



**“Joel Salatin Q & A with Grow Network  
Members ”**

**Joel Salatin**

**\*FULL TRANSCRIPT\***

**Hosted By Marjory Wildcraft**  
**[www.TheGrowNetwork.com](http://www.TheGrowNetwork.com)**

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## “Joel Salatin Q & A with Grow Network Members ”

Marjory: Hello and welcome to the Homegrown Food Summit. This summit is brought to you by the Grow Network and my name is Marjory Wildcraft. I get to be the lucky host, and our next presenter I am so delighted about is Joel Salatin. It really is an honor to get to interview him, and this one is just a little bit different from some of the others that we normally do. I've interviewed Joel probably half a dozen times now, and what I decided to do this time was if you've been hanging out in the forums and you've seen, I've been asking the Grow Network members, "Hey, if you had a chance to ask Joel a question, what would it be?" Then of course, at the end of every summit I always have a questionnaire and a survey, and I read every one of those responses, and gather questions that people want.

I also do welcome calls for new members when I can, and I ask people, "Hey, you got a question for Joel?" I've added all of these questions up together, and that is the basis of this interview, so it's basically questions that are coming from you and other members of the Grow Network. Very, very fascinating. We cover apps for organic farmers, and certifications for organics, and what do we do as consumers, some of the biggest challenges facing organic farmers today, and then of course also Joel's take on AI, artificial intelligence, the possible job loss issue, and the future of food with AI. Let me read you a little bit about Joel's background if you haven't ever heard about him. My God, I think everybody knows him. Joel is the most famous farmer in the world. He's known as the high priest of the pasture, and the most eclectic thinker from Virginia since Thomas Jefferson.

He's as comfortable moving cows in a pasture as addressing CEOs in a Wall Street business conference. That man really is good with words. You'll hear that and enjoy it. Joel is the author of a dozen books. Most notably, *Folks, This Ain't Normal*, *You Can Farm*, and *Salad Bar Beef*. Joel and his 550 acre farm, which he and his family run, have been featured in Michael Pollan's bestselling book, *Omnivore's Dilemma*, and in the award winning documentary *Food Inc.* I think he's actually been in a few other documentaries since then. Anyway,

Joel's everywhere. He really is the most famous farmer in the world. Let's get started with this interview with your questions to Joel.

Marjory: Well, I would really like to welcome Joel to the call. Welcome, Joel.

Joel: Thank you. It's great to be with you.

Marjory: Thanks so much. This interview is going to be just a little bit different from what we normally do. The Grow Network now has, well at the time we're doing this recording, about 165,000 active and engaged members, and I said, "Wow," you know? I put it out in the forums and I said, "If you had a question for Joel, what you would ask him and I'll get all the questions together." I've gathered them up and I've tried to put them in a way that flows reasonable well, but I know you're so good on your feet. I'm just going to give the different questions as they come up and we might be jumping around a little bit. Does that sound okay?

Joel: That sounds just fine.

Marjory: Yeah. You are so gifted with words, so I'm sure you're going to be fine. Tom, Lacey, and Celeste and several others asked this one question of what is the biggest hurdle facing organic farmers today and what should we be more aware of as consumers and as potential organic farmers ourselves?

Joel: Yes. Yeah, I think the single biggest hurdle from a marketing standpoint ... Now, this is a very open question. I don't know if they're asking about what's the biggest hurdle in growing, biggest hurdle in marketing, biggest hurdle in ...

Marjory: Oh, yeah.

Joel: ... business.

Marjory: Right.

Joel: It's a pretty wide open question, so let me take a couple of little stabs at it. I think from a marketing standpoint, i.e. finding a place at the

market trough, okay, is Walmart Industrial Organics, and now in the U.S. we're actually certifying organic, even hydroponics, systems that don't even use any soil. This is creating a tremendous flattening of the market expansion that organics has enjoyed, especially local organics. Farmers markets, CSAs, things like that have really enjoyed a tremendous expansion over the last 20 years and that's now flattening or even dipping as people shift from farmers markets and local produce stands and getting their food the same place they get their diapers and their oil changed.

Marjory: When you say it like that, it sounds terrible.

