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# The Solari Report

**May 27, 2021**

**Solari Food Series:  
Homesteading Part II  
with  
John Moody**



**Pete Kennedy:** This is Part II of the Solari Food Series audiocast on Homesteading with John Moody. We are going to start off this part by talking about livestock on the homestead. John, let's begin with poultry – specifically chickens.

What kind of infrastructure do you need? What are the advantages and disadvantages of raising chicken?

**John Moody:** Chicken is probably the most popular self-sufficiency homestead – whether urban or rural – animal that you will find in the country. It's really funny because two-legged people love a chicken dinner, but every other two- and four-legged thing under the sun also loves a chicken dinner.

While I love chickens and I have a bunch of them in my bathroom at the moment (that hopefully later this morning will finally be going outside), they are a dumb animal. So to talk about the drawbacks, the biggest drawback is that chickens are dumb. If there is a way for them to die, they will find it. Especially when you are first starting off with chickens.

This is why I tell people that if you are going to do meat birds, don't get 100 the first time you do meat birds. By the time you get to butchering, you are going to have about 20 meat birds left, and you are going to be paying \$10 a pound for your chicken.

There are so many things that can go wrong with chickens. They are dumb, and they just have a lot of idiosyncrasies. So learn on a small number to begin with. Get yourself half a dozen laying chickens or a dozen laying chickens. If you are going to do some meat birds, try your hand at doing 20 – not 100 or 200 – and get it under your belt.

Once you learn and get used to working with them, they are low upfront investments. They are super-easy to source. There are hatcheries all over the place. There are people all over where I live who sell chickens. It's easy to get your hands on them.

Especially with laying chickens, there are few things like walking outside at lunchtime and picking up a fresh two dozen eggs 50 feet from your back door. So in terms of food security, laying hens are excellent. Last year when so much madness was going on, I don't know anybody who regretted having some laying hens and a garden with some season extensions set up because you have a relatively constant food supply to stretch what you already have on hand.

In terms of infrastructure that you need for chickens, chickens need a home, and you can do a permanent home, which is usually called a 'coop', or you can do a moveable home for chickens, which is usually called a 'tractor'. Each have their own benefits and drawbacks, and each have their own considerations for how you build and design them – especially if you are doing chickens in a tractor. If you are doing layers, you might want to be able to go into the tractor. Laying chickens don't always lay in their laying boxes, and you will have to

build a structure that you can physically get into to collect any random eggs that they didn't put where they belong, where you might not have to do that with meat chickens.

One thing to consider is with your chickens, anything that you build for layers, especially in terms of the tractor side, you can use for meat birds. But sometimes infrastructure that you use for meat birds isn't compatible with doing layers later. So if you are going to build something and you think that you may want to use it both directions, build it for layers, and you will be able to use it for meat birds, but maybe not vice-versa.

You can do tractors. Tractors let you move the animals around. This is great. There are three big risks with tractors. First of all, because it is portable, it is prone to wind and weather. So you have to make sure that your design works for the wind and weather where you live. I had some friends build some Joel Salatin style tractors, but they built them out of PVC instead of out of 2x4s or some other wood framing. So instead of doing wood framing, they wanted to make it lighter because a lot of chicken tractors are heavy. If it's a wife or kids trying to move it, they think, "I'll just make this lighter."

So they made two or three of these PVC versions of the tractor, and then a windstorm came through and it ripped the tractor right off of the chickens. The tractor became a kite or a metal airplane.

Especially with tractors you really want to go with a design that can handle wind and weather. Any time severe inclement weather is coming through your area, make sure that you already have on hand tie-downs. They sell these really cool ground stakes. It's like an auger with a hook that you can drive the ground stake into the ground and then hook a rope or a clip or a carabiner to it.

I recommend if you are running tractors and you are in an especially wind-prone area, have things already on hand so if really bad weather comes through, you can go out and secure things.

This is also a common mistake that I see around homesteads generally. We are building things, so there is sheet metal laying here and there is this laying there, and it's not a problem until it is a problem, like when a really bad storm comes through. Then all of a sudden things are just flying everywhere and destroying stuff.

It's a good general rule of thumb around your homestead to make sure that you keep things tidy and make sure that you keep things secure. Bad weather never comes when you're ready for it. So you always want to be ready for it.

**Kennedy:** What about as far as feed? How do you minimize expenses while still producing quality eggs and meat birds as far as feed goes?

**Moody:** This is my next book, Pete.

**Kennedy:** I'll give you an advance plug.

**Moody:** The book I'm writing this summer is called *Beyond the Bag*. It's how to get free of the feed store.

Obviously the first strategy with any animal is to provide access to an environment where they can get their own feed from the environment. So one of the drawbacks to a stationary chicken coop is within a few days to a few weeks the chickens are going to completely exhaust any and all food supply right around the coop.

The one reason why tractors became popular is because it allowed you to provide protection for the animals while constantly moving them to fresh food. This is one reason why tractors can be a benefit, but there are ways that you can do coops and use a clock system with the coop in the center, and use ElectroNet fencing to give them alleys of feed that you rotate around the clock. There are ways to do it with a coop. A coop doesn't mean that they won't have access; it just means that you have to be more creative than a tractor, which increases your labor, but it does give them more steady access.

There are a couple of major studies done on both chickens and on pigs. Basically an average environment can provide roughly 30% of the nutrition a chicken needs. So if you just have them all cooped up, it's 100% feed that you are going to have to buy and give them. If you have them out on pasture or pasture woodland, an average pasture woodland is going to cut your feed by 30% for chickens. It is going to cut your feed by 50% for hogs because hogs are much better and more aggressive foragers, and there is a wider variety of things that they can access and eat. So that is one thing that you can do. Just get them back into being allowed access to their natural environment.

