



STEMsational Ag: The Virtual Farm

MIDDLE TENNESSEE STATE UNIVERSITY



Module 4: Chicken Coop, Chicken Soup UNIT 1: BIRDS LOVE BUGS Grades 9 – 12



National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE



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Module 4: Chicken Coop, Chicken Soup

UNIT 1: BIRDS LOVE BUGS

Grades 9 – 12



9th – 12th Grade:

Introduction to the Unit:

Have you ever thought about what chickens eat? Due to all of the grocery store labels, many of us have the misconception that chickens are vegetarians. However, in this lesson you will learn they are not. In addition, have you ever considered that what farmers feed their chickens effects the quality of the eggs and poultry in the local grocery store?

Pre-assessment:

- ▶ Take out a sheet of paper and do a three-minute quick write of everything you know about chickens and their diet
- ▶ In addition, include in your quick write how you feel a chickens' diet effects humans if we eat eggs and poultry

Purpose:

Have you ever thought about what chickens eat? Due to all of the grocery store labels, many of us have the misconception that chickens are vegetarians. However, in this lesson you will learn they are not. In addition, have you ever



considered that what farmers feed their chickens effects the quality of the eggs and poultry in the local grocery store?

Student Learning Outcomes for the Unit:

Student will analyze, identify, and articulate the diet of a chicken

National Agricultural Literacy Outcomes

Plants and Animals for Food, Fiber & Energy, Theme 2

T2.9-12

E. Identify inspection processes associated with food safety regulations

Vocabulary Words:

- ▶ **Vegetarian:** a person or animal who eats no meat or fish but only eats vegetables, fruits, nuts, and grains
- ▶ **Chicken:** a bird that people all over the world raise for its meat, eggs, and feathers. It belongs to the group of domesticated, or tame, birds called poultry
- ▶ **Natural environment:** the place where an animal or plant normally lives
- ▶ **Insects:** a small animal whose body is divided into three parts
- ▶ **Omnivore:** an animal that feeds on plants and other animals
- ▶ **Poultry:** birds that people raise for meat, eggs, and feathers
- ▶ **Rural:** areas that are not towns or cities; rural areas are often farming or agriculture areas
- ▶ **Flocks:** a group of animals like birds or sheep that have congregated together

Materials Needed:

- ▶ Paper
- ▶ Writing utensil

Activity 1: Begin with a Podcast!

On the following pages, read this podcast episode transcript: "Chickens... on the Gundry diet?" from The Dr. Gundry Podcast

- ▶ **Optional:** if you have access to the internet, you can listen to the podcast by visiting this website
 - <https://www.podcastone.com/episode/Chickens-on-the-Gundry-diet>

Be sure to take notes!



PodcastOne: Chicken... on the Gundry diet?

Dan Walter Transcript

by Dr. Steven Gundry | Nov 9, 2020

Speaker 1 (00:00):

Welcome to the Dr. Gundry podcast, the weekly podcast, where Dr. G gives you the tools you need to visit your health and live your healthiest life.

Dr. Gundry (00:14):

You know, there's a lot going on right now, a pandemic and election, the holidays and more and it's enough to stress anyone out. And when you're stressed, it doesn't just affect your immune system. It can also leave your muscles and joints feeling achy and sore and make it tough to get through your day. That's why I was excited to learn about the all-new Gen 4 Theragun. The Theragun is a handheld percussive therapy device that releases your deepest muscle tension using a scientifically calibrated combination of depth, speed, and power. And thanks to a new proprietary motor, it's about as quiet as an electric toothbrush. I seriously cannot wait for my wife Penny and I to try it because let me tell you, Penny is an outstanding athlete, but she is really missing her regular massages. And now you can try it for yourself too, for a full 30 days.

Dr. Gundry (01:03):

There's absolutely no substitute for the Gen 4 Theragun with an OLED screen, personalized app and the quiet and power you need to relieve muscle tension and prices start at just \$199. All you have to do is go to Theragun.com/Gundry right now, and get your Theragun today. That's Theragun.com/Gundry. Theragun.com/Gundry.

Dr. Gundry (01:31):

Welcome to the Dr. Gundry podcast. So, you know, you are what you eat. I bet you've heard that saying hundreds of times before, but when it comes to the food, we eat animals and plants, we are what they eat too. So when the plants we eat aren't nourished with healthy mineral rich soil, or when the meat we eat is fed a diet loaded with lectin filled grains, antibiotics, and hormones, it can have a huge effect on our health, including on our weight and our energy levels. Well, my guest today says it doesn't have to be this way. According to him, there's a better way to farm that's not only good for you, but it's also good for the animal and for the planet.

Dr. Gundry (02:24):

So Dan Walter is the founder and head farmer at Pastured Steps in Midlothian, Texas. And he's done something few farmers have done before. He's raised one of the world's first lectin-light chickens, and I've tried one and both my wife and I really



loved the taste. In fact, we've now had two of them. Thank you, Dan. On today's episode, Dan and I are going to discuss what's wrong with conventional agriculture, why a bigger bird isn't necessarily better. And what exactly is in that cheap chicken at your local supermarket? Dan, it's so great to have you on the podcast. Welcome.

Dan Walter (03:08):

Well, thank you, Dr. Gundry, it's a pleasure to be here with you. I've been looking forward to this conversation.