Joel: Yeah. Yeah. But that's where we are, and so that's a real thing. Of course, now the new pressure, especially in meats and snack mixes from bars like, whatever, snack bars to jerky, dried meats, and things like that is Amazon.com, the whole direct market door-to-door sales over the internet. That's creating a tremendous amount of pressure as well. These are all kind of market changes and pressures that put more onus on us farmers to message better, to tell our story better, to try to differentiate better, and actually become better at being the whatever, the food, the authenticity guru in our region.

Marjory: Yeah. Yeah. I would absolutely agree with you. Almost any business it almost seems like the achilles heel to whether they flourish or not has to do with marketing and it's tough, you know? I think the personality type of somebody who's a farmer does not necessarily lend itself to being a marketer. It's a tough thing.

Joel: No. Yeah, which then leads me ... That's a great segue. It's like you were reading my mind. Yes. The problem is that the storytelling, messaging, intellectual nutritional guru coach, all right, those are not the cup of tea, the skillset generally owned by someone who wants to carry five-gallon buckets of water and feed and move animals and pull weeds.

Marjory: Yeah, and clean out chicken stalls. Yeah.

Joel: Yeah. Yeah, yeah. So, that moves you directly into what, from a big overall business standpoint, what's the biggest hurdle facing organic

producers and that is relational skillsets, team-building, being able to bring on partners that have skillsets that you don't have. We got a big sign out in our farm office that says success will always demand that you spend time with people you wouldn't normally talk to.

Marjory: Oh. Wow. Yeah. Right. Yeah.

Joel: I think there's a lot of truth in that because the truth is that the skills and talents, the gifts necessary for successful business generally don't grow on the same pair of legs. You know, we tend to find our sweet spots in different skillsets, and so most of the time in my experience with young beginning farmers is a) a fear of building a team too early, "Oh, I don't want to get locked in with employees and wages and things like that. I'm not even making a living myself." That's why I've been so aggressive at what we've done here is building a team without wages. Well, does that mean you have slaves? No, no, no. What it means is that you have performance-oriented compensation packages, so you get paid per sale, you get paid per chicken processed, you get paid per whatever, per email sign up, okay? What happens then is you then can get partners who are equally at risk if things don't go and you protect yourself from a guarantee of pay if things don't go well.

Marjory: Yeah, that's a great model that's just happening in a lot of different industries of ...

Joel: Yes.

Marjory: ... you pay by performance or pay per click and ...

Joel: Yes.

Marjory: ... it's the whole process of companies becoming leaner and leaner.

Joel: Yes. Yes. Yeah, that whole performance-based, commission-based compensation plan what it does is it becomes it's own vetting system. People who are self-confident and aggressive and what we call bright eyed and bushy tailed those kind of people are actually drawn to these kinds of systems. People who are just doing their

time, putting in their time they are repelled by it. It becomes a real nice vetting system to actually get partners who share your character and your entrepreneurial deal.

Marjory: And so that's a great piece of advice for ...

Joel: Yeah.

Marjory: ... young farmers is to create partnerships and do a paper performance type of arrangement to help mitigate the risk of income.

Joel: Yes. Yes. So, that's one. And then I would say as we move into big picture, especially if you move into livestock, which of course is our bailiwick, if you could say what is the single biggest hurdle especially for livestock I would say the single biggest hurdle is food regulations. It hasn't hit produce too much yet. You can still pretty much pull off a side of a road and sell tomatoes. I think those days may be actually numbered. We may be in the final days of that, but for sure in the livestock arena to be able to market cheese or dairy or chicken or beef or whatever you have this whole labyrinth of, they're scaled discriminatory regulations that make it very, very difficult for a startup to access the market. That is the single biggest hurdle facing whether you're organic or not. Just local, entrepreneurial, embryonic startups in the livestock sector are extremely hampered. That's so important because right now 50% of the consumer dollar is for animal, something animal, whether it's dairy, egg, pork, whatever. 25% is produce and 25% is dry goods, you know flour, sugar, nuts, dried things, and so if we're going to actually chase the big gorilla in the room we've got to be chasing the livestock sector, which is the hardest to deal with because of the regulatory climate.

Marjory: Yeah. So, if I were to summarize some of the biggest hurdles, and you're right that's a big open-ended question, but you've handled it magnificently, and so the first is marketing and the second is team-building and getting a team going and then the third is government regulation. Like, that's just ...

Joel: Yes.

Marjory: ... and I can see it, it's onerous. Yeah. Yeah.