The next thing that you can do is you can, over time, improve the feed value of your natural environment. So all of us are basically working on degraded ecosystems. The last 60-70 years of property development, farming, and so much in America has substantially degraded ecosystems in the amount of biomass and food value that they could produce.

So you can plant elderberries, you can plant hazelnuts, and you can plant fruit trees, and you can plant comfrey. There is a farmer who I am friends with down in Tennessee, and he cut his meat chicken bird feed bill by 20% and he improved their weight gain by 10% by basically increasing the amount of clover in his pastures by overseeding and seed drilling and doing other things.

If you really want to start to make a dent both in the cost of keeping animals, but you also really want to improve the nutrient density of the final food product they create, then you want to start to rebuild the ecosystem that both you and the animals depend on. That

involves especially rebuilding a perennial permaculture that provides high value food for large portions of the year.

Some of the best pork in the world primarily eats nuts and acorns, and they move through savanna-like forests. You can do that, too. Much of America is similar and has the kind of ecosystem for that. Not only would the pigs benefit, but the ecosystems would benefit.

One thing that I realized years and years ago – because I used to have to drive down to Asheville quite often to speak at conferences – was when you drive through Kentucky and down to Asheville, you see the forests. They have all of this dense, nasty undergrowth. You think, “How did anyone ever move around this country?”

These forest undergrowths are so jagged and overrun. I had to realize after I spent time on a number of good farms that back when we had all of the bison and back when we had all of the pigs, you didn’t have these degraded jungle forest landscapes because these animals kept those understories clean, and it produced food.

You could turn these brushy, marginal areas of your properties into really productive ecosystems, and animals could play a key part in doing that. Then they produce really yummy food, too.

So improve your ecosystems. For our animals, there are a couple of grocery stores up in Louisville where we will get high value feed from, especially when we have pigs. So there are a couple of organic grocery stores where we take all of their expired organic dairy products and stuff. So there are always options like that for finding feed for animals, too.

**Kennedy:** I knew this one farmer where I grew up. Unfortunately there was a Hostess cupcake factory near there, so those pigs didn’t get the best diet.

**Moody:** That is an important thing to note when you are looking for food. I know some farmers who feed their animals absolute garbage to save on feed. They feed them castoffs from the bagel factory and castoffs from the Hostess factory. It becomes a consideration when sourcing. Pure white sugar and white flour isn’t good for you, and it’s not good for the animals.

**Kennedy:** It comes out in the eating. Right.

Getting back to chicken, what about with the urban farmers? Say you have an eighth of an acre or a quarter of an acre lot. Do you have any formula for how many chickens someone should be raising – layers or meat birds – on a limited area of land?

**Moody:** You can still do up to a dozen or so layers. The big thing in any environment

when you are raising animals is that no creature wants to stay in a place where it leaves its excrement. Animals eat, and they move. This is how nature works. Animals eat, and they move. They don't leave their waste where they live.

So if you have chickens in a small area, they obviously can't eat and move. So you have to mimic moving them through using very, very deep bedding wherever you keep them. This is usually the biggest mistake people make: They don't have enough deep bedding for their animals.

Our chicken coop has roughly two feet of bedding in the bottom. That is two full feet of high-carbon woodchips, sawdust, and similar almost pure carbon materials that allow the animals' waste to basically be absorbed and dealt with very, very quickly. One reason for this is so that you don't lose the nutritional value of all of that – the fertility. The second reason for that is so that you are not creating health issues in your animals.

If you have a small space, you can still keep both meat birds and layers. If you are in a small space, instead of doing meat chickens, I would probably do quail as a much, much better urban poultry option for meat. They are also great for eggs.

I would do quail over chickens for meat if I was in a very dense, urban area and was really limited on space. Either way, with any animal, if you have limited space, you need to make sure that you have a consistent stream of carbon to marry to their fertility that they are dropping – to capture that and deal with it, and also not to make your neighbors mad because of smells.

**Kennedy:** What about some of the other poultry? Can you comment briefly on turkey, ducks, and geese?

**Moody:** We have raised turkey, and they are great. If you've ever dealt with an aggressive rooster, once you've dealt with an aggressive turkey, you will no longer be afraid of aggressive roosters.

Turkey are great. Turkey take about twice as long to butcher as a chicken for three to five times more meat. So if you are not a fan of butchering, turkeys are way more labor efficient at the end of life. Turkeys can forage 50-60% of their feed from the surrounding ecosystem if they have access as opposed to chickens generally topping about 20-30%. So turkeys are really efficient foragers – especially compared to chickens.

Ducks are awesome if you have a pond. If you don't have a pond for them, I do see people do backyard kiddie pools for ducks, but a pond is what can create a lot of the food a duck eats. It's hard to replicate a pond if you don't have a pond. Ducks are fun to raise.

The one major concern for all poultry is everything likes to eat them, except for geese

which are often used as guard animals for other poultry. “Geese don’t take no crap,” so geese tend to scare off a lot of other animals.

No matter what poultry you are dealing with, you have to prioritize predator control. This is a funny story from years ago. For a time we had chickens in our barn. I reinforced our barn to where it looked like something out of *The Walking Dead*. It just looked like it was heavily fortified with barbed wire walls and everything possible to keep predators from bothering our chickens in the barn.

We went out one morning, and there were a bunch of dead chickens. I spent hours trying to figure out how a predator breached the defenses to get into the chicken area in the barn. I think it was Abby or Caleb who came and got me. They took me to the back side of the barn. Our barn, at its peak, is probably 18 feet tall, so it’s a pretty structure at the peak of the barn. They showed me a set of footprints where a raccoon or a possum had braced itself between a 6x6 upright. It had climbed up using the upright and the metal, and had climbed up to the roof ridge. Then it had hung on the little jagged edge of metal to get all the way to the crown of the roof at the peak, and then it had pushed itself through and bent the metal to get to the chickens.