Dr. Gundry (03:13):

All right, let's start with a basic question Dan. How the heck did you go from being a mechanical engineer to running a farm?

Dan Walter (03:22):

My idea of engineering was planning, designing, building, testing, redesigning, building, and I went to school for that and did those things. And then after my first job, and after three years, I found that I was sitting behind a desk just doing the designing part, and I really missed the other parts of that. So I started my own business, doing energy efficiency and, uh, built a net zero house while doing that, running that company. And that led me into sustainability. I stumbled upon permaculture, took a permaculture course, and then, uh, that led me to regeneration, regenerative agriculture.

Dr. Gundry (04:05):

So for those who, who don't know, w,what is regenerative agriculture? You raise the same chicken over and over again, or no?

Dan Walter (04:15):

(laughs). Basically I agriculture can either have a positive impact or a negative impact. And unfortunately, most of the agriculture here, uh, has a negative impact. We're depleting the soil of nutrients, we've lowered our carbon in the soil. Um, infiltration rates are down. So regenerative agriculture has a positive effect on the soil, We're building top soil, we're increasing the water capacity. We're doing all these things that help the micro biology thrive in the soil.

Dr. Gundry (04:48):

You know, I, you, you brought up a great point. Uh, soil is a great place to store carbon, right? It's a, it's a carbon sink or it should be.

Dan Walter (05:00):

That's right. Um, our soil used to be about 8% organic matter. And most of us all in the country today has dropped less than 1%. So all that carbon has gone into the air. Now we're trying to get it back into the ground.



Dr. Gundry (05:13):

And so when you, so maybe we'll get into this, but where... I think people need to understand that re, regenerative agriculture, at least the way I think most, uh, most people practice it. Like you do uses animal ways as a part of this regenerative agriculture. Is that putting words in your mouth?

Dan Walter (05:41):

No, that's exactly right. There's a lot of different ways to do regenerative agriculture, uh, but animals is by far one of the more effective ways. And they cycle that carbon back into the ground. Um, as long as your animals are out in the pasture and not in a barn somewhere, they're putting fertility back on the ground.

Dr. Gundry (05:59):

So I, so this net zero house and everything is, is that kind of, what s-stoked your passion about regenerative agriculture?

Dan Walter (06:10):

Well, the energy efficiency led me to sustainability. And then when he got out there on the ground, he found (laughs)... there's not enough left to sustain. You have to go beyond that, so you have to start regenerating things to get it back to where it was at one point.

Dr. Gundry (06:26):

So did you, I mean, did you ever have a farming background? I mean, were you in 4-H Club growing up (laughing)... or was this all, all brand new to you?

Dan Walter (06:38):

Um, I always had animals. I raised ducks and chickens as a kid, so there's a little bit of experience with that. And then we had a whole flock of chickens while I was running my other company, um, just slowly started adding on these different pieces of animals and I decided to go full-time with it.

Dr. Gundry (06:56):

So where does so, all right. So you've had chickens most of your life. Where does, where does animal welfare fit into your vision and how do you do it differently on your farm?

Dan Walter (07:06):

Well, I think the key is that the animals are expressing their natural behavior. That means cows are allowed to forge for their own food and out there in the pastures, they're not locked up in a barn. Pigs are not on a cement slab, they're out there in the dirt and mud and then chickens, they're not cooped up in the building all day long. They're out there where they can forge, they can gather bugs and they can take dust baths in the sun. Uh, in those environments, there's a lot less stress on them and they're able to thrive.



Dr. Gundry (07:38):

And I mean, can you, uh, it's obvious to most people, but a, uh, you know, a pig rolling around in mud to me strikes me as a rather happy animal. Um...

Dan Walter (07:49):

(laughs). Yeah. A pig on a cement slab is probably a very unhappy animal.

Dr. Gundry (07:55):

Yeah. Yeah. Uh, so what let's, let's go start one of these questions that everybody asks. Um, and I, I grew up in Nebraska and had many family friends who were farmers. And, uh, I learned early on that chickens were an essential part of any farm because at least in Nebraska, the chickens were led out into the fields where the cows were and they would head for the cow pies. Then they would dig through the cow pies, looking for bugs and they would spread the manure and they then came back to the coop and laid eggs. And, but they were an essential piece of this, this whole piece. And I was taught from day one that chickens love bugs. They're insectivores um, is that, is that your experience?

Dan Walter (08:50):

Absolutely. That's the first thing they do is run straight for the cow pats. And I tell that, and they're kind of disgusted by it (laughs). That's the way nature, sanitizes the pasture, and then cleans up those parasites out of the, the cow patties. [crosstalk 00:09:05] lowers, yeah, it drops your fly pressure quite a bit on the cattle.

Dr. Gundry (09:10):

So, uh, what, what you're saying is that, uh, nature and farming, the way it was designed is a, is a pretty slick system from an engineering standpoint.

Dan Walter (09:25):

Yeah. Nature does it best. And we worked really hard to try to do it our way, which is not necessarily better.

Dr. Gundry (09:31):

So, what's the problem with the way most chickens are raised now? I mean, isn't bigger, better, and faster producing better?

