

Podcast Series: Holistic Nature of Us

Episode # 55 : Meet: Kim Kresevic #2

Hi I'm Judith Dreyer,

Thank you for joining me for this pod cast series "The Holistic Nature of Us".

My intent is to take us, you and I, into a better understanding of the concepts behind our holistic nature and how that ties directly to the holistic nature of the world around us. How can we connect the dots in practical ways that we are nature and nature is in us?

I feature a broad range of guests deeply concerned about the environmental issues of our time, and that includes us, authors and educators, practitioners and others whose passion for this earth helps us create bridges. These folks are innovators, action oriented, creating solutions in a variety of ways that honors ours and the planets holistic nature. I am honored to share their stories, their projects, their passion with all of you.

And today I'm delighted to introduce you to Kimberly Kresevic who is the President and Founder of InSoil Health, a data analytics and educational consultancy based out of Northeast Ohio. With diverse experience in both healthcare and biological cultivation Kim brings a unique system based approach to current food production challenges driven by the principle that nutrition is the foundation of human health and vitality. Kim works with growers in all walks of life and at all scales to improve food quality using natural biological techniques. By focusing on soil production data systems improvement and the human health value proposition Kim helps growers invigorate the soil food web, reduce input costs and eliminate the toxic environmental efforts that synthetic fertilizers, herbicides and pesticides.

Kim, welcome again to The Holistic Nature of Us.

KIM: Thank you, it's a pleasure to be here.

JUDITH: Well I've invited Kim back because she is working diligently to create bridges of understanding between our growers and our health care

system. And today we're going to talk more about that bridge that she's creating between soil health, gut health, between growing good quality food and how that relates to creating healthy species, namely the human being but if we're healthy, and the soil is healthy, then all of our species around us have a chance of being healthy as well.

Kim, how would you like to begin today with this very interesting discussion?

KIM: Well I think it's helpful to just start out by coming to this calm understanding that we as humans are dependent on our resident microbes and when these critical associations are broken, problems arise. We have problems with poor health, deficiencies, diseases, dysfunctional immune systems and so forth. So, when you think about the associations with our microbiome, I mean there are some things that we can impact and there are some things that we can not. For example, a lot of our microbiome I formed early in life at birth. We are colonized with a good number of microorganisms through the natural birth canal and through breastfeeding. So obviously those two areas of exposure, so to speak, are not areas that we're going to be influencing later in life, but they are very important avenues when you consider setting individuals humans up in a good way in terms of having excellent colonization of healthy microbiome. So later in life the two areas that we have an opportunity to influence are through environmental exposure and food. And both of these are intimately related to soil and soil health, and this is the area that I'm interested in pursuing and optimizing.

JUDITH: That sounds great. Okay, so let's go to the basics. When we talk about the microbiome of us at birth we're really talking about bacteria, correct? When we come into this world as a human being between the birth canal and our mother we're actually, I'm going to use the word saturated, but we are actually given a boost in microbiomes or bacteria. Am I using those words correctly?

KIM: Yes, you're basically exposed to natural flora that exists. When we talk about the microbiome there's the gut microbiome is obviously one of the major areas of colonization. In fact, it's probably the greatest for sure. But we are also colonized with healthy and beneficial bacteria in our mouth, in our nasal passages and through our genital urinary system. All these areas are important, and I should have mentioned the skin as well. Skin is the

major source of colonization which is interesting because when we look at the hygiene hypothesis and our over-dependence on alcohol washes and antibacterial soaps, etc., we really are negatively impacting some of these positive beneficial microbes that we are exposed to. And these items are having a negative effect overall on our health because it's destroying both the good guys and the bad guys when we're using these agents.

JUDITH: I agree with you. I think there's been a body of research coming out to support that as well. We tend to ruin the skin mantle with some of these very, very harsh soaps, so we have to look at some alternatives. But what I'm trying to get at here is a starting point for my listeners to understand that we're actually more bacteria than we are cells. I find that fascinating because I have a nursing background like you do and we were never taught that in our biology. We're always taught about, you know, the lung system, the cardiovascular system, we have a series of cells that seem to know what to do. But what we're finding out today is that we're actually 10x more bacteria than we are human cells and that's the piece that you're trying to improve upon in 2 different ways; looking at the soil and looking at us as a human species what does that interface actually mean?

KIM: Correct. Our intestine alone has approximately 100 trillion bacteria. It's an unbelievable number. And it's not just the number that's important it's the diversity that's extremely important and you know as we go through this conversation today I think one of the key points that I'd like to convey is that you need to pay attention not just to exposing ourselves to bacteria in and of itself but to building a diverse community of bacteria because that diversity is what enhances our resilience and improves our ability to fight disease and to promote health. It's a combination of healthy bacteria and healthy bacteria diversity.