**Kennedy:** Wow!

**Moody:** So you just have to realize that predators are tenacious. They have all night long while you are sleeping to figure out that one small design flaw in your coop or your tractor. So do not skimp on the security for your animals. This is why both for your personal security and your animals’ security investing in a good dog is totally worth it – especially if you are raising any number of animals. A good livestock guardian dog will pay for itself in a pretty short period of time.

**Kennedy:** Let’s go on. I don’t think that this is your favorite animal, but it is becoming more popular in urban farming. What about goats?

**Moody:** Goats are fun. Goats have a reputation for a good reason: They are very, very hard to contain. But they are a great animal if you can invest in the fencing. We’ve always had a policy on the farm that any animal that shows undesirable attitude becomes dinner. Immediately. Whether it’s a chicken or goats – because they are a bit more ornery – you have to have very good fencing for them. You especially want to train them in a way that encourages good behavior. Don’t ever tolerate animals in your herd – especially your goat or your cow or other larger animal herds – that show bad behavior. This is also true of pigs.

When we are working in the pig yard, we will often keep a stick or something with us. If a pig nips at our boots, he immediately gets a good whack on the snout.

You might think, “Oh, it’s really cute – this 40-pound pig nipping at my boots when I’m working in the pig yard.” Then when it’s a 240-pound pig, it’s a real danger to you or other people. So whenever you are working with animals, it is very similar to training children. You don’t want to reward habits that are later going to come back and bit you.

**Kennedy:** What about feed as far as dairy goats and meat goats?

**Moody:** Obviously goats are a browser animal. One of the reasons why they are popular in urban areas is because if you can move them around to people’s properties, a lot of people are now using goats to clear areas at airports, and to clear urban parks and other areas of unwanted brush and other build-up of stuff.

The big thing to realize with these different animals is kind of like the ecological niche they’ve earned. Goats are a browsing animal. Chickens were originally also like a woodland edge animal. That is kind-of what a goat is. It was made to live both in pasture and woodland, but especially that in-between area where so much different stuff tends to grow.

For goats, the more kind of browse feeding you can offer, the better off they will do, and the more you will be able to save on your feed bill. What else is really cool is you can use goats to do some really nifty things like Christmas trees. If they haven’t had their trunks painted, I know a number of farmers who – both to provide food for their goats and to help with parasite control – will collect Christmas trees after Christmas every year. The goats will eat all of the pine needles and branches on the Christmas tree, and all of that tannin acts as a natural de-wormer for the goats.

A lot of animals are wired to self-medicate to control parasites or other problems that we now control through giving them pharmaceuticals.

For all animal feed, if you can get feed directly from a neighbor, it is way better than buying feed off the shelf in a store where who knows how old it is and how long it’s been sitting.

If you want to mix your own feed, laying chickens and goats are a good place to start if you want to do your own feed for the animals. If you want to buy 50-pound bags of various grains, look up some recipes, and buy whatever amendment or fortifiers are recommended for those animals, and make your own. You can buy whole grains through numerous larger companies. I think we talked about this the last time. You don’t have to get human-grade grain; you can get animal feed grade grain because they are a lot less expensive, and you can make your own feed if you want.

I know a lot of people who make their own goat feed. The goats just need it cracked. They don’t need it as ground up or pelletized like poultry sometimes benefit from.

**Kennedy:** What about space for goats in urban areas? What if you have a quarter-acre or a

half-acre lot? What are you looking at?

**Moody:** A quarter-acre is 11,000 square feet. I would say that if you have a couple of goats, they are going to need at least 500-600 of that, and maybe a little bit more if possible. Again, goats are energetic creatures.

The biggest challenge with goats, especially keeping them in an urban area, is the problem of parasites. One thing you are going to have to do is obviously have lots and lots of bedding for the goats. I know a lot of people who struggle with parasite issues with goats – even when they are doing intensive rotational grazing of the goats. Goats and parasites are a big problem.

You want to go with parasite-resistant varieties of goats. Animals tend to pick up parasites by grazing too low to the ground. Parasites get dropped in manure, the pupae hatch on the ground, and they will climb up on the long-hanging boughs on the ground, waiting for animals to come along and eat. That is how the animal gets re-inoculated with more parasites.

So keeping the animals eating higher and keeping them moving helps eliminate that, but it is very hard to keep goats in an urban environment unless you are really going to stay on top of fecal examination from parasites and proper treatment to make sure that the parasite load doesn't get out of hand. Parasites are just a crazy topic.

**Kennedy:** What about sheep on the regular homestead?

**Moody:** I love sheep! Sheep are my favorite animal. I love lamb, I love eating lamb, I love petting lamb, and I love sleeping on a wool pillow. I love everything about sheep.

They are like goats, but just not as ornery. They are good browsers. They are a bit more pasture than browse, although they will browse. They generally still face some of the same parasite issues as goats, but not quite as bad. But they are much easier to fence and much more docile to work with. I really like lamb, and they are easy to butcher.

There is butchering poultry animals and rabbit. Butchering these smaller animals is fairly easy once you've learned. When you step up to mid-sized animals, pigs are the more difficult if not the most difficult of the mid-sized animals to butcher yourself whereas lamb and goat are much easier to butcher. A full-sized lamb is usually 120 to 140 pounds, depending on the breed. Sometimes it might be a little bit closer to 100. So it's pretty easy to handle 100- to 120-pound animal for butchering. It's not so easy to handle a 200-300 pound pig.

**Kennedy:** Right, and the pig is like a linebacker.

Are the sheep as hardy as goats during the winter? Isn't there a higher mortality rate?

**Moody:** It depends on your breed, and it depends on your nutrition program. I know people who keep sheep all the way up in Canada and have little to no mortality, but they have a breed that is appropriate for their climate, and they make sure that the animal's nutrition and feed is on point.