Dan Walter (09:39):

Without ripping on other farmers too much (laughs)... uh, we can go through a little illustration and, uh, just imagine you and your closest 1,000 buddies all lived on a building the size of a basketball court and they bring all your food in and they tell you, "We're not going to take anything out of this room until you guys have lived your lives." Um, just imagine what that environment would be like after a couple of days, after a couple of weeks, after a year, and then they're gonna feed you a diet that's



high in carbohydrates. What types of things can you imagine that that environment would be like after a little while?

Dr. Gundry (10:16):

Uh, you'd be fat and angry. I would-

Dan Walter (10:18):

(Laughs)

Dan Walter (10:20):

Yep. There'll be high, high levels of stress. There would be a lot of sickness going around as soon as one person got it, it would spread to everybody. Uh, you would be walking around in waste up to your knees probably. Just probably the most unhealthy environment you can imagine.

Dr. Gundry (10:38):

And yet that actually is how most commercial, uh, chicken raising is done.

Dan Walter (10:44):

Yeah, probably 99.9% of all the chicken that's available in this country is raised in a facility like that.

Dr. Gundry (10:52):

And so obviously it has been brought to a science where you can get a chicken from a hatchling to ready to eat in now a matter of, of weeks, uh, if, if I'm not mistaken.

Dan Walter (11:13):

I know guys doing it in five to six weeks.

Dr. Gundry (11:17):

Yeah.

Dan Walter (11:17):

Those chickens grow so fast, they outgrow their frames, they have trouble walking. They usually have heart problems 'cause their organs don't develop quick enough to support their size.

Dr. Gundry (11:28):

And we do that in the name of, uh, efficiency and cost? Um...

Dan Walter (11:34):

Yeah, efficiency is the number one goal. Most farmers, um, they get paid so little, they have to turn them over as quick as possible.



Dr. Gundry (11:42):

So what do you do at your farm better? Um, for, I mean, for the environment and for the bird?

Dan Walter (11:48):

Well, our chickens are raised in a completely different manner. We've got these portable shelters that are completely bottomless, so the chicken's feet are on the ground. And that's actually where the name Pastured Steps came from. Everybody's foot steps or footprints on the ground. And then they roam around in this tractor all day long, and they sc, scratching the dirt, they eat the grass, the bugs. They leave their manure behind, and then we moved that tractor every single day. And when they're older, we move them twice a day. So they're constantly getting, um, a fresh salad bar, uh, new bugs, new grass, uh, new diapers to speak. And they're just, they're moving away from their manure so they're moving away from that disease and bacteria and any kind of pest pressure that might be there. So that allows us to raise them without any kind of antibiotics.

Dr. Gundry (12:38):

Great. And we didn't get into this, but, uh, my understanding is that even though it's illegal to give chickens antibiotics, in fact, most of them are dosed with antibiotics because there's a waiver if the vet says, "I think there's a sick chicken in there," you're not going to pull that guy out. You're just going to give antibiotics to everybody.

Dan Walter (13:03):

I think antibiotics are used frequently. Um, hormones are probably what's illegal more than anything else.

Dr. Gundry (13:09):

Yeah. Yeah.

Dan Walter (13:10):

Um, I think there's a withdrawal period of a few days before you harvest them or they can't have antibiotics. I don't know what that is.

Dr. Gundry (13:18):

But it's already in the meat, so, Oh, well.

Dan Walter (13:20):

(laughs). Right.

Dr. Gundry (13:22):

Okay. Now I've got a big question. Why in the world would you raise a lectin-light chicken?



Dan Walter (13:30):

I was raising chickens and I was feeding them the best organic feed that I could find, and I had a farm tour. And one of the customers there, which was on your diet, I did not know about it at the time started asking me what was in the feed. So I started listing off ingredients and she was like, "Well, I can't have that, I can't have that, I can't have that." I thought to myself, "You're not going to find chicken anywhere in the world that you can eat," and come to find out that that was pretty much true.

Dr. Gundry (13:59):

Yeah. That's very true. Um, so and, so w, what was in your, the best you could get conventional feed?

Dan Walter (14:08):

The feed contained things like corn. So I, we, um, I looked around, I did find some that didn't have corn, soy, wheat, but they just substitute those out with things like peanuts and peas and lectins and lentils. And so they're all high lectin substitutes.

Dr. Gundry (14:30):

So what's exac, uh, so what in the heck is in your feed and what went into, uh, developing it?

Dan Walter (14:36):

It started by finding the best feed we could, that didn't have corn, soy and wheat. Of course it had those other things so we had to exchange those out, um, for items like sorghum, um, millet, flax, sesame. So we kind of went through your guess list and tried to find things that a chicken would eat (laughs). They would have enough protein and getting the protein levels where they needed to be was a little more difficult. Um, but we were able to come up with something and we're still refining it to make it better, but...

Dr. Gundry (15:09):

Will, will chicken... I got a question for you. Uh, wlll, chicken eat seaweed?

Dan Walter (15:15):

I'm sure they would. Uh, especially if you blend it all up and mix it in with the rest of their feed.

Dr. Gundry (15:19):

Okay.

Dan Walter (15:20):

... but kel, kelp is one of the ingredients that's used occasionally.



Dr. Gundry (15:23):

Yeah. You know, um, we, you know, we started this program talking about, you know, you are what you eat and you know who you are what the thing you're eating ate. But one of the things that I think we've, we've missed in probably thinking about lectins is corn and soybeans and wheat in particular are very high in omega-6 fats. And, uh, the grasses and the bugs that the, the chickens would normally eat are actually full of Omega-3 fats.