Joel: Yeah. Yeah, it sure is. But, you know, there's some really fascinating and interesting what I call circumvention techniques being created now. In fact, a group of us are actually talking about in 2020 maybe we can host a conference on what right now I'm calling the rogue food conference. Let's just go rogue.

Marjory: Yeah.

Joel: Because now it's almost as if circumvention has become more efficacious than compliance. So, we've now got the PMAs. These are private marketing associations. It's like a country club. You join a club it's not public. Those are just popping up around. There's a lady in North Carolina that started a food church, my religion requires that I get this kind of food, and so there's all sorts of really, really clever circumventive things that are trying to create some wiggle room especially in the value add and food space. It's pretty exciting to see the creativity.

Marjory: The creativity. I know personally I have eaten some of the most finest catfish bait made out of goat cheese that couldn't ...

Joel: Yes.

Marjory: ... be sold legally, and it was delicious. I tell you what, I was a very fine catfish there.

Joel: Yes.

Marjory: So, yeah.

Joel: Yes.

Marjory: Yeah. Yeah. That leads me to another question which almost circles back to the first answer, and you'd mentioned Walmart Organics and Lindsey and William and Janet, there's actually quite a few people ask like what is up with the plethora of standards. There's organic. There's cage-free. There's humane. There's organic tilth. There's

Oregon tilth. Just do you have any advice for how to, and then of course, you know, yeah right, does organics from Walmart really mean anything, right? Do you have any advice for how to navigate that maze of standards?

Joel: Yeah, well, yeah, that's the whole certification thing grew out of, one of the reasons that the whole certification thing developed was because farmers didn't want to have to tell their differentiation story and consumers didn't want to have to think about knowing anything. If it got the stamp, if it got the stamp of approval, well then I don't have to think, I don't have to compare one farm to another, one chicken to another, one egg to another. If it's got this stamp, then I don't have to think about it. In both cases, both the consumer and the producer, the certification is all about, can I say laziness? Not having to do anything because this other, the third party here is taking care of it all. In my view, the single biggest fallacy of these certifications is that whenever a certification is based, when it finances itself on the backs of the certifyee, in other words I want the certification so I pay for an audit to get certified, every single system that funds itself on the basis of the people receiving the certification, paying for it, is doomed to fail because the incentive is to grow the certification, compromise the standards in order to grow the pool of certified people and therefore the flow of cash flowing into the home office that's doing the audits.

Marjory: Yeah.

Joel: That's why every one of them over time gradually gets compromised and adulterated and that's what happens.

Joel: My sense is that the questions of navigating of all these certifications they are actually, there is a plethora of them. They're all over the place and some of them mean something, most of them don't. Our farm has not taken any certifications partly because we think they all get squirrely out at the end. For example, we do pigerator compost and we turn our compost with pigs. Well, that's disallowed in organic certification.

Marjory: Really? Oh.

Joel: Yeah. There are a lot of things that as you get out to the ends of them, you know the animal welfare stuff. You've got to euthanize them first. Well, how are you going to euthanize them? With gas. Well, then you get into systems that cost \$100,000 just for the cabinet to be able to do it and it's actually an inexact science and you've got to deal with worker safety, expense. All these things just start getting kind of crazy out the back end, and I really think ...

Marjory: I really appreciate that insight that the certification is basically meant to be a convenience or a time-saver for the consumer and I love that description of the model of how it's almost like a fiat currency, it's doomed to fail at some point and time ...

Joel: Yes.

Marjory: ... just because of the vested interest.

Joel: Yes.

Marjory: I guess really it sounds to me like what we really need to do is just develop the relationship with our local farmers, the know, like, and trust model of is that person really growing good food or not, which does take time and it would be so much more convenient to have that little stamp or that little thing, you know?

Joel: Yes.

Marjory: Yeah.

Joel: Yeah. Well, you're right, you're right, but there's no free lunch and anything worth having is worth putting a little bit of investment in. It doesn't always have to be local. We can't always visit the banana grower or whatever, but we can put some attention on vetting it and there are a lot of things that you can learn on a website. I mean, if you get on a website and the farmer has no trespassing signs or like right here we have a big organic poultry company here in the Shenandoah Valley and if you get on their website they have a whole

tab that you can push meet our farmers. Go meet their farmers. Well, they're all standing outside their confinement chicken houses, you know? It's organic chicken, but the chickens never go outside, they never see any grass, and it's just factory farming with organic slapped on it. There's a lot of sleuthing that you can do just on the internet watching the websites.