A lot of people have wintertime mortality of animals because their animals are going into the winter not sufficiently beefed up for winter. Then they are putting them in inappropriate winter housing, and then their food quality declines even further in the winter. Then they say, "Oh, now all of my animals are dying. What gives?"

I say, "Of course! Your animals had poor nutrition all year long, and then they have even poorer nutrition in the stressful time of winter, and on top of that you have bad housing for them."

**Kennedy:** Something that you also recommend is considering butchering most of your animals before the winter gets there to minimize having to deal with that kind of thing, right?

**Moody:** Exactly. I don't carry pigs through the winter. Historically the only animals you would carry through winter were breeding stock or, for some animals that are two years to butchering, you would carry the next year's harvestable stuff to be harvested the following fall. There is a reason why historically everybody after Thanksgiving would butcher off their pigs. This is why you would have a Christmas ham. A lot of these traditions harken back to lost wisdom.

In the wintertime, you are basically feeding to maintain your animal's condition. Very very few animals, especially ones who get as far north as Kentucky or farther north, are going to be able to gain weight through the winter. They have to spend all of their energy just staying warm and staying healthy. So why keep an animal for four or five months of winter when all of that feed and all of that cost of feed (and feed is usually your biggest single cost in raising an animal) is usually 30, 40, or 50% of your cost to raise an animal. You are going to feed an animal four to five months for no final benefit at butchering time. It just doesn't make a whole lot of sense to me.

So I do agree that you should butcher off animals in the late fall or early winter, keep your breeding stock if you are a person who is breeding some of your own animals, and then let them make babies and have more animals next year. Wash, rinse, and repeat.

**Kennedy:** Let's get to some of the bigger animals now. With the pigs, what are people

looking at as far as infrastructure in raising pigs?

**Moody:** There are some smaller breeds of pigs that you can raise, like American Guinea Hogs. I'm trying to remember some of the other smaller breeds, but there are breeds out there that get to butchering size at about 100 to 150 pounds rather than at 200 to 300 or even 350 pounds. Those are great. A lot of those breeds are also a lot more docile. They are wonderful to work with in a smaller environment or if you have a lot of small kids.

I have friends who have raised the American Guinea Hogs in pig tractors. Again, they are very docile and they don't try to root their way out of the tractor, and they are really happy to browse and graze over a good pasture.

Larger pigs, kind of like goats, the biggest challenge with keeping pigs is the fencing. Harry Houdini learned everything he knew from a pig. Pigs are strong, pigs are smart, and pigs are persistent. So you really want to make sure your fencing is completely on point if you have pigs.

One big consideration with keeping pigs, especially if you are keeping them on something that is more like pasture, is they have to be constantly moved or they will severely degrade the ecosystem. Pigs are a high-impact animal in an ecosystem. You want to hit a place with the pigs, and then you want to move them on.

Obviously you can also raise pigs in a pig paddock. We raised pigs for a number of years on a giant compost field. Pigs have been raised this way for a very long time where pigs will be kept in a smaller area, but because pigs can make the most use of what humans create, in the south pigs were often used to clean up sweet potato and peanut foods. In the northeast pigs were used to deal with whey from cheese-making and along the Great Lakes like Wisconsin, and they were also used for all of the waste of orchards.

Pigs are amazing because they can take a waste stream, and they can turn it into bacon. What other superpower do you need to be appreciated?

You can keep pigs in a smaller area, but just like I said earlier, with keeping animals stationary, you need a ton of bedding. This is especially true of pigs. Our pig paddock generally has three feet of bedding for the pigs to root around in and play in.

You can take a lot of food to the pigs, even though they are super-efficient at foraging for their own. If you are in a small amount of space, you can raise pigs on a pig paddock and take them your garden waste. You can take them all sorts of other stuff.

**Kennedy:** What is the conversion? You were talking about the Guinea Hogs before. You've got a 150-pound Guinea Hog. What is the typical conversion in the meat? How much meat would you get out of that animal?

**Moody:** Say you had a 150-pound Guinea Hog – and I’m wondering if they even get that big. I think that you can make a Guinea Hog get that big, but I think it’s usually closer to about 120 pounds. This is general rule on most pigs, but this also depends on what parts of the animals you eat and use. Our ancestors on something like a Guinea Hog probably got close to 70% utilization as food.

**Kennedy:** That is eating everything but the squeal of the hog then, right?

**Moody:** Yes. They ate the trotters, the feet, and they would use the tail, too. Headcheese was from the animal. There were very few parts of animals that our ancestors did not eat or otherwise use.

For modern people on a pig, you are probably looking at more like 50-60%. This also depends on if you are doing things bone-in or boneless.

When people are buying meat from a local farmer, oftentimes they get confused. They don’t understand that you can have a T-bone steak or you can have sirloin and porterhouse (the other two sides of the T-bone). They will ask, “Why can’t I have it all?”

This is true of pigs. If you want 100 pounds of sausage from your pig, they are going to turn the hams and shoulder into sausage and not into hams and a picnic roast or shoulders and stuff.

The way that you butcher animals really impacts your final yield weight-wise, especially if you are going for a lot of boneless cuts or a lot of sausage and other stuff that is also boneless.

**Kennedy:** Let’s get to the biggest animal on the homestead, the cow. What kind of infrastructure are you looking at for that animal?

**Moody:** it depends on if you are doing meat cows or if you are doing dairy. It’s great to have a loafing area for any of these bigger animals. One of the few things that we have built on the farm over the years – because I found it so useful – was a loafing structure. On the back of our barn there is a covered 20x30’ area that we can fence and configure, but it gives us a place during inclement weather to bring animals if we have severe storms coming through or high winds coming through. It gives us a place to put animals, it gives us a place to unload animals, and it gives us a place to load animals.