Dr. Gundry (15:58):

And we have to have, you know, a good ratio of omega-6 to omega-3, there's nothing evil per se, about omega-6 fats. In fact, there are some that are essential, but I think one of the things we've neglected to realize is that a chicken raised your way on pasture has a totally different profile and ratio of omega-6 to omega-3, than a chicken in even fed organic corn and soybeans and grains is going to have a much higher omega-6 fat profile than they ever would have had normally. And the same goes for, you know, grass fed and grass finished beef or even pork. And I think, you know, we all talk about inflammation and now so much of our diet is inflammatory, but I worry that we should be spending more time on the inflammatory fat in these organic chickens and cows, because of what they're being fed.

Dan Walter (17:04):

I've seen a couple of studies they're indicating exactly what you're saying as far as omega-6 to Omega to omega-3 and that ratio. Uh, also they'll have more vitamin D and vitamin A and vitamin E a couple of those other essential vitamins.

Dr. Gundry (17:17):

Yeah. There's even studies now that farm raised salmon, uh, farm-raised salmon used to be fed ground up fish, and that got too expensive. So they're now being fed ground up corn and soybeans and wheat and the (laughing)... salmon, which is supposed to be the Omega three powerhouse, you know, the fish world now has a huge omega-6 profile. And, you know, so I just cringe when people say, "Well, all I eat is organic salmon." And I go, "Well, yeah, but it's, it's organic omega-6 fat, salmon."

Dan Walter (17:52):

(laughs)

Dr. Gundry (17:53):

"You're not even getting the omega-3 you thought you were eating the salmon for."

Dan Walter (17:58):

Yeah. There's a term that's coming out that's becoming popular, that's beyond organic. So it's taking the organic standards and it's moving at one step further.



Dr. Gundry (18:08):

Yeah. And what, so, uh, have you had, so now you've been feeding the, this new food to your chickens, uh, and how long have you been doing that?

Dan Walter (18:18):

Um, I've raised two batches so far, and I'm about to do my third batch. So about a year and a half as far as the lectin-free chickens.

Dr. Gundry (18:26):

And how, uh, so how long does it take to get a full grown lectin-free chicken?

Dan Walter (18:32):

Well, the way I do it, it takes nine to 10 weeks. So I'm using a, a slower growing bird and they didn't obviously don't grow as quick on the speed as they would on a corn soy feed. And I'm using a bird it'll have a little bit more texture and more flavor too, and that slower growth adds more flavor to the meat.

Dr. Gundry (18:51):

And, uh, so do you notice any difference in them, their growth pattern, their behavior?

Dan Walter (18:59):

The biggest difference I've noticed is they're not as eager to attack the feed when you fill it up (laughing). Uh, they'll spend more time foraging and they will grow slower, obviously, which is more healthy for the bird actually.

Dr. Gundry (19:12):

Yeah. Well, we noticed my wife is actually not a chicken fan, as we know them, you know, even the organic chickens, I think of just, they, they're pretty doggone blah-

Dan Walter (19:24):

(laughs). That's true.

Dr. Gundry (19:24):

... and it's certainly not like what I grew up, you know, in Omaha eating, uh, my wife, when we, she really, we don't have chicken very much because of that. And my wife, I talked her in, you know, to having your chicken. And she says, "Oh my gosh, you know, w, where'd you get this? What's, what's the deal? This is actu, this is, this is really good, you know, and I hate chicken." So that's actually very high praise, um, from, from a chicken hater (laughing). And yeah, so we've actually had, you know, a second one of your chickens. Um, so, and yeah, you're right these taste like, you know what I was growing up in Nebraska eating, which is actually (laughs)... how chickens were raised. Okay. I think we got into this. So it takes a lot longer to have a chicken raised this way.



Dr. Gundry (20:12):

As you know, I'm a self-proclaimed veg-aquarian. When I eat animal protein, I eat wild-caught seafood usually twice a week. Why? Because seafood is rich and some of the most important nutrients in the human diet, like long chain omega-3 fatty acids, phospholipids, and there's even some cool studies showing that eating fish promotes a healthy weight. But in order to ensure you're getting fresh, nutrient rich seafood without hormones or toxins, it needs to be wild caught. As I always say, you are what your food ate and farmed fish are fed in an inflammatory fat diet filled with lectins like corn and soybeans. Long story short, if you eat farm fish, it's absolutely horrible for you. Fortunately, I've come across a great solution. It's called the Wild Alaskan Seafood Box. The company works with small boat fishermen to deliver the freshest, tastiest and most nutritious Alaskan seafood right to your door every single month.

Dr. Gundry (21:05):

They offer three different boxes. The Salmon Box, the White Fish Box, or the Red and White Combo, which is what I order. Plus a customized box you can change it any time. Believe me, this is some of the best fish and because it's wild caught, I know I'm getting some of the most nutritious seafood on the planet. And right now you can try it for yourself and get \$25 off your first month's box and get free scallops for life when you use code DrGundry, all one word at checkout. Just go to WildAlaskanSeafoodBox.com. Again, that's WildAlaskanSeafoodBox.com and use code DrGundry, D-R-G-U-N-D-R-Y. And get \$25 off your first month's box and free scallops for life. And obviously it's, this is more expensive to have a smaller chicken um, than, than that cost more.

