

Poisoning Our Children: The Parent's Guide to the Myths of Safe Pesticides:

A Special Interview With André Leu

JM: Dr. Joseph Mercola

AL: André Leu

JM: Hi, this is Dr. Mercola, helping you take control of your health. Today we are joined by André Leu, who is the former president of International Federation of Organic Agriculture Movements (IFOAM) - Organics International for six years, from 2011 to 2017. He is now the international director of Regeneration International, which we'll talk about in a bit.

He's written a book called, *Poisoning Our Children: The Parent's Guide to the Myths of Safe Pesticides*. We're going to talk about that book today. I just want to caution you that he is, as you can tell by his accent, coming to us from Australia. Anytime we have a long-distance, international interview, the bandwidth becomes challenged. Please excuse the less-than-optimal video. Welcome and thank you for joining us today.

AL: Thank you for having me. This is my second book. My first book was called *The Myths of Safe Pesticides*. When I looked at the science, I realized there is no science on safety of pesticides. This is actually based on data-free assumptions. These are really mythologies.

When I was researching data, I realized there's absolutely no scientific evidence at all about the safety of pesticides and other chemicals for our children. Yet, we have hundreds of scientific studies showing the damage that the smallest amount of pesticides can do. The fact is the science shows there's absolutely no safe level of these chemicals for children. I think it's very important for parents to learn about it and be aware of what the science says.

JM: One of the key arguments in your book is that the agricultural industry and global chemical industry have actually ignored the concerns and manipulated. Can you imagine that? They manipulate the data. How did they get away with this strategy?

AL: The process is called "regulatory capture." This is where the industry actually captures the regulators, and the regulators now work for the industry instead of working for us, the taxpayers and the public. We see this in multiple industries. The tobacco industry was a very good example of that. Asbestos is another example. Lead. The pesticide industry takes. They work from the same playbook.

You get things like revolving door, where the people who work in the regulators suddenly get high-paying jobs in the pesticide industry. The very people who say, "Develop the products and pesticides," the next thing you know, they get a job as senior managers in the regulatory body, in the United States Environmental Protection Agency (U.S. EPA) for instance. And then they start approving the products of their former company. That is really a form of corruption. But we see

this everywhere around the world. In every country I'll look at, this is what happens. The regulators are owned by the industry.

JM: That's a classic strategy that they use all the time. In fact, that's really emulated best by the tobacco industry. But you had mentioned the lead. I think that's an example that most people can relate to, because it's now acknowledged widely across the world that it's a toxin. It causes brain damage and injury and lowers IQ.

As a result of primarily the efforts of one courageous individual, Clair Patterson. Clair, you would think might be a woman, but he was a man. He's since passed. But I believe in the '70s and '80s, he just took up the banner. This might be off by a few years. But he took up the banner to expose the fraud that the automobile industry primarily, but also the oil industry, had imposed upon the public, and literally contaminated the environment with this toxic heavy metal that still is now affecting many of us. Because it's in the environment. It's really difficult to remediate.

I'm going to link to the article that we wrote about that a few years ago, because it's just such a classic example of a number of things, not only how these dangerous chemicals and metals can get introduced into the environment, primarily as the result of benefiting some large corporate infrastructures, but also really inspirational component of how one, single individual can actually change the whole system.

He was a scientist. I forget if he's a geologist, I think. He actually went up to the Arctic and collected some data and really provided irrefutable evidence that, in fact, the recent introduction of lead into the gasoline was the primary reason why we had increasing levels in the environment. It's an interesting story. But let's go back to your book.

Some of the ways that the industry is still continuing to manipulate us to this day, and that is the safe regulations with regard to the toxic limits. This is crucial, because if you rig the game and you identify or pre-identify that the limits are higher than they should be, then essentially, you make it easier for industry to essentially contaminate the environment, you and your family personally. How do they get away with this?

AL: They get away with it by trying to suppress the independent data. There are lots of independent scientists and researchers. They publish in scientific journals