This is really, really important, especially for larger animals, that you have a loading and unloading area set up that is easily accessible by a truck with a livestock trailer on the back. We use cattle panels to configure the area how we need it for whatever we are loading or

unloading or whatever we are doing.

A loafing area is great. For a dairy cow you obviously need milking equipment or a milking parlor. I know some people who milk their dairy cow out in the field, but that only works during better weather. You still have times of snow, and you still have times of rain where the cow still needs to be milked. So you still want to make sure that you have a milking area to be able to take care of the animal.

A big thing with all of these larger animals is you need storage for hay. For your goats, for your lamb, for your cows, and even pigs will need hay if it's good quality hay. If hay is really cheap in your area, you can feed your pigs round bales of hay. But you need to store the hay.

Pete, have you ever been out driving through the countryside and you see all these round bales of hay just sitting out in the fields or stacked under the eaves of woods?

**Kennedy:** Sure.

**Moody:** There was a study done by the University of Missouri – and this just drives me crazy – basically the average bale of hay loses 30-40% of its feed value because it sits out in the weather. The top of the bale crusts over from sitting in the sun and getting baked, but the bottom of the bale sucks up water. So the top of your bale is all nasty and crusty, and the bottom of your bale is all mopey and mopy and moldy. Then you're going to feed this to your animals.

If you are going to buy hay, I always tell people to buy your hay fresh off the field. As soon as the farmer has baled it, once it has had a couple of days to dry, buy it straight off of the field. Buy yourself a hay moisture meter so that you can know when it's safe to put into your barn. Hay fires are one of the most common ways people burn down their barns. Then store your hay properly.

Again, anything that is set on the ground is going to want to pull moisture from the ground up into itself. This drives me nuts when I see firewood piled all over the ground. The statistics of firewood are really similar to hay. An average person, if you are burning wet firewood, you are losing 30-40% of the energy to burning off all of that moisture. If you improperly store your hay, you are losing 30-40% of the feed value.

This is why people are always boggled at Joel Salatin's farm. They have such a massive hay storage area, but Joel understands the science of it. He basically has 40% more hay than someone else because the hay retains its value. It's not just rotting in the field and becoming moldy and losing all of that nutritional value.

Make sure that you have sufficient space to properly store hay and bedding for your

animals. A lot of people don't understand why barns were so big. They don't understand how much bedding and how much feed animals need, and that that bedding and feed needs to stay dry.

A lot of people put their animals in the barns where the hay and other things used to be stored.

**Kennedy:** Winding up on the livestock, regarding the relationship with the veterinarian, how much of your own care have you been able to do? When do you bring a veterinarian in?

**Moody:** The first thing is with some animals, the call of a veterinarian is very rarely going to be worth keeping the animal alive. People don't like to hear this, but with your ducks, with your chickens, and with quail and with rabbits, a simple trip to a veterinarian in most of the country is probably \$100 to \$150.

A farm call is pretty much always that to have a vet come out to your farm and just check on an animal. So vets are expensive. This is one reason why I tell people upfront to invest, invest, invest in making sure that your animals will be healthy. Don't skimp on feed, don't skimp on bedding, and don't skimp on making safe, clean areas for your animals to be where they're not going to get needlessly hurt or needlessly cut. You will save a bundle of money.

For a lot of animals, if they are small, it's not worth calling a vet to save a chicken. Put the chicken down and compost it. It's just not worth it.

That is also why it's nice to raise smaller animals. If you have to put one down, you are losing \$5 or \$10 instead of losing a 500-pound cow. You're not losing thousands of dollars of value.

With your larger animals, invest, invest, invest in proper supplements for their diet. Part of keeping animals is knowing your areas' soil type and knowing how that will impact what supplements your animals' needs.

For instance, our farm sits on top of calcitic limestone, which is really high in calcium. That means that our animals need more magnesium supplemented into their diet, and they need less calcium. Obviously our pastures need more magnesium because the limestone is constantly dissolving and adding calcium to the environment.

For small cuts and other things I use iodine. A lot of the same medical supplies that we use for me and the kids are what we use on animals.

I had one of these new pigs we got a few weeks ago, and when we were getting him into the

pig paddock he scratched himself and gave himself a long scratch on his flank along the side of the cattle panel. He was unhappy that he was going into a new place that he doesn't know. So he was fighting, and he scratched himself along the cattle panel.

I just made up some iodine mixture, and when he was eating, I just hosed the side of his flank down with iodine. Then you just keep an eye on things.

It's harder and harder now to get antibiotics, especially in some states, if your animal really needs that. You can order those online sometimes, but they are definitely making it harder for you to be your own vet. They are making it harder for you to access Ivermectin or other common medications if you do have a parasite issue or an infection or whatnot.

The other thing that you absolutely have to have for all animals if you have multiples is an area to quarantine an injured or sick animal. This is another thing that people often don't have available.

You need to have a place where you can separate a sick or injured animal from the others. It's basically a medical ward. It can be a single bay in the barn or somewhere that when an animal is hurt or injured, you can separate them from the other ones so that it doesn't spread or so that they don't beat up the injured animals, and the animal can still get feed and water until you are able to tend to things or get veterinary attention.

**Kennedy:** The next topic I want to bring up is something else that seems to be growing in interest, which is beekeeping. What is your advice for someone considering getting into that?

**Moody:** Beekeeping is great. The first thing with beekeeping is getting ready to have your heart broken. Pretty much every beekeeper I know loses 30-70% of their hives now every year. So the Varroa mite issue and a lot of these other pressures on bees have become a substantial problem.

