we're eating beans and cornbread. Correctional officers want the food to taste good just as much as they do.

We all like to brag, and several prisons were starting to brag that they had the best herbs. So, to see which prison had the best herbs, we had a friendly competition called "Herbs Behind Bars." The Michael Unit entered, and we entered to win.

In 2016, we made up our minds that we were going for the gold. We realized that we had to do something different. Lt. Eric White googled "extreme gardening." He came back to the unit with all these new ideas, talking about grow tubes, growing without soil and growing with science. He discovered a video about hydroponics, and it has changed the perception of what is possible. He was so excited about the possibilities, and we were on board with the idea instantly. We saw this as the next step in providing nutritious meals for both residents and staff. There was, however, one small problem. Well, two really. First, we had no money and second, we didn't have a clue how to get started.

So, we put all of our resources into a pile. We threw in some Texas grit and determination, and within two months, we built our first system using a bathtub as a water tank, some Solo cups we had left over from a party and a water pump from an above ground pool. It wasn't pretty, but it worked. You see, the principle of hydroponics is fairly simple, you pump a nutrient solution to the plants, the plants take in what they need and the rest returns to the water tank. Plants grow bigger and faster because they are not fighting for the nutrients they need, like they do in the soil. With scrap parts and a basic understanding of the science, we had built a functioning hydroponics garden.



*The TDCJ inmates admire their newly built hydroponics system — first used with a bathtub as a water tank.*

We started to learn more through trial and error. The first thing we learned was that a bathtub makes a horrible water tank. So, we took an intermediate bulk container tote (known as an IBC tote, which is used to ship bulk liquid items such as bleach or cooking oil), dug a hole and buried it in the ground. I would love to tell you we did this because of geothermal temperature regulation, but we learned about that after we did it. We sank it into the ground and capped it because of security reasons.

As we started to learn more about hydroponics, we realized that this system was way too dependent on the nutrient solution which can be fairly costly. As the hydroponic systems grew in size from adding more plants, the cost went up. Since we had no money, we started to look for ways to make the system sustainable and affordable. That brought us to aquaponics. Saving money is like making money. We had no budget and we felt like if we could show we were saving the few dollars we did have, it would become a program that the prison authorities could really get behind. →



*The TDCJ learn and grow their aquaponics system through trial and error to further hope, vision and purpose.*



Photos courtesy Sgt. Michael McLean Sergeant of Corrections/Field Force of Texas Department of Criminal Justice, Mark W. Michael Unit

## More than a kitchen garden

Aquaponics is a type of hydroponics. You just replace the nutrient solution with fish or actually, liquid fish waste. In a nutshell, to get aquaponics to work, we over feed the fish and they secrete ammonia in their liquid waste, two forms of bacteria take that ammonia and convert it to nitrite. That nitrate-rich water is then pumped to the plants and acts like a super fertilizer. The plants clean the water of the nitrates and fresh water is pumped back to the fish. Of course, as with everything else in life, when you find a solution to a problem, the solution

creates problems of its own. Our new problem was to figure out a way to keep the fish alive.

The biggest difference from hydroponics and aquaponics, other than fish, is the need for bacteria and filters. The bacteria need the liquid fish waste to make the nitrate-rich water the plants want, and you need to separate the solid waste from the liquid waste to get it to work right. Now, please keep in mind that most parts for our systems are built from things we find that are being thrown away. Since I could not go out and buy a fancy filter to get this started, we looked at other options. We started with a hair net from the kitchen. It worked for about 20 minutes until we realized when you turn up the water pressure, it rips open. While testing this theory out, one of the workers was changing his socks because they had gotten wet. There are a lot of socks in prison, and there is more than one way to get anything done.

So, we just put a sock on the end of the pipe, and instant filter, we just had to remind the workers to change the sock on the system when they changed their socks. Another problem solved and we moved on to the next one.

We did eventually build out a solid separator (to separate the solid waste from the liquid waste), using a 55-gallon plastic barrel as well as a biological filter to house the bacteria, which works much better than socks. When you have the determination to get something done, and little funding, you have to change your perception and look at things from a different angle. My department was in charge of the trash, and although this is normally a boring job, we viewed this as an opportunity to get resources for our little project. We quickly adopted the mantra, “reuse, recycle, repurpose” when looking at things that were being thrown away. Things

The opportunity to talk about his program has done so much to help spread a positive impression about what goes on in corrections. Frequently, we hear that the public doesn't appreciate what we do in corrections. In most instances, it's because we don't tell them. By doing two TEDx Talks, Sgt. McLeon has shared not only his accomplishments, but the TDCJ's as well with citizens in the region who would otherwise be unaware of these great programs. It is also worth mentioning that they won state grand champions in the 2017 Herbs Behind Bars competition.