Marjory: Good. Dove-tailing again into you mentioned earlier, and this was another question that came up from Jim and Don and Lisa, Sherry, aquaponics has recently been allowed to be certified organic and most of us were up in arms like what? Are you kidding me? To some extent, it looks kind of innocent, like, yeah, if you're only putting good stuff in the water and all that. I think I know what your answer's going to be, but why is there so much upset about aquaponics being made organic? The community wants to know.

Joel: Yeah. Well, generally when you have non-soil produce it contains up to 30% more water, it doesn't have the nutrition. Now, part of that nutrition is simply because it is more watery, it simply doesn't have the mineralization, the mineralization concentrations are not nearly as good because it's diluted with all the extra water, so you have that issue. You have a nutritional issue. You have water issue. You simply cannot get the full range of soil food web, the mycorrhizae or the actinomycetes. I mean, we all know that a handful of healthy soil has whatever it is, like nine billion beings in it, all right? You simply can't duplicate that in a soilless system, so that's really critical.

Now, that being said, I do want to crack a door for somebody's that using kind of a medium in growth that's big enough and has enough aggregate in it to actually create a fungal bacteria mycorrhizal area to grow a bunch of the food web things. I mean, I have seen, for example, aquaponic systems using beads or pebbles or small rocks or something in a large bed that are actually full of earthworms, for example. There's enough aeration in there to actually have earthworms in them. I guess for me my bottom line is if your system will grow earthworms then I'm okay with it.

Marjory: Okay.

Joel: If it won't, I'm not.

Marjory: Well, my personal take on it is if you're not building soil in the process of producing food then we're fundamentally not sustainable. My main issue with it is you're not building soil and the organic standards in my understanding was initially that it was all about regenerative agriculture, so I think we've shifted away from that.

Joel: Yeah. Well, it's amazing how much, whatever, clever speak people can come up with. I mean, the justification for these systems is look how much more you can grow in a tiny space. You don't need all the room. You don't need all the water. We recycle the water, so we don't have to have all the water. You get all these special supposed benefits, but again they're cherry-picking the positives and by the same token you don't get any nature transpiration. You don't get any soil food web. You don't get any soil development. Yes. Do you get nutrition? Well, probably not. You can make a case for any system if you're allowed to simply cherry-pick the good and not deal with any of the negative.

Marjory: Well, veering off on more into your domain and I'm going to be very interested to your reaction on this one, but Sarah, Amy, and Sue and a couple of others had asked about your thoughts on cultured meat, also known as lab meat or synthetic meat or etc., where they basically just take meat cells and then get it to reproduce and you bypass the whole animal.

Joel: Yeah, yeah, yeah. Yeah. Well, again the entire push for this is to eliminate the need to have to slaughter an animal because as our culture has grown more and more disconnected from its ecological umbilical and the understanding that goes with the cycle of life, which is life, death, decomposition, regeneration, life, death, decomposition, regeneration. That's a circle. It happens in a compost pile. It happens in every aspect of life. So, life, death, decomposition, regeneration. The whole idea that we can actually have life without any death is a fundamentally anti-factual, anti-ecology thought. Everything is eating and being eaten. Everything is dying and being

decomposed and regenerated in some other form, and so the whole idea that you can have life without death is silly.

The whole fake meat thing is predicated on an unsound paradigm, but secondly we're back to the hydroponics. We're back to chemicals. We're back to artificials. Can you duplicate the intricacies and the complexities of the bacterial fungal digestive microbiome relationships and all that those things do and the epigenetics? I mean, it goes so far off to think that we can wander into this awesome mysterious world. I mean, we've only named 10% of the soil bacteria. 10%. Many percent is completely unnamed. That's how little we know about it, okay? To think that we can wade into this, this arena, like a bunch of swashbuckling conquistador pirates and just recreate it from simplicity without any of those intricacies is simply, well it's arrogant but it's also very foolish. I'm going to bet for my soil, you know my three-trillion member internal community, I'm going to try to feed them like my great-great-great-great-great-great-great-great-great-great grandparents because there's a lot more similarity between what I'm carrying inside of me today and my thousand-year-old grandparent than there is some Star Trek, nirvana, cosmic future of lab-created artificials.

Marjory: Yeah. A wall of meat you carve out a steak from. Gosh.