I think that there was a study that showed that the spraying we are doing is actually worse in urban environments. There are a lot of these people who say, "We will keep bees in urban environments so they are not exposed to the chemicals of industrial agriculture," but the thing is that industrial agriculture usually only sprays once or twice a year. They apply a pre-planting herbicide, and then they might spray one time with a fungicide or something.

In urban environments, people are using Scott's Lawn Care and RoundUp and all of these other companies. They are spraying crap all the time in urban environments, and your neighbors are spraying crap all the time. They are spraying pyrethrum and nicotine. So bees in urban environments often can face more chemical exposure pressure than bees in rural or semi-urban environments.

These are things that data shows that can be surprising.

Bees are great. They are one of those things that you tend not to do because it makes money, but that you will do because you will enjoy it. At a small scale, the amount of equipment that you need for keeping bees is a lot. You need hives and you need a beekeeper's suit and you need extractor equipment and pressing equipment and all of this kind of stuff. This is why most people who keep bees end up keeping a fair number of bees. It's just more efficient to be working with 10-20 hives than just a couple of hives.

The other thing that I will say is that if you are a beekeeper, you really want to own an EpiPen because you never know when somebody is going to come visit you who doesn't realize they have a bee allergy, and then they get stung. What are you going to do?

**Kennedy:** We've got a lot of stuff still to cover. Let's go back to a key part of the infrastructure and a key part of the homestead, which is water. What is your advice on water? What are some things to look out for as someone who has well water on the farm?

**Moody:** Somebody about 15 miles from us and their family were recently diagnosed with cancer. When they tested the well water, they found uranium in the well water. Most likely it is going to be an interesting few years as the lawsuits unfold. The reason is because Fort Knox, the military base not far from us, may have buried waste over in that area that now contaminated the water table underneath some farms. Now there is uranium-tainted well water.

The first thing with well water is that you have got to test it.

**Kennedy:** What kind of test, John? What are they looking for in the tests?

**Moody:** A basic test will normally test some mineral levels, it will test for the presence of bacteria and whatnot, and the bacterial load in the well water.

I wrote an article for Weston A. Price that people can go look at that talks about this. It's been a few years.

A lot of the tests won't test for specific pesticides; they will just test for the presence of pesticides. The tests will give you a 'yes' or 'no' that you have pesticide contamination in your water.

**Kennedy:** It won't give you the level?

**Moody:** Correct. It won't give you the level generally and it won't tell you which one. There are some cheap tests that you can order online, and they usually have 10-12 things

that they test for. That is a good quick one to do. You can also reach out to your county's environmental office and ask them for any water surveillance they've done. You could also ask around to other people in your area if they have done testing to see what their results came back with.

The home tests are not that fabulous. They are an okay start, but then when you move up from the home testing on well water, a basic lab test of well water – especially if you are wanting to test for herbicides and pesticides and other things – is usually going to run you \$300 to \$600. So it's going to be a chunk of change to get a larger panel done on your well water that is actually going to give you useful information.

You want to know if you really need to do that. Obviously if you are in an area where you are surrounded by a lot of heavy agriculture or a heavy industry, it may be worth doing that, depending on the water table and a bunch of other factors.

**Kennedy:** What about the hard water that you can get with wells? How does that develop, and what can you do about it?

**Moody:** We have really hard water. Our water is so hard that it makes the Man of Steel seem soft and it makes Ironman jealous. You can buy a handheld tool called a TDS meter which is really great. It's another really useful tool to have on hand. I use it for other things beyond water. That will let you know how hard your water is. Our water tends to be over 400 on the TDS parts per million, which is really hard water.

There isn't a whole lot that you can do other than install a softening setup or move off of well water. You can use your well water as a back-up. You can do roof catchment or some other approach.

I know if you have really hard water, rain water is really soft because there should be very little mineral in rain water. So some people will cut their rain water with their well water half and half, and then they end up with a good final TDS where the water is not so soft and it's not so hard.

If you are on hard water and you don't have a softener, you just have to plan for additional plumbing expenses every four to five years because your plumbing fixtures and other things are going to need to be pulled and cleaned of the buildup or replaced.

**Kennedy:** What about for the urban homesteader? You are dealing with municipal water and all of the fluoridation and whatever else comes with it. What is your advice there on making the best of a not great situation?

**Moody:** In urban areas, especially if you have a metal roof on your house or a metal roof

on your garage, catch rain water. Reduce your reliance on municipal water. The big thing, too, in an urban area is that they hit you coming and they hit you going. If you use water generally from the municipal supply for your animals or for your garden, you get hit with the sewer fees on the back side in some areas.

Rain water that you catch can really save you some money, and it's much better quality water. I am always a fan of doing rain catchment. When I'm doing consulting with people, I always ask, "How long until you replace your roof? When you replace your roof, move over to a metal roof. Get good gutters. Build in a flush bypass. Now you're ready to go, and you can catch water off your own roof."

A typical house in America in a typical climate produces 30,000 gallons of runoff water per year off the roof. It's a tremendous amount of water.

**Kennedy:** Could you talk about cisterns and storage and how you go about that on an urban farm and elsewhere?

**Moody:** Once upon a time in some parts of the country a barn was never built that didn't have a cistern put at one corner. I remember a friend bought a house in old Louisville, and when he was doing some work in the backyard he fell down a hole. He discovered that he had a cistern in his backyard. A lot of the original houses had their own cisterns. They were beautiful brick-laid cisterns that were 12 feet deep and gorgeous.

Cisterns are awesome. They are well worth integrating into a barn. If you are going to build a barn, if you are going to build a house, build in water storage so that you can have a place to put that roof water. Build it twice as big as you think you'll need it.

**Kennedy:** There was actually a case in Oregon where someone got arrested for rain catchment, wasn't there?

**Moody:** I think it was Colorado. It's hard to say. A couple of those western states which we know are run by imbeciles have these laws.