Dan Walter (22:06):

Right.

Dr. Gundry (22:07):

So is it worth it? Everybody wants to know.

Dan Walter (22:13):

Well, I think you'll find that most things that are more healthy and better for you cost more, and that is determined by the feed that goes into it more than anything else. My feed is nearly eight to 10 times more expensive than if I were to go out and buy a conventional grain.

Dr. Gundry (22:31):

Wow. So you're, I mean, you're, you're paying for quality ingredients, right?

Dan Walter (22:39):

That's right. You started out the show by saying that you are what your food ate, and then I would add to that by saying that your food costs what your food's food costs.



Dr. Gundry (22:51):

Yeah. That's, that's a very good point. And so if people are going to say, "Well, yeah, but that's only for really rich people. And I got to put food on the table for my family." Uh, why, why should we all do this? Why should we care? Or, you know, we mentioned regenerative agriculture. Um, do you see kind of agriculture Armageddon soon if we don't make some change fairly quickly?

Dan Walter (23:27):

Well, there's a lot of farmers that have speculated that, uh, I'm not a real big global warming alarmist, but you can see the trends that we've pumped so much carbon into the atmosphere that the weather patterns are changing to some degree. And we've depleted a lot of nutrients of our soil. So it's becoming more and more difficult to grow things. We can put in PK on our soil and that'll grow things, but it's lacking of nutrients. So I bought the best looking orange at the store and got home to find out that it was completely tasteless. Probably didn't have any nutrients at all on it.

Dr. Gundry (24:05):

Well, you're, you're right. Um, the, for instance, the vitamin C content in oranges is dropped 70% in the last 40 years. Um, I mean, it's just that you go across the board, the amount of magnesium in, in our vegetables, in our spinach has just plummeted to almost unmanageable levels now. And you're right. It's still looks like an orange. It's still looks like spinach, but it actually has no resemblance to, you know, 50 years ago, 100 years ago that 'cause you're right.

Dan Walter (24:44):

I think it's kind of like the way your gut works. I've listened to a few of your podcasts so I'm starting to learn more. But from a soil biology standpoint, that biology is what makes those macro nutrients available to the plants. So if the biology is not there, you can grow a plant, you can produce a fruit, but it doesn't have any nutrients in it.

Dr. Gundry (25:04):

No, you're absolutely right. Um, in my next book, the Energy Paradox is, is actually all about the, the soil microbiome is essential for the plant, getting nutrients through the roots. And it turns out our microbiome is essential for us to absorb nutrients through our roots, which is our microvilli. We literally have roots and are the things we swallow and the microbiome is our soil and-

Dan Walter (25:40):

Hmm, yeah.

Dr. Gundry (25:41):

... the two, the two are intrinsically linked. Uh we're we're, uh, we're basically a plant with roots that got up and walk-



Dan Walter (25:51):

(laughs)

Dr. Gundry (25:52):

... and that's, we have a mobile soil within us which, uh...

Dan Walter (25:55):

Solves it.

Dr. Gundry (25:56):

Is an interesting way to think about it.

Dan Walter (25:58):

Yeah, we have roots on the insides.

Dr. Gundry (26:00):

Yeah. That's exactly right. Our roots are inside there. All right. So that is, uh, are other, are other farmers taking notice or they go, "Oh man, Dan, Dan, the chicken man, you know, you, uh, you just go do that and you can starve to death?"

Dan Walter (26:19):

Well, I'm sure if this gains tracks and others will follow, um, as of right now, most farmers are busy just trying to meet the demand from the pandemic. Um, so our demand went up four times just from the pandemic. So there's a lot of people looking for alternative feed sources. Um, every small farmer I know is slammed right now. So I don't know if they're going to be looking for, to add new products on, or if they're just trying to meet the demand that they have, and we'll see how things change over the next year or two.

Dr. Gundry (26:53):

Is there, is there pressure on the small farmer from big corporations? Do the, they come in and say, "Oh, you know, come on. We'll, we'll buy out for X amount and you just shift over to the way we want to do it?"

Dan Walter (27:10):

I think all the pressure is from the consumer that's looking for alternate food source. Um, the stores around here were out of meat for a while and they were out of eggs and everybody was calling me up asking where they can buy chicken and eggs. And we were sold out for a couple of months there.

Dr. Gundry (27:27):

Now, are there other farmers around the country who, you know, are trying new ways of feeding chicken? Certainly, you know, the idea of pastured chickens is not a new



concept, but you're right. Most places that I've contacted, um, there's still a lot of pretty lousy things in, in the feed that they're giving their pastured chickens.

Dan Walter (27:52):

There's kind of three levels of feed. You can start with conventional feed, which is going to be dosed with all kinds of cides. They called it a toxic suicide. So you have fungicides, herbicides, pesticides, all of that. And then the next level up is non-GMO. And this is where most small farms land is on the non-GMO side. And then the highest side is organic. And then organic obviously has a lot fewer or, or none, maybe. There's less chemicals in them. Um, but most of the small farms and most of the pasture raise guys are using either non GMO or organic.

Dr. Gundry (28:30):

But even then the ne, the non-GMO, I mean, what 90% of the corn grown in the United States is GMO even if it's not sprayed with Roundup.