JUDITH: I agree with you. I've been in the health food industry for a long time and I've tasted and tried all kinds of probiotics and green foods and what I've found is the ones that seem to work the best are the formulas that contain diverse strains. We're not just looking for something to combat Candida yeast, for example, but we're looking for a variety of strains to promote health and well-being. And it's interesting that in a very limited way our hospitals are getting on board with that because of MRSA and C-Diff, you know very serious super bugs out there that are causing havoc in our hospital communities.

Building on that then, let's look at soil and how you connect the dot between soil and gut health.

KIM: Yeah, so you bring up a very interesting point that I'd like to expound on a little bit. You mentioned probiotics and most people think of probiotics as a pill or as fermented food, which are both accurate. But what people don't realize is that there are thousands of beneficial microbes on the surfaces of fruits, vegetables and greens that come from healthy soil. And although these organisms really don't take up residence because the gut is an anaerobic environment and these organisms thrive in aerobic environments, they are considered beneficial transients. They do play an important role in boosting the immunity as they travel through your intestines and interact with the local bacterial community. What we're learning is that the gut microbiome has its own communication system and its own early warning system if you will. So, when pathogens or diseases start to emerge there's communication and signals that go out within the gut to create an appropriate response to protect the host or the symbiotic host I should say, the human. So healthy food that is grown in healthy soil can be thought of as a very important probiotic and we should be thinking about it that way and using it and consuming it with that in mind.

JUDITH: But what happens when we wash our fruit and vegetables, which we have to do to some extent.

KIM: Yeah and most vegetables that you purchase at the grocery store has been washed several times. It's been at least, I think, 5 times but you can't really wash off microorganisms completely. You can get a certain percentage of them to be washed off but there's still an element of colonization. And if you know that the food has been grown in healthy environments, I mean you really don't need to be washing them extensively. For example, if you're growing your own produce in your backyard garden and you know that that soil is healthy and there aren't any contaminants there and it's a healthy food web, it's actually more beneficial to consume that food without major washing.

JUDITH: Yeah, I've heard that too. I think there's a company out there that kind of started his program based on probiotics from dirt. And I always thought that there was some wisdom to that because if we are farming and if we're growing anything, whether it's a small backyard farm to huge, you know, agricultural farm we are walking in the dirt; we have our hands in the

dirt; we brush our skin with dirty hands; we sweat; we pick up the dirt that way. And I don't think we've realized up until recently how beneficial that's been for us as a species.

KIM: I agree with you and there's some good research out there. It's actually called the hygiene hypothesis where they've shown that children raised on farms that are exposed more to nature and dirt and animals, etc., that they actually have fewer allergies than children who are raised in clean high end city houses. So, there's definitely a benefit to being exposed to diversity, micro-diversity through soil and pets and dogs, etc.

JUDITH: And you and I as nurses know that there's practicality to all of this too. You know, there's a way of being practically hygienic and there's a way of sort of stretching the boundaries of that just a little bit. We don't have to spray every surface with Lysol, is what I'm getting at.

KIM: Absolutely.

JUDITH: To be clean and have a healthy environment within our home. You know children should be allowed to run outside and play in the dirt and even if they get muddy and dirty that's okay. Then when it's time to eat, obviously proper hygiene practices are put into effect.

What else would you like to share about this?

KIM: So, I think when you're talking about major influences in terms of the healthy gut microbiome there are some things that we can do or that we can think about when purchasing food from say market growers or you're growing it yourself. One of the key elements is an understanding and appreciation for healthy soil and what does healthy soil mean? It's almost a buzz word these days. What it means to me and to a lot of us who are involved in growing with biology, what it means is a living biologically diverse community of microorganisms that take on responsibility for nutrient cycling. It's actually very interesting when you look at healthy soil and healthy gut, two living systems teaming with biological diversity with strikingly similar functional responsibilities for doing the the nutrient cycling or digesting food and taking responsibility for suppressing diseases and ensuring that the community stays healthy and that any pathogens that would enter the system are actually proactively eliminated. So, when healthy soil biology is allowed to flourish, plants benefit, people benefit, and this is nature's design. This is the way nature intended it. I think really

focusing on building healthy soil is the key element that we can consider when trying to improve our gut microbiome.

JUDITH: And your company helps growers do just that, correct?

KIM: Yes, in fact there are ways that we can help growers assess the biological health of their soil through biological soil testing. We look for the key microorganism groups that are, that you would like to see in a healthy food web. And we quantify those through population statistics and provide that data back to farmers so that they can intervene in ways that helps nurture that community to improve not only the quality of the food that they produce but to lessen the inputs that are needed to grow successfully. When you have a healthy food web you don't need to be utilizing fertilizers, pesticides, herbicides, fungicides, etc., the soil food web takes care of that. It takes care of the health of the soil and eliminates the needs for these external agents.