**Kennedy:** This is an unbelievable law.

**Moody:** It shows the good intention fallacy where the idea was to stop someone from putting in a 3 million water acre pond. Instead, it is used to keep your grandma from catching the water off her own roof to water her garden and petunias.

**Kennedy:** It seems like if that is their worry – for the 3 million water acre pond – there are other ways to go about it that might be more effective and less intrusive.

**Moody:** It's just madness. It's such madness.

In some parts of the country you have legal issues about rain catchment. This is a big thing if you are one of these people who is looking to get out of an urban area, especially with all of the nonsense we've seen in the last few weeks with the police and all this other craziness and the increasing crime rates in the cities, people are looking to get out of the city and go find a property. Look into water rights and water rules. They are massive.

I know people who are leaving California or leaving Colorado, and they went to Arizona or some other state, and they bought a property only to realize that they have no water, and their property didn't come with any water rights. So they can't access the water underneath the property because of the way the water rights are set up and tied to the properties.

Really know what you are getting into because, as Pete and I were talking about, there are places in the country where you cannot catch a snowflake without risking going to jail. You can't even keep the rain that falls on your own land.

**Kennedy:** What about drought? How have you dealt with drought when you've had a spell on your homestead in Kentucky?

**Moody:** We have been through a number of droughts. There are a number of things with this. The first thing is you need to design your property to not get rid of water when you have it. This is one reason why I'm a big fan of rain catchment. Usually you get more rain at a time than you actually need. Very few of us live in the Shire where we get a couple of nice rains every few days that are exactly half an inch and exactly what the plants need for the next several days.

Normally we will get three inches of rain in a single day, and then we might not get rain again for a few weeks.

Look all around you and see how people design their landscapes. How do farmers all over southern Indiana and Kentucky deal with the excess water from later winter and early spring? They put in tiles. Basically what does a tile do? The goal of a tile is to get rid of all of that water as quickly as possible. Then a few months later, these same farmers are complaining that they have no water. It drives me nuts!

On our farm, we designed the growing spaces to hold water. This is one reason why Joel Salatin and others talk about all of this water coming down the mountains of Polyface. Why did he put all of these ponds halfway up the mountain? Because the ponds hold water, and then in between rain, the ponds can slowly give it back. You capture some of the excess, and you save it for later.

You might not have a big enough property to do that, but you can do swales. Most people

make a perfectly flat garden. That means that when you get rain, your garden washes away along with a bunch of your soil.

Do you know what is also amazing about a non-flat garden? Take a sheet of paper, and fold it into little undulating ridges. You'll have the same amount of square footage in a smaller place.

People ask, "How can I grow more in less space?" You can increase the square footage of your garden by 20-30% just by undulating the land using swales and raised beds. Then when rain moves across, the swales will capture the excess water, and they capture any soil particles that are moved, and then they slow the movement of the water and they spread the movement of the water and they allow the water to soak into the soil instead of running off.

It's such a fabulous, easy technique. So we have our first farm class of the year tomorrow, and that is one of the things that I am going to be talking about – water design and landscape design.

Increasing your soil's organic matter will make your land substantially more drought-resistant. Every one percent increase of soil organic matter needs an acre of land. I don't remember the exact amount, but it's something like 40,000 or more gallons of water that an acre of land can hold for every one percent increase in soil organic matter.

One reason why we have so much trouble with droughts in America is because we've gotten rid of all of the organic matter in our soil because of the way we grow food and the way we manage ecosystems.

We talked about this last time. Getting that organic matter back into the soil not only will increase your yields, not only will it increase the nutrient density of your food, but it will also make your property substantially more drought-resistant.

**Kennedy:** We are skipping around a little now. I want to get into your advice on tools and equipment. There is all kinds of stuff you can buy when you start up a homestead. What are your recommendations for approaching that area?

**Moody:** The biggest reason why men want to buy a homestead is because they want to buy a tractor. We have now homesteaded for over a decade, and we do not own a tractor.

**Kennedy:** You never did, right?

**Moody:** Right. We never have. People have tried to sell me tractors, and I've thought about it, but then I realized what a dumb idea it was.

Good hand tools are really almost all you need. It's generally far cheaper to borrow, barter, or rent a piece of equipment than it is to own it. It's like I own a log splitter. When I bought that log splitter, I bought it with a friend, and we shared it. Then his tree business got so big that he upgraded to an even bigger log splitter. So he said, "Here, just have this one."

Do you know how many days a year I use a log splitter? Two, or maybe three days a year. I can actually split most logs faster by hand than I can split them using a log splitter. I only need the log splitter for about 10% of my firewood, if that.

I see people who heat with wood, and they think that they need to own a log splitter. You can probably rent a log splitter from a neighbor for \$50 or \$75 once a year, and you are going to come out infinitely ahead.

I don't own a livestock trailer. I raise livestock. People are like, "How do your animals get to the butcher?"

I say, "I am surrounded by people who own livestock trailers."

I don't even own a truck anymore. I move my pigs and other small animals to the farm in the back of my minivan in a cut-down IBC tote. So instead of running a truck that costs \$50,000 that I get taxed to death on for the annual tax for the truck and it gets 12 miles to the gallon, I'm just running my same family minivan. I'm not damaging the minivan because I use an IBC tote to put the animals in the back of the van.

**Kennedy:** Can you explain on the IBC tote? I know you use that for several functions.

**Moody:** The chickens that are in my bathroom are in an IBC tote brooder that I built.

IBC stands for intermediate bulk container. Basically liquid substances that are moved around the world, if they are not in a tanker and they are not in a little bottle, they are in an IBC tote. All of these different liquids that are used in countless applications in companies are moved in these IBC totes.