Joel: You know, we went down that road with Justus Von Liebig who in 1837 with his vacuum tubes brought MPK fertilization to the world. He looked at these vacuum tubes, he says, "Ah, see all of life is simply a rearrangement of nitrogen, potassium, and phosphorous, and so if we can just create that then we can create life without anything else." His goals were sincere and noble. I mean, he was looking for an answer to soil fertility problems. I grant that. He wasn't a conspiracist or an evil person, but he simply didn't see a lot of the things. How many things do we go in artificially? Look at hydrogenated vegetable oil. "Oh, we don't need to eat butter and lard. Throw out that stuff. We got to have hydrogenated vegetable oil, Crisco," and that was the official orthodoxy of the entire culture for 50, 60 years, and now not only is it not recommended it's actually considered a hazardous food

that you should not eat any of it and yet it dominated the diet dictocrats for 50 years.

Every time you go in and start messing with nature like this, Mad Cow perfect example. "Hey, let's feed our cows dead cows." People like me were branded as Luddites and Neanderthal barbarians because we wouldn't endorse this new progressive answer to being able to grow protein more efficiently, and then 40 years later there's this big global oops maybe we shouldn't outta done that with bovine ...

Marjory: Yeah.

Joel: ... spongiform encephalopathy. The truth is there is a lot more complexity and beautiful mysterious stuff going on than you and I can imagine and even the smartest scientists can know what's going on, and so I'm with Michael Pollen. I'm saying probably if your great-grandmother couldn't have it. We're talking about 1900. He talks about if it wasn't available before 1900 you probably shouldn't eat it, and I think that's a pretty good rule of thumb. We can all be very thankful that hot dogs were introduced at the 1890 World's Fair. They just came in under the radar.

Marjory: Oh my gosh, Joel. I haven't eaten a hot dog in years and now I want one.

Joel: Well, you can have one of ours. We make hot dogs and they are delicious. They are the real deal.

Marjory: I bet. Now, I know that you're not a Luddite, and we do want to shift to technologies. We don't want to necessarily throw the ...

Joel: Right.

Marjory: ... baby out with the bath water.

Joel: Absolutely.

Marjory: Jefferson, he's actually are tech guru here at the Grow Network, and he says are you using any apps to help you farm or are you seeing organic farmers using apps and if so how helpful is it and what areas is it helping in? Are you, you know, I mean ...

Joel: Yes.

Marjory: ... good grief, I even got a smart phone last year.

Joel: Well, good for you. Well, I'm still a holdout. I haven't gotten a smart phone yet, but I have a very, very deep appreciation for the technology. Let me explain I think where, some things that I've seen them used very nicely. One is certainly terrain-type technology where you can walk out and it'll give you elevation. Boy, when you're designing, when you're wanting to put in a swale or a water pipe or a gravity-fed water system, there's nothing like being able to walk a line level across the terrain. That's a really great one. Another one is similar. It's terrain GPS technology where we can decide for acreages, so you can go very, very accurately as to how many square yards, how many acres are in a field, in a place, and you can identify how much is a parameter at a certain number, certain amount of production in the grass, for example, how many cow days does it have because now I know how many acres are in it.

I was with one of our apprentices, who is now a subcontractor on one of our rental properties, and going out to move the cows, and so she's put the whole farm into a GPS data bank. She says, "Here, jump on the four-wheeler." She takes her smart phone and she's got electric fence and the stuff on the four-wheeler and she says, "I'm giving them 1.4 acres a day." It was a herd of whatever, 300 head. "I'm giving them 1.4 acres a day," so I jump on the four-wheeler, we ride out there, she follows a balloon on a smart phone, and it suddenly stops. That's 1.4 acres. That's where we put up the cross fence. I mean, that's pretty cool.

Marjory: That is. Yeah.

Joel: For me, you know what I do, I've trained myself to step off yardage within like 1% accuracy, and so I just take it and I walk out through

there and count one, two, three, four, and I know that 1.4 acres is whatever, 7,350 square yards, and so I just step out there, do the computation in my head, and do it. But I deeply appreciate the sophistication and the precision, the precision that this can bring to the table. So, yes, there are, you know weather forecasting. I mean, that's probably the single biggest one farmers use now.

Marjory: And, you know, that has gotten surprisingly accurate in the last ...

Joel: It has. It has

Marjory: ... decade or so. Yeah.

Joel: Yeah. You can follow a line of thunderstorms. You're making hay, you know, and some of these higher combining, weed or whatever, and you can follow these storms, like you say, yeah, very, very accurately. So, yeah, there's some really cool applications for these things.