— Tommy Norris,  
CEO of GreenPrisons.org



like water pumps can be rebuilt, barrels can be used for filters and grow beds, and once you understand the science and principles of how things work, you can start to build the parts you need, such as a sun-shade. As a dad, I have to move my kids' trampoline when I mow because the grass, in the summertime, is growing better under it than the rest of the yard. This is because it acts as a sunshade. The problem is, sunshades cost a good chunk of change which is something we could not afford. So, when someone threw away a trampoline, we salvaged it and took the parts and made a shade for our system.

As our systems grew, we realized we were growing too. Officers and incarcerated individuals have plenty of reasons not to trust each other, let alone work as a team. But thanks to the collections of pipes, water and seeds, we were not working against each other, but working together towards a common goal. After a couple hundred fish died in the effort, we thought we had it all down. We thought we had some skills and we grew a five-pound catfish! But then it died. I have had many fish die, but this one hurt. She was our proof of concept that we could make aquaponics work. We couldn't figure out what happened to our catfish because we thought we had done everything right. At this point, there was only one thing to do. I loaded it up in the car and drove it around to all the vets in the area. Each place I stopped, I laid it across the desk and simply asked, "What killed it?" A couple of them questioned, "Was the fish involved in a crime?" My answer was, "I don't know, that's why I need to find out if it was me or nature." A few hours later, I still did not have an answer, but I did get a call from a doctor at the University of Mississippi stating that he had heard I was driving around with a dead fish



*With the collections of pipes, water and seeds, the TDCJ work as a team towards a common goal.*

Photo courtesy Sgt. Michael McLean Sergeant of Corrections/Field Force of Texas Department of Criminal Justice, Mark W. Michael Unit

and had to know what was going on, and if I shipped him the fish, he would do a necropsy for free. FedEx here I come! It turned out that the fish died because of stress, because the rain had changed the PH of the water rapidly. My system is outside, and rain affects my system, go figure. Now we put up a tarp before it rains and that fixes the problem.

## Purposeful growth

From there, I realized that there were a lot of untapped resources that could help this little project out — people. I started to network with doctors from other universities, and with that success, we started to look at working with Texas A&M University, as well as the University of Mississippi. The more we networked, the more we learned, and with that knowledge, our little project started to look and operate more like a commercial aquaponics system. By May 2018, we seemed to have all the kinks worked out and we saw our first big harvest. This was huge! It's not just the amount of lettuce (15 different types),

or the celery, or the tomato, or the cucumber, we had ingredients! Not just for a meal, but for a life-changing experience of being able to feed our trusty camp a salad.

In getting to really know these individuals, I found many were incarcerated in their twenties and had only eaten fast food their whole lives, with some serving their sentence for 10, 20, or 30 years and they had not had a salad for the last 10-30 years. This is something that is just not on the menu. With no budget and from nothing more than an idea, we harvested 133 heads of lettuce, with an additional 260 heads of lettuce expected to be harvested within the following week. This meant that we had built a system that could produce 393 heads of lettuce a month, with the possibility of producing almost 4,700 heads of lettuce a year.

With that breakthrough, it is worth mentioning that we are not just talking about lettuce. We're also growing herbs. Since we're growing salad, it makes sense that we would need salad dressing. In all, we now grow 21 types of basil, 10 other herbs and vegetables, in addition to the 15 lettuce varieties, and we end up with a lot of them. With our growth from the hydroponics, aquaponic systems and from our little herb garden, we harvested out 14,000 pounds of herbs. Now, to put this in perspective, a small container of basil that you buy from the supermarket is about two ounces. Fourteen thousand pounds of herbs would be about 112,000 containers. We started by giving it to our kitchen department and completely overloaded their pantry to the point that they did not want

anymore. I was not about to compost it or throw it away because this stuff is just so hard to grow, so we started to make donations. We donated to homeless shelters, foster care systems and food banks. What do you do when you have your kids come up to you and say, "Hey, Daddy? Our class is having a food drive!" You probably do what I do and look in the pantry and grab a few cans of beans and that can of squash that has a few years of dust on it. The problem I have learned is that everyone donates cans, and these places rarely get anything to flavor the food.