JUDITH: And that has to be cost effective as well, and labor reducing too, right?

KIM: Absolutely. I mean it takes money to purchase these pesticides and whatnot and takes time to apply them. You're absolutely right in the sense that it saves both time and money when you can establish a food web that automatically does this without outside inputs. I mean you're basically working with nature and allowing nature to be your army of workers in your soil and take care of your plants.

JUDITH: Well economics always drives the engine, you know? And I think coming up with these possibilities, these testing's, this data analysis, getting it back to the farmer, showing them the economic savings on several fronts will make a difference. Are you right now working with large scale farms or smaller scale farms?

KIM: We work with the entire gamut of growers from farmers who are farming several acres, multiple acres to the home gardener. Anyone really interested in really fostering and nurturing the soil food web and growing with biology. We have to start thinking differently about our soils if we're going to improve the quality of the food supply. You know there's good data out there that tells us that soils that become so depleted by modern farming practices, that foods that were grown decades ago where actually much richer in vitamins and minerals than food grown today. So, there's a

lot of motivation to change our practices, to treat soil as a living organism, to minimize the on-going use of both organic based and synthetic chemical agents in the soil. In order for a healthy microbiome to survive whether it's in our gut or in our soils, it needs to have an environment that's toxin free. So that's why it's so important first to focus on the soil because the toxin and residues get on your food. You ingest those chemicals and that has a negative impact on your microbiome just as it has a negative impact on microbiology in the soil. So, it's all interconnected and the more we eliminate the use of these chemicals the better off we're going to be as people and the better off our plants are going to be in growing in soils that are clean and healthy.

JUDITH: Right and my biggest concern is with the major players out there for injecting the seed with a chemical, systemic chemical to ward off a weed. They also put other adjuvants into that mix that we're not even aware of. And, for the most part in our society there are antibiotics that get put into the mix, etc. So, they inject it into the seed. They inject it into the soil when they apply it on the soil, so we're getting huge amount of antibiotics from these other sources. Forget about our misuse of them in the medical field but we're getting them in our food supply. When you add all of these factors up, I can see why soils are not healthy, why they get tired, of why nutrients are leached out of the soil. They're not up taken by our food. We eat that food and we're not getting all the minerals we think we are. We're also getting the residues to the chemicals and that we know is starting to affect the biology. Dr. Stephanie Seneff out of MIT is doing some great work showing how the microbiome within our gut is seriously affected negatively by the use of these systemic chemicals. So, I applaud what you're doing and the education as well as the resources that you're offering to your community out in the Midwest.

What else would you like to add to this?

KIM: I think you know the other thing in terms of when you talk about proactive approaches to improving your gut microbiome, there are several things that people can do. In addition, not necessarily related to growing but related to the types of food that you consume. And I think one of the most important things that people can do is to **put fiber center stage in the diet**. The requirements for the, by the FDA in terms of minimum amounts of daily intact of fiber, I think it's like 29-38 grams and what we're actually consuming is less than half of that. Most American diets consist of about 15

grams of fiber. When you think about what you can do to improve your microbiome, this is one of the key areas of focus. And there's a group of foods that, you know, people can focus on eating, the fruits, the vegetables, healthy legumes and nuts and so forth, whole grains for sure. These are the areas that you want to focus on when you're at the grocery store, when you're at the market gardener's stand and you add to that verification that the food was grown without chemicals. You're really doing your microbiome a favor by not only increasing the fiber content but you're increasing the fiber content with food that is clean and healthy and grown without chemical residues. I think these are important strategies and things that people can do right now to improve health.

You know what happens when your fiber intake is low is that it's not that your microbiome short of shrivels and dies. What happens actually is your microbiome refocuses its source of food intake and the intestines actually secrete a layers of carbohydrate rich mucus that when there's not enough food source for your microbiome they resort to eating these mucosal food source that is secreted by your intestines. And there are prolonged periods where there's a food shortage, so to speak, that can actually cause problems because your microbiome gets very close to your intestinal lining, which is a barrier that should not be crossed ever. You don't want bacterial microbes floating around in the bloodstream. What happens is, when they get too close to breaching that protective layer between the intestinal wall and the blood stream it triggers this immune response. And that's where you get sources of inflammation and people can get really sick. It's essential to make sure that people start thinking about how much dietary fiber they're consuming and really improving that consumption.