Marjory: Well, let me switch topics to even further down the technology road, and I'll give you two examples. This is artificial intelligence and there are two examples I want to bring forward and then see what your take on this. One is from conventional agriculture, which I'm not excited about, but they had the giant pigweed which has grown out of their, it's almost like antibiotic resistant. These weeds are ...

Joel: Right.

Marjory: ... now becoming herbicide resistant. I think one of the biggest expense on a conventional farm is roundup, and in order to reduce that cost they have trained an IA. They gave it like 10,000 pictures of pigweed and it learned how to identify pigweed, and so on the back of the tractor with the whatever they're dragging behind it. I'm sure you know the technology terms, but it has these little cameras and it looks for pigweed and wherever it sees pigweed it's spurts just exactly on that plant itself and it leaves the corn or the soy or everything else alone so that way they're able to reduce the cost, so it's like wow. This AI can be smart enough to learn how to identify this plant. Now, it can't do anything else yet, but that's ...

And then there's another example. AI is starting to become available at the tinkerer level, which is mainly like you or I if we really wanted to do this. There's all sorts of open source, and there was one story I was reading about this young Japanese man, an engineer, went back to his parents farm and they grow a very particular type of cucumber, and it's a prickly cucumber, and the grading system for the cucumbers is, there's like 20 different levels and the price of the cucumber is dependent on the grade and it's very difficult to do. In fact, only his mom and dad knew how to sort it properly, so they couldn't hire people to do it and his mom and dad would basically have to work like hours and hours and hours during the harvest because they had to do the sorting, and so the son programmed an AI, had taught the AI how to grade the cucumbers basically and then connected that up with a machine that you put the cucumbers in. The machine would take a picture of the cucumber, grade it, and then drop it along a conveyor belt into a bin for whatever grade it was, and I thought, "Wow, that is really interesting."

There's some very fascinating applications of AI coming along, and I just was wondering if you had heard of anything or seen anything or what your thoughts are on that, the efficiencies or confusions that ...

Joel: Yeah.

Marjory: ... can happen due to this new technology.

Joel: Yeah. Well, yeah, I'm all for that. I don't really have a problem with being able to use that. I mean, one of the things that we're seeing, for example, in the abattoirs now, slaughterhouses, especially in Great Britain, is AI camera technology to use infrared, using frequency of bacteria to be able to create pictures of the bacterial frequencies coming off of a carcass, for example, and it has created a more empirical way to check for sanitation as opposed to the sniff and smell method that we still use in this country. What it is does is it eliminates the entire cost of having to put a government inspector on the floor of the slaughterhouse. You simply have these high-level pictures that can go into a computer feed in some central module with certain benchmarks that if it shows up too many of this color or

that color then beeps or red flags or whatever and it's real-time empirical stuff. If that actually creates a way for a farmer like me to be able to do on-farm processing that satisfies the ...

Marjory: Yeah, the USDA.

Joel: ... the safety network, the consumer rights advocates, then I'm all for it. Yeah, the technology creates a microanalysis capacity that is very welcome, and so, yeah, both of these things that you mentioned I'm all for. I see absolutely no reason why we should reduce, why we should fear AI in that kind of application.

Now, do we want cameras on every street corner so the movement of every single person in the country can be tracked? Probably not. But that's of course where China's going is China's going very, very rapidly this direction, but interestingly, culturally, they don't have space requirements like we Americans have. We Americans hear don't get in my face. In China, they love you getting in their face, and so there's a whole different cultural idea of that kind of thing.

Marjory: You know, I'm as we're speaking now, it has not been confirmed, but I'm currently discussing with Dr. Kai Fu Lee's team about me getting to do an interview with him. He is, for those that don't use him, he's been called like the Bill Gates of China and he has basically been spearheading the AI movement in China for many, many years and I'm really interested to see what he has to say. One of the snippets from his book is that in the next 15 years he sees that about half of all jobs done by humans now will be better, more efficient, and replaced by either artificial intelligence or robots, and I am, just in a broad generalization, I'm thinking you know we've gone down this road of mechanization of food and it hasn't been good. Even with that tsunami of change coming, I think growing food is still going to really be something that needs a human hand and a human eye no matter how smart the technology gets, and just wondering about your comments, and then certainly I'll get you a copy of the interview if I get to do that with Dr. Lee.