We have the honor of giving the priceless gift of taste from the place where they least expect it. I remember that one of the workers at the homeless shelter started to tear up because it was the first time in years that she was able to flavor their food. One pillar of the mission statement of the TDCJ is to promote positive change in the incarcerated population's behavior. By helping other people, we help ourselves and show prisoners that their confinement does not prevent them from making a change in the world.

With that insight, we were now driven and determined to build a bigger and better system that had a purpose, but I kept hearing the words of a training captain in the back of my head. Throughout attending the training academy for supervisors, a training captain named McCreary, hammered into my head the statement: "Knowledge is power, only if used to empower others." Incarcerated adults helped expand the system out and began harvesting the fish and vegetables. It makes sense for them to know how it works.



Photo courtesy Sgt. Michael McLean Sergeant of Corrections/Field Force of Texas  
Department of Criminal Justice, Mark W. Michael Unit

## Growing a future

We needed to share what we were learning. Trial and error is great but slow, and if we wanted to expand this project, we needed to show incarcerated adults how to apply this practice not only in the prison, but how they can use this when they are released. With help from all the people I networked with, we came up with our own training workshops, exploring all the facets of aquaponics. Not only were the Michael Unit prisoners signing up to take the workshop, but individuals from other facilities asked to transfer to our prison just to learn this art of growing plants with fish.

The TDCJ then assigned my unit to teach SM4.01, which is Field Force Operations Training. These are the guys who wear the hats, ride the horses and work security in an agriculture setting. With all we were teaching the prisoners, we started to give a crash course on hydroponics and aquaponics to officers. We developed a course which we taught after hours, along with training materials including software, layouts and how-to videos. We explained it like this:

“The field is changing, and we need to learn these new technologies to keep up. These technologies produce more and are much more environmentally friendly than what we have been doing, and the impact we have seen in the people associated with the program has been amazing.”

As support for gardening programs grew within the TDCJ, thanks to the support the leadership of our agency provided, the officers we trained began to create micro-gardens all over Texas. We started to catch the eye of national agencies and organizations. Being transparent, we decided to share all our designs, software and layouts so that any prison could start their own program. One thing we noticed was that everyone was growing lettuce, and for this to continue, we had to set a goal that everyone could achieve. We challenged ourselves to grow enough produce to supply one salad a week for each resident and officer. We then started networking with the Sustainability in Prisons Project (SPP). We learned that they really liked what we were doing and promoted our program and educational curriculum to correctional agencies across the country, including Ohio, Oregon, Washington State and California.

Now that we were working with various organizations outside of our own state, the American Correctional

Association asked us to do a workshop (at the 149<sup>th</sup> Congress of Correction in Boston). Of course, we agreed. From there, we were able to connect with prisons across the country as well. By networking, we learned more, and by learning more, we could do more. By doing more, we could offer better services to our agency. The tangible results of the program save money from food costs, feed prisoners and staff healthy, fresh food, and change the perception of the people working on the project by using sustainable methods, which helps the community and the population at large.

When I sit down and eat my lunch, tasting that simple, yet awesome salad, I realize what is possible, what can be done and how something as small as a salad on my plate can be both the most challenging and the most rewarding experience of my life. The perspective from my seat at that table is even more meaningful than the perspective from my seat from the top of my horse.

So, the question I have for you is, “What does your perspective look like?” One of the biggest mistakes many people make is believing that their ability to impact the world is minimized by their circumstance. You don’t have to settle for simply being a field supervisor on a horse. Take that horse and ride over to another corner of the field. A corner that you don’t ever wander over because it seems like there isn’t anything worth looking at. Your circumstance is exactly what it needs to be for you to change the world. I simply challenge you to change your angle.

There are a number of lessons to be gleaned from the experiences of the Mark W. Michael Unit’s Field Force Department, not the least of which is that leadership doesn’t always come from the top. Their desire to make a difference in people’s lives is what drove them to create an entirely new program that benefited incarcerated individuals, staff and the system as a whole. As a result, they impacted their budget by providing fresh produce to supplement the meals of prisoners and provided job skills training for inmates to facilitate their return to the community.



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*Tommy Norris, CEO of GreenPrisons.org, contributed to this article.*