There are tens of millions of these IBC totes everywhere all the time. They are always moving around. So you just need to find a business that has to get rid of them. Some businesses will give them to you for free, and other businesses you will need to buy them from. The big thing to watch with IBC totes is what they previously contained. Some will contain absolutely nastiness, and I would never touch that IBC tote with a ten-foot pole. I know people who have killed animals or otherwise contaminated their soil.

They say, "Oh, it doesn't matter what this used to contain," and then their animals are dead because the IBC tote contained kerosene or diesel or hexane or some crazy thing.

The totes will usually have on their side a Manufacturer's Safety Data Sheet (MSDS). I don't buy totes unless it has that sticker and I can read what that sticker tells me the tote contained. Then I can take what that sticker says, and I can go look up the full MSDS sheet, and I can google through it. I can see, "Is this a tote I can wash and clean, and then it would be safe to use, or is this a tote that I never want to touch?"

Again, the totes could have contained olive oil. The totes could have contained tomato paste. The totes could have contained atrazine. I mean, the sky is the limit with what could have been in these things. You just want to make sure that you are getting ones that are safe to use. They are one of the most useful things around a homestead. You can use them for 100 different things.

**Kennedy:** Is there any other equipment that fits the same bill that you are able to use for multiple functions on the homestead?

**Moody:** My conduit coop-bender. People were looking at pictures I posted on Facebook of the new chicken tractor we just built. They were asking, "How did you bend those beautiful hoops?"

I said, "I bent them with a hoop bender."

Right now lumber is through the roof in cost. But EMT conduit and other metal pipe conduit has gone up some in price, but nothing like lumber. For making low tunnels or any type of arch, I can take EMT conduit on this bender and bend beautiful, perfect arches to use to make all kinds of fun stuff.

**Kennedy:** You just mentioned lumber, which transitions us to the next topic about fuel for the homestead. I know you heavily rely on wood. Could you talk about your use of that and the importance of being in a heavily-treed area and how it helps with your energy needs?

**Moody:** We could produce 100% of our own heat. Before I put in a kitchen sink for us to do dishes, I put in a woodstove. So that will tell you where my priorities are.

I told my wife, "We can wash dishes in one of the bathtubs. This house has three bathrooms, and we have three bathtubs. I can't heat this house with anything but a woodstove if the electricity goes out." So it was pretty simple calculus for us.

Heating with wood is fabulous. If I had my way, we would have an outdoor woodstove, not an indoor woodstove. But because of the nature of our property and the house and whatnot, and because I was able to find a \$5,000 woodstove used for \$600, it was a no-

brainer on that math and calculus. But I personally prefer outdoor wood burning stoves to indoor wood burning stoves. They have a lot of advantages over an indoor wood burning stove, including radically reducing your risk of a house fire. But when it's cold, like last night when we were down in the low 30's again in Kentucky, it's nice to throw some logs in the stove and warm up the house and have everybody be cozy, and not having to pay whatever the ridiculous electricity rates are right now.

**Kennedy:** There are a couple of other types of energy. I want to know how you see their use on the homestead, and those are wind energy and solar energy.

**Moody:** I'm not a fan of wind energy. I don't normally see wind penciling out. I do like solar. Solar has come way down in cost, and in a number of states – and it might even be at the federal level as well – there are some pretty big tax incentives for doing solar. That kind of nonsense is going to continue. So solar might make sense for you.

The battery technology for solar continues to improve now that there are so many Tesla cars on the road. We should have you have Thomas Massie on the show. He would be a great guest.

**Kennedy:** He's been on.

**Moody:** Oh, good! Did he talk about driving all the way to Florida?

**Kennedy:** No, we just talked about the PRIME Act. We didn't get to talk about his amazing farm.

**Moody:** With all of these Teslas on the road now, they get in wrecks. Their batteries are amazing for solar set-ups and for building your battery bank. The batteries are the best battery technology we have.

I like solar. If we get this property in Tennessee, we are looking at building a house from scratch, and I'm going to go straight to solar and straight to wood heat. I might do propane or something as a back-up. We'll see.

If I was starting from scratch and I was building a house in a rural area, as long as you are okay with solar, I would build it as solar from the get-go.

The problem with putting solar on existing homes is that the homes just aren't made for having solar. The appliances aren't efficient, the homes are not well-insulated, and it doesn't always pencil out on existing homes. But if you are retrofitting a home and you are going to be doing a lot of renovations to a home, solar is definitely something that I would consider.

And I will say this really quickly: One thing that you can do solar-wise is have solar either as back-up or as primary for key infrastructure. So say that you are on a well. Your well is driven by electricity. So if you lose electricity, you've lost your well water.

You don't have to put your whole property on solar, but having a solar bypass for a well and other crucial infrastructure and appliances is a great idea.

**Kennedy:** You've been very resourceful. You always minimize your expenses using waste products. I know some farms have taken used vegetable oil as motor fuel. Have you done anything like that?

**Moody:** For a time I ran my truck on half diesel and half purified vegetable oil. I have rocket stoves, and we have used solar ovens to cook at times. We obviously have the woodstove. If you are going to have a woodstove, especially an indoor one, make sure it's one that you can also cook on because then you have a way to cook when you are using the woodstove if you need to.

That's where I'm currently tapped out in our current set-up in terms of having resiliency. It's been getting harder to get some of the waste veg oils, and they are such a pain to handle. It's so smelly dealing with them.

**Kennedy:** I think we are going to stop with Part II right here.

John, thank you again for talking about all of these issues and giving us the benefit of your knowledge. We will pick it up again soon.

**Moody:** I hope that you have a great day. Thank you all for having me. Maybe after people get to listen to these, if they have a bunch of questions, you will be able to round me up again for a follow-up.

**Kennedy:** Alright. Take care.

## **MODIFICATION**

Transcripts are not always verbatim. Modifications are sometimes made to improve clarity, usefulness and readability, while staying true to the original intent.

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