Joel: Yeah. Yes. Well, so far, so far technology has never reduced job needs. I mean, think of all the people that got displaced making buggy whips and carriage wheels and stuff when the automobile came on. Think of all the people that got replaced making a harness for draft power when tractors came on. Think of all the people that got displaced when, goodness for that matter even, chemical fertilizer displaced shoveling. When computers started people "Oh we won't need people anymore. We're just going to run a ..." Well, no, all we need now are people to fix all the problems the computers create.

Marjory: I got it. Yeah, I got it.

Joel: You know, the story of technology is actually a parallel story with the explosion of population and job market. I mean, here we are with an accelerated population growth during the Industrial Age, but generally a correspondingly explosive job market. Now, we could say, well, you know, that's extractive and I don't want to get all those rabbit holes. I'm just saying that just a general look at technological advance has actually created different kinds of work, but they certainly have not reduced the need for human activity.

Marjory: Well, I love that optimistic turn of it. Yeah. I want to shift gears ...

Joel: You know, I have a good friend ...

Marjory: Sure, go ahead.

Joel: I have a good friend who was a plant manager at the largest plumbing copper, copper plumbing manufacturing facility in the U.S. and he said a computer has never replaced a single job. It changes job requirements, but it actually when you look at the total people involved it's no more efficient than people handwriting ledgers. You know, handwritten ledgers you didn't have to worry about viruses. You had no security industry. You had no password industry. It never crashed. It didn't take electricity. It's one reason I still like book, you know? I like paper magazines. I like books. Why? You don't have to turn an on key. It never crashes. It never goes blank. You never have to replace it. There's a lot of advantages to this, and I think that we

can become whatever, inordinately euphoric or paranoid, either way,  
...

Marjory: Yeah.

Joel: ... over a technology that actually in and of itself the technology, it makes shifts. It certainly makes shifts in the kinds of things that people are doing, but it actually doesn't, in the end it actually doesn't displace people.

Marjory: Good. I love that optimistic viewpoint. I do want to shift there because we're getting pretty close to using up all of your time and I really appreciate you being here. This is another, a bit of a controversial top. Casey, Sarah, and John ask, there were actually a few others, what's your thoughts on the hemp and marijuana and those crops and are you planning on growing those anytime soon?

Joel: Well, easy question. First, we're not ready to grow them right now here at our farm, but it certainly isn't because we don't think they could be profitable or because that's just not our, it's not our deal. But who knows, in five years maybe we will. The bigger picture where I am in ... Hey listen, I love it. I mean, the fact that we cannot buy bailer twine made in the U.S. because we can't have usable fiber. There's actually, there's no fiber in the U.S. that's comparable to be able to make something as basic as bailer twine, lassos, and rope, you know hemp rope, is just ridiculous. Anybody that knows me knows I am all for liberty and freedom for more and more different crops. Goodness, you know Henry Ford made a Model T out of hemp body. It was stronger, it was lighter, it was cheaper than steel, than metal, but there were other people that had other ideas. I think that we can do a lot more with some freedom rather than additional ...

Marjory: Yeah.

Joel: ... regulatory tyranny.

Marjory: I get you. Well, I'm going to wrap this ... Oh, no, actually I've got two questions and Wilson and Mary and Kathy were asking what is the most profitable thing you produce on your farm? Now, we definitely

understand that diversity is actually the real key to farm success, but are there anythings you go "Wow, we do this every year because we know we're going to make our nut on this."

Joel: Yeah, it all does go together. We don't have one thing that's more profitable than another as far as our production, you know chickens, beef, pork, that sort of thing. They're all pretty much the same. Now, they're very different in income per acre. The poultry is definitely the highest income per acre, but it also takes the most labor per acre, so there's no free lunch. If you look at the overall farm and what we do that's the most profitable thing we do, it's probably cutting our own firewood. We figure between mom's house and our house that saves us about \$10,000 a year in heating costs, takes us a couple weeks, and it gives us ashes and it gives us charcoal at the end that we can feed pigs and keep the pigs healthy. Ashes keep the chickens healthy because they fluff in the stuff, keeps the bugs off the chickens, and then it acts as a wonderful fertilizer. All of the things that we do we feel like having our own outdoor wood furnace and having our own wood heat and doing that, yes it's labor, it's work, but effort for penny is probably the most lucrative thing we do.

