



## .....STRAIGHT FROM THE HORSES MOUTH

Duane A. Lienemann, UNL Extension Educator, Webster County

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It won't be long and we will be seeing equipment out in the field, perhaps putting on anhydrous or dealing with some of the residue that we just talked about. When I think of this time of year, my memories link back to when we used to plow. Even though I hated having to sit out on the tractor going around and around plowing up that straw stubble, one thing I did like was the aroma that came from that freshly turned soil. I remember my ag teacher at the time telling us that what we were smelling was the microbes that lived in the soil, many of which were anaerobic and perished when exposed to oxygen. I oftentimes thought it would be great if someone would bottle that smell and put it in a bottle for when you were feeling a little down. Gosh, if they made aftershave out of that I would buy a jug of it. It probably wouldn't smell quite the same, but I have always loved that aroma! I thought that smell was therapeutic and maybe it is, let's find out in the discussion below.

Did you know that there's a natural antidepressant in soil? It's true. *Mycobacterium vaccae* is a substance that is currently under study and has indeed been found to mirror the effect on neurons that drugs like Prozac provide. So the actual Prozac may not be the only way to get rid of your serious blues, maybe we should just go to our fields. Here is why.

It has now been found that soil microbes have been found to have similar effects on the brain and are without side effects and chemical dependency potential. The bacterium is found in soil and may stimulate serotonin production, which makes you relaxed and happier. What was of interest to me is that studies were conducted on cancer patients and they reported a better quality of life and less stress. Serotonin has been linked to depression, anxiety, obsessive compulsive disorder and bipolar problems. The bacterium appears to be a natural antidepressant in soil and has no adverse health effects. These antidepressant microbes in soil may be as easy to use as just playing in the dirt. There may be more to kids loving to play in the dirt than what we knew. Now I know why playing in the dirt makes a lot of farmers happy!

I, like many others like me who grew up on the farm, were used to getting dirt under our fingernails, between our toes and perhaps taking a bite out of some mud pie. We were surrounded by nature and I don't really remember many people suffering from the things we do today. I found it of high interest along that line that some researchers have proposed that the sharp rise in asthma and allergy cases over the past half century stems, unexpectedly, from, get this, living too clean!

The idea is that routine exposure to harmless microorganisms in the environment, soil bacteria for instance, trains our immune systems to ignore benign molecules like pollen or the dandruff on a neighbor's dog. Taking this "hygiene hypothesis" in an even more surprising direction, recent studies indicate that treatment with a specific soil bacterium may be able to alleviate depression. Studies have found that treatment with "*Mycobacterium vaccae*", the inoffensive soil bacterium, eases skin allergies, and other reports from cancer studies show that it can improve mood in cancer victims. Scientists think that the bacteria activate immune cells, which release chemicals called cytokines that then act on receptors on the sensory nerves to increase their activity.

We all know that natural remedies have been around for untold centuries. These natural remedies included cures for almost any physical ailment as well as mental and emotional afflictions. Ancient healers may not have known why something worked, but simply knew that it did. Modern scientists have unraveled the why of many medicinal plants and practices but only recently are they finding remedies that were previously unknown and yet, still a part of the natural life cycle. Soil microbes and human health now have a positive link which has been studied and found to be verifiable.

Most avid gardeners will tell you that their landscape is their "happy place" and the actual physical act of gardening is a stress reducer and mood lifter. The fact that there is some science behind it adds additional credibility to these garden addicts' claims. The presence of a soil bacteria antidepressant is not a surprise to many of us who have experienced the phenomenon ourselves. Backing it up with science is fascinating, but not shocking, to the happy gardener. *Mycobacterium vaccae* antidepressant microbes in soil are also being investigated for improving cognitive function, Crohn's disease and even rheumatoid arthritis. They can cause cytokine levels to rise, which results in the production of higher levels of serotonin. The bacterium was tested both by injection and ingestion on rats and the results were increased cognitive ability, lower stress and better concentration to tasks than a control group. I think perhaps a lot of us already knew the therapy of soil.

The results so far suggest that by just simply inhaling *Mycobacterium vaccae* you get a dose. It could, by just taking a walk in the wild or rooting around in the garden help elicit a jolly state of mind. Anyone who loves nature can see how that could be and probably have even experienced it unwittingly. You can also ingest mycobacteria either through water sources or through eating plants like lettuce or carrots that you pick from the garden. When you think of it, by stirring up that soil, digging, plowing and working the soil it is no surprise that farmers and gardeners would end up inhaling the bacteria, have topical contact with it and get it into their bloodstreams when there is a cut or other pathway for the bacterium to enter the body. Now that sounds kind of weird, but think about it. It does make sense. What is even better is that the natural effects of the soil bacteria antidepressant can be felt for up to 3 weeks if the experiments with rats are any indication. So get out and play in the dirt, or open the windows of the cab on your tractor and improve your mood and your life!!

The preceding information comes from the research and personal observations of the writer which may or may not reflect the views of UNL or UNL Extension. For more further information on these or other topics contact D. A. Lienemann, UNL Extension Educator for Webster County in Red Cloud, (402) 746-3417 or email to: [dlienemann2@unl.edu](mailto:dlienemann2@unl.edu) or go to the website at: <http://www.webster.unl.edu/home>