Dan Walter (28:40):

Right. Um, and most (laughs)... A lot of the non GMO stuff is sprayed with various chemicals.

Dr. Gundry (28:48):

Yeah.

Dan Walter (28:48):

And we kind of forget that we think non-GMO is going to be chemical free and that's not the case at all.

Dr. Gundry (28:53):

Yeah, no, you're right and in fact, almost, almost all conventional corn and soybeans now are, are pre treated with Roundup as a desiccant so that harvesting is a lot easier.

Dan Walter (29:06):

That's right.

Dr. Gundry (29:06):

Uh, yeah. And people, unfortunately don't know that and yeah, they, they, they, they don't get the connection that non-GMO, and it doesn't mean it hasn't been sprayed with, with Roundup or one of the other ones.

Dan Walter (29:21):

That's right. So if you want to avoid chemicals, you need to go with our organic program. We're not certified organic, but we do everything as organically as possible. And then if you want these other nutrients and the things that we've been talking



about, you need to go as pasture raised version. And, um, and if you want to try to avoid the lectins, you're now at the highest bar possible as far as raising the chicken.

Dr. Gundry (29:46):

Now I know when I, uh, sent out an Instagram about you, I guess, your next, uh, crop, uh, sold out rather rapidly, I guess.

Dan Walter (29:56):

(laughs). It did. And I'm actually looking at adding another batch this fall to see if we can help out some of the people that weren't able to get a chicken or two on that sale.

Dr. Gundry (30:07):

Well, let us, you know, let us know because we'll, we'll certainly get the word out there.

Dan Walter (30:12):

Okay.

Dr. Gundry (30:12):

Uh, 'cause uh, like I say, it's, uh, we need to support what you're doing for our community, but not only for our community, but we need to support, you know, the small farmer who's pasture raising their animals in regenerative agriculture because you know, it always, it's an always takes from the bottom up to change the world. It takes little actions, not some big downward action and that changes everything.

Dan Walter (30:43):

Yeah.

Dr. Gundry (30:43):

So, you know, I congratulate you and keep doing it. And, uh, it sounds like your engineering degree is, is paying off in ways you never thought possible.

Dan Walter (30:53):

That's right. I get to do all those things. I get to plan design, build redesign, build again. So it's all those things I was missing, I'm now doing it again.

Dr. Gundry (31:04):

Well, great. You know, it was great having you on the podcast and you know, I loved hearing about you and I loved your chicken (laughs)... And so does my wife. So how do people find out about your farm and uh, you know, will you announce your next batch soon?

Dan Walter (31:21):

Well, the best thing to do is go to our website, lectin-lightchicken.com, and then everything on there right now is sold out. So you can scroll down to the bottom and



subscribe to our email blast, and then we'll send out emails as soon as things are available. Uh, and then we'll have another pre-order sale that goes on and people can order their chicken from our next batch. If it sells out, then we'll, we'll do it again.

Dr. Gundry (31:46):

And you, um, being in Texas, you can raise chicken, you can pasture chicken throughout the year?

Dan Walter (31:53):

Well, I've taken off the month of August, 'cause it's just too hot. Uh, chicken start dying when it's over 100 degrees.

Dr. Gundry (31:59):

Interesting.

Dan Walter (32:01):

Um, you have to water them down just to keep them alive 'cause it, it's just so hot. And then I usually avoid January, February just because freezing temperatures are difficult as well. And as far as keeping your water lines unfrozen-

Dr. Gundry (32:14):

Oh, yeah, yeah.

Dan Walter (32:15):

... those sorts of things, um, I'm gonna push this next batch probably into January, so we'll see how it goes.

Dr. Gundry (32:22):

All right. All right. Well, thanks for, thanks for being here. Thanks for doing what you're doing and maybe you can convince some, some more farmers. So I, yeah, so I think you ought to look at it as a chicken wine club.

Dan Walter (32:35):

(laughs).

Dr. Gundry (32:35):

Uh, you know, you join a wine club, we've got, you know, the next vintage coming and you get the first pick. Um, yeah, so this is a chicken club.

Dan Walter (32:44):

Okay, great. Well, it's certainly a different chicken than you'll find anywhere else.

Dr. Gundry (32:48):

Yeah, I completely agree with you. All right. Thanks a lot. And we really appreciate you and what you're doing.



Dan Walter (32:55):

Thank you. It's been a pleasure.

Dr. Gundry (32:56):

Okay. It's time for our audience question. My next book in the bestselling Plant Paradox series is coming in March and you can pre-order it now at harperwave.com/energy. Energy paradox is my fresh take at one of the top health issues plaguing Americans, fatigue. And outlines my revolutionary plan for revitalizing mental and physical stamina. You'll feel better in no time. Learn more at harperwave.com/energy.

Dr. Gundry (33:33):

Ollie Wernerson on YouTube asked, "Olive oil has a large amount of mono unsaturated fat as well as saturated fat and has a bad omega-6 to 3 ratio. So how is olive oil a health oil?" Uh, that's a great question. Uh, I've had the pleasure of meeting with the Minister of Olive Oil in Italy in the past. And one of the things that I've learned through the years that he backs up is that the mono unsaturated fat in olive oil, which is oleic acid, is not the wonderful, marvelous savior life oil that some people make it out to be. It's a merely a mono unsaturated fat. It's the same monounsaturated fat, for instance, in avocados. Um, most of macadamia nut oil is, uh, monounsaturated fat. Uh, most of, um, even other nuts are good oils for you have a high mono unsaturated fats but I won't mention.