JUDITH: Unfortunately, sometimes it takes us facing a serious illness to make those changes because in our society we have easily available food that's very low, very poor substitute for fiber. And that's a change we have to personally make one choice at a time when we get out there. I know I'm on the road sometimes for 8 hours. I always bring my food, my nuts, my drink in the car because if I have to stop anywhere on the road what are my choices? My choices are fast food that has no fiber, very little nutritional value and it's very unsupportive of us and yet it's convenient. And that's the piece that we have to change in our society, is can we make healthy food convenient going forward instead of just the unhealthy food? You bring up some really great points. You and I both know as nurses that people have a lot of IBS out there which is irritable bowel syndrome. Crohn's disease is

very prevalent, there are ulcers, GERD, and acid reflux. Those are really highly prevalent dysfunctions in our society today and we can make a difference with some different proactive choices as you mentioned.

Do you have any other tips you want to leave us with before we close?

KIM: I'd like to close with my last and final tip which is if you grow, **grow with biology**. And that's kind of my mantra and the most important consideration I think that people who are interested in growing their own food. Not only will it benefit the quality of nutritional density of your food but it's also going to help you minimize the requirements for additional inputs. Those toxic chemicals that we mentioned because the biology will proactively provide protection from diseases and pathogens and whatnot that can attack your food. I personally grow with biology and recommend that the folks that I work with and farmer's that I support do the same and we're starting to see a pretty significant shift in momentum. People are paying more attention. It's a paradigm shift in many, many ways and as we begin to support with good data, I think we're going to see some significant progress in this area going forward.

JUDITH: Could you give us 3 ideas for biology. Are you talking about composting grass, leaves, seaweed, what else? Is there anything else you want to add to that besides kitchen scraps?

KIM: Yes, composting is **composting with bio-complete, creating bio-complete compost**. Meaning that it's not just putrefied organic material. It's turned appropriately. It's maintained in an aerobic condition so that it contains the beneficial microorganisms that are going to improve your soil. So composting is a big one. **Eliminating tillage** in soils is another. The microbiology sets up their housing in your soil, so every time you dig it up, you're basically functionally creating a tornado and destroying their habitat. By eliminating tillage, eliminating the turning over of your soil you're protecting that habitat and allowing that microbiology to thrive and the housing communities that they've developed so to speak. And the third one is we're seeing more and more **cover cropping** so making sure that you never have bare soil, that you have it covered either with what we call cover crops which are beneficial crops and plants that grow in between your vegetables and your cash crop, so to speak. You know maintaining the root systems of some plants so that their microorganisms are constantly active,

developing, working. That they're not allowed to go idle is essential to maintaining that functional soil food web.

JUDITH: Hmm. Those are great tips and what we have found in our personal backyard garden, we have about 800 sq. feet of garden beds, is that it's a lot less work. We got ourselves a little electric mower. We mow in the paths, but all the root systems are kept. We keep that diversity and we don't pull out those weeds at all to try and grow that fungal network from one bed to the other, to the other, to the other and we're excited about these changes because it's easier. It's easier but it's also rewarding because we trust our food is going to be really nutritious doing these things.

KIM: Yes, and it sounds like a wonderful plan. I bet you also noticed that as you work to advance your garden that you're seeing more pollinators. You're seeing more beneficial insects come to your garden, the birds. Generally, first you see the birds come back and then the beneficial insects. I mean it's been years since I've seen a praying mantis and when I started this method of growing myself, I mean I see the praying mantis come to my garden on a regular basis. The honey bees are pollinating my fruits so that I get higher pollination rates and more yield, so it's all interconnected and very beneficial for the environment.

JUDITH: It is and it's a win for them because the insects and the critters and the microbes and the fungi are doing what they came here to do. They're great teachers for us and I think that's part of the message that I want to get across with these podcasts series is that Nature is actually raising its voice right now to be our teacher because we really need her guidance. We really kind of messed things up in some ways. I really love the positive things that folks like yourself are doing to make a difference.

KIM: Thank you.

JUDITH: Well Kimberly it's been great. I want to thank you again. I want to thank you for all your practical tips and advice and also your explanations. They're very clear and I hope people start to really get comfortable with the words microbiome and the biome of the soil, the biome of our intestine and how related we are. So, thank you for that.

KIM: Thank you, it was a pleasure.

JUDITH: This is Judith Dreyer. I'm the author of "At the Garden's Gate", book and blog. My book is available through my website <https://www.judithdreyer.com> as well as several distribution arms such as Amazon, Nook, Goodreads and more. I'd like to remind all of you that a transcript is available for each podcast. And please like and share them. Let's get the word out and support each other.

And remember, **now** is the time for practical action and profound inner change so we value our world again.

Enjoy your day.