Marjory: Well, that's such a fascinating answer. You know, I was interviewing Arina Pittman from the Permaculture Research Institute a while ago, and I said, "Arina what was your easiest calorie crop?" She thought about it for a long time and she came back and she said, "Yeah, firewood." I meant calories you eat, but you know?

Joel: Yeah.

Marjory: Yeah. Yeah. That's really great. I'll end up with this last question that Sherry O. and Laura asked. Again, it's a little bit open-ended, but I know you'll come up with something awesome. They were saying if you were to start all over again now, what would you do differently?

Joel: Probably develop a team earlier and not try to do everything myself. You know, there's a pretty whatever, on-the-mark business thinking right now called StrengthFinder. If you've seen any of that StrengthFinder stuff, it's a kind of offshoot of the Briggs Myer

character personality test, things like that. The basic thing is we've all heard well you need to work on your weaknesses, need to work on your weakness, and their whole premise is you don't need to work on your weaknesses, you need to leverage your strengths and you need to find people to partner with who are strong where you're weak, and I think there's a lot of wisdom to that. I think especially we as hermit curmudgeon farmers where we tend to grow up in a kind of a victim-oriented, oh woe is me, I've got this, society thinks I'm an idiot because I'm a farmer and I've got my hands in the dirt and smart people don't do that and yet I've got to feed the world, we've got this kind of, oh I don't know, complex that we go through life with. I think that if I were to do it over again I did not start early enough looking for formal partners who were strong where I was weak.

I think that that's probably one of the most common things that people do. You're a farmer. You're independent. You're an independent American. You're supposed to do this yourself. I'm supposed to fix this myself. I'm supposed to do this myself. The result is that we spend three hours doing what somebody who's skilled at it could do in a half an hour. In that two hours, we could be concentrating on something that we're really strong on and generate three times as much money that would let us build mutual interdependence as opposed to independence to the point where we spend a lot of time working on things that we're not good at, and so finding what we love, what we're skilled at, and what we now about, that sweet spot where those three universes intersect, what we love, what we know, and what we're good at, that's our sweet spot and I think a lot of the secret to life satisfaction and personal affirmation is in chipping off the things that are outside that sweet spot and trying to spend more hours a day in that sweet spot and that means, that means developing partners and relationships, which is not a skill that farmers tend to, where they tend to not excel.

Marjory: Wow. You know, we are always harping on the power of community here at the Grow Network and that was just wonderfully articulated for that.

Joel: Yeah. I always ask people, look if you're going to go through a hardship, you want to go through it by yourself or do you want to hold hands with somebody? I don't know about you, but even hermit curmudgeons deep down would rather go through a hardship holding hands than just by themselves.

Marjory: Totally get you. And to wrap up, you had talked about at the very beginning one of the biggest hurdles was marketing, and we're going to have a button right here to the right of your presentation and direct them to your website where people can pick up any one of your, oh my god, do you have a dozen books now? I have been lusting after that Salatin Semester DVD set. I really want to get into that. I have all the original Polyface Farms video. But, yes, would you like to take a minute and tell people what resources you have available there to pick up at the website?

Joel: Sure. Well, yeah, our website is polyfacefarms and there's everything there from links to YouTubes to what we do on the farm to the gift shop to resources that we have, books that we've written or video content. You know, this is not our biggest deal by any means, but we, yeah, I've got 12 books out there. When you stack them up, they're a pile about 14 inches high and you say "Man, did I come up with all those words."

Marjory: Yes, you did.

Joel: So, there they are, and if I continue to stay healthy and live I've got a bunch more titles dancing around in my head, not just sugar plums now. You know, there's a lot of resource there and we welcome anybody to jump on that and enjoy those.

Marjory: Well, just click on that button to the right and that'll take you directly to Joel's website and, yeah, like I said, I have been wanting to do that Salatin Semester for a long time. I'm looking forward to that full set. Joel, thank you, thank you, thank you so much for your time, and for me it really is a honor and a privilege. I really look forward to this interview that we do almost annually now. You know, the work you're doing to really transform organic farming and help regenerate

the whole small-family farm movement that was like, we were way on one end of a pendulum where there was hardly any left ...

Joel: Right.

Marjory: ... and now there's quite a resurgence and I really have to credit you with being a major force in that movement, and so appreciate your time. Thank you.

Joel: Well, thank you. Thank you and it's a privilege to be on with you. Thank you.