Dr. Gundry (34:41):

Well I will, canola oil. But what's important is not the omega-3 fats which are almost, non-existent, not the omega-6 fats, which are almost nonexistent, but the polyphenol content of the olive oil. And it's the polyphenols that actually give the health benefit to olive oil. So the more you think of olive oil as a delivery device for polyphenols, the more you begin to appreciate its benefit. And the more you find olive oils that are bitter, more bitter, more better. And we actually judge olive oils by their cough factor. If when you first taste the olive oil, it gets you coughing, that actually is the polyphenol content. So you really want, uh, an olive oil with a huge polyphenol content and Nuvo Olive Oil. The first pressing of olive oil in general has the highest of the polyphenol content. So don't be, don't be scared or, uh, sucked in by, "Well there's mono unsaturated fats and saturated fats."

Dr. Gundry (36:02):

It's the highest polyphenol oil there is. For instance, the polyphenol content at aliv, in olive oil is 10 times higher than in coconut oil. There are actually are polyphenols in coconut oil, but olive oil just blows everything else away. So that great question though. Okay. Time for the review of the week. This week's review comes from Dmariecal on iTunes who gave us a five-star review and wrote, "I learn something new every time I listen to Dr. Gundry, thank you. Keep doing what you do. I've never



felt better than I do now because of you.” Well, thanks for the kind words and the review. You know, each time you rate and review us on iTunes, it helps us reach a larger audience so we can continue our mission of transforming everyone’s health all across the globe. And I’m Dr. Gundry, and I’m always looking out for you. We’ll see you next week, and thanks for your kind comments.

Dr. Gundry (37:08):

Disclaimer. On the Dr. Gundry podcast, we provide a venue for discussion and the views expressed by my guests do not necessarily reflect my own. Thanks for joining me on this episode of the Dr. Gundry podcast. Before you go, I just wanted to remind you that you can find the show on iTunes, Google play, Stitcher, or wherever you get your podcasts. And if you want to watch each episode of the Dr. Gundry podcast, you can always find me on YouTube at [youtube.com/Dr. Gundry](https://youtube.com/Dr.Gundry). Because I’m Dr. Gundry, and I’m always looking out for you. **END**

Activity 2: Recall Information from the Podcast

- ▶ Work in cooperative groups (if you are in a classroom) or work with a family member or friend (if you are an individual learner) to discuss the podcast from Activity 1
- ▶ Make a list of:
 - Things that chickens eat
 - How food affects the eggs that chickens produce as well as the poultry we eat



Activity 3: Read a Recent Chicken Diet Article

Read this article and highlight sections specific to the diet of a chicken!

Why Keep Backyard Chickens?

If you don't already have a small flock of chickens, you are reading this article because you want to. Christine Heinrichs discusses the history and popularity of keeping backyard birds.

Chickens have always been part of rural and farm life. The past decade has brought them back to small-holders, hobby farmers and small, sustainability poultry producers. Although most of us live in cities, we still feel the attraction of the bucolic countryside.



Chickens are the easiest livestock to keep. They are remarkably adaptable. Through natural selection and selective breeding, distinctive breeds have emerged. Virtually every human culture has had some kind of domestic chickens. Our human fascination with chickens runs deep and primal. No wonder so many families are bringing chickens home.

Domestication of chickens probably began 8,000 years or more ago, when people in Asia noticed that it was easier to weave a cage and put some baby birds in it than try

to catch them or search for their nests.

The Red Junglefowl of India is the ancestor of our modern chickens. They're quick on the ground, clever about hiding their nests, and light enough to fly. Catching them or knocking them out of the trees with a slingshot must have taken exacting skills and a sharp eye.

Keeping chickens provided these early enthusiasts the opportunity to observe them. Roosters are natural fighters. Cockfighting became entertainment in some societies and took on more serious religious meaning in others.

Chickens are naturally social. They form flocks and organise themselves according to a dominance hierarchy, the pecking order. Hens develop alliances and loyalties between individuals, but social life is rarely without incident. An extra worm to a low-ranking hen can set off a squabble, or can improve her standing. Life is never boring in the chicken yard.

A particularly unassertive hen who was last at everything in our yard one day discovered a large, juicy Jerusalem cricket for herself. She snatched it up in an unaccustomed gesture of self-assertion and took off, with half a dozen hens in pursuit. They were outraged that she would presume to usurp this tasty delight for herself. Escaping, but unwilling to release her prize, she flapped and ran until she had sufficient leeway behind a bush to gobble her treat in hasty triumph.



After seeing her outwit her betters, I felt that perhaps her place at the bottom of the pecking order was not without its comforts.

Farm chickens

Chances are, you remember visiting a grandparent who kept chickens in the yard. You may have been frightened by a protective hen or an aggressive rooster, or you may recall the surprise of finding eggs. Until the middle of the 20th century, keeping a few chickens was common. Since everyone kept them, everyone knew about them: what they ate, when to expect eggs, what made them sick. The chickens lived in the yard and provided egg money for family support.



Traditional lore developed, some of it accurate and some more hopeful than useful. If you didn't know the answer to a question about your chickens, you could ask your neighbour or your mother or someone at church. Chickens were an integral part of the culture.

As people moved to cities and suburban developments, people lost those poultry handling and management skills. That knowledge slipped away, although it's invaluable to those keeping small flocks.

Owners have different expectations for their

flocks. Raising birds for meat is different from raising chickens for eggs or to show. They are all chickens, though, and many of the management practices are the same.

Small flock owners rarely see their birds as narrowly as simply food or only show. Utility values, egg laying and meat, are integral parts of traditional breeds. After all, that was why they were kept.

Small flock keepers naturally appreciate their chickens' beauty. They learn about breeds and the differences between a Leghorn and an English Game. They may start by raising birds for meat and then want to show the birds they are proud of. Showing is more than an opportunity to be recognised as the best. It is a chance to meet others of like interest and find new birds, new bloodlines, and share ideas.

People become farmers because of their desire to grow their own food, be self-sufficient, contribute to the local food economy and feed the spiritual needs that rural life can assuage. Sustainable, integrated systems include poultry as working contributors to farm ecology and production. They consume weed seeds, insects and green waste and produce high-nitrogen manure for fertiliser. Chickens are part of that life.

Backyard chickens

As chickens have become more popular, communities have found ways to make it legal to keep chickens. A certain prejudice against chickens, a whiff of class division, can trigger opposition. Most communities find some way to allow chickens in urban and suburban settings.

Scientific studies compared eggs from hens on pasture to those of battery cage



industrial hens. They established that eggs from chickens fed varied diets and allowed to range outdoors are more nutritious, with twice the vitamin E and better omega-3 fats. Nutritional value reflects what the hens are eating, something you can choose if you raise your own.



Having truly fresh eggs from chickens of your personal acquaintance is one of the reasons people want to keep their own chickens today. Like so many other home-raised products, the flavour really can't be compared to store-bought.

Gathering eggs can feel like Found Treasure. Every child I've ever seen delights in searching egg boxes and gathering eggs.

One friend's daughter was going through a particularly picky-eater stage. She refused to eat nearly everything. I gave her mother some eggs, and they passed her exacting demands. That kid made those fresh eggs her mainstay for some months, while she outgrew whatever it is that makes kids funny about food.

A dozen or fewer hens will provide any family and most of your neighbours with plenty of eggs. Sharing them with neighbours generates enormous good will. A sense of humour helps, too.

Small groups do better than one or two. Chickens are highly social and need each

other's companionship, although some singletons make do by making friends with the cat. Remember that chickens are subject to predation and even the most careful caretaker loses some chickens.

With a few more, you can have fresh meat as well. The accepted wisdom is that if you consider your birds meat, you will not want to name them. You will likely develop some favourites who will have names and be around for along time anyway, perhaps even stay on as retirees after they aren't laying many eggs any more. If you are serious about breeding, however, you will be culling your flock and filling your freezer and pot with chicken tasty enough to spoil your palate for fast-food fried chicken.

Having your own flock of chickens gives you a strong foundation of self-reliance. You have your own steady supply of eggs and meat. They are Everyman's Livestock, a lot easier to keep than cattle or pigs.

Poultry is a more accessible agricultural project than beef or swine for youngsters. Parents without farm backgrounds are less intimidated by chickens. Many disabilities or physical limitations are no barrier to keeping chickens.

Quality of life

People like chickens. When I first started keeping a few in my suburban back yard in San Jose, California, heartland of Silicon Valley, the first thing many visitors said was a wistful, "I always wanted to have chickens." When one chick unexpectedly grew up to crow, neighbours mentioned how charming it was to hear the sounds of the countryside.

Chickens attract the eye as well as the



palate. Chickens are naturally pleasant to see. Some breeds are especially beautiful and have been bred specifically as ornamental birds. Poultry can decorate your estate, whether palatial or rustic.

They are excellent interpretive birds. Historically accurate flocks are kept at farm museums.

Chickens can be good therapy birds. Poultry advocate Pat Foreman brings her Buff Orpington Oprah Henfry to nursing homes, where she sits with the residents.

They enjoy her peaceful company and soft feathers.

Chicken flock owners are widely diverse. Some keep a few and make pets of them. They aren't cats or dogs, but can be delightfully personable. Their individuality adds the same sparkle to our lives that other animal companions do.

Those with more businesslike reasons for keeping chickens nevertheless enjoy their company and take pride in raising healthy, vigorous, beautiful chickens. They contribute to local economies and offer alternatives to industrialised agriculture.

The diversity of chickens speaks to the diversity of people. They touch us in profound ways.

Activity 4: Topic Discussion

Have a discussion with your classmates or a friend or family member (depending on your learning environment) surrounding these three main ideas:

- ▶ Discuss some misconceptions you may have had prior to the reading and the podcast about the diet of the chicken
- ▶ List and describe some of the small insects and critters you learned about that make up the diet of the chicken. Discuss in your group specifically what surprised you
- ▶ Making direct reference to the podcast and the article, discuss what you learned about how the chickens' diet affects the products we eat from the chicken (eggs and meat)

Post-Assessment

Using the information gained from the podcast, the article, and the discussion:

- ▶ Write a one-page summary of what you learned about a chickens' diet and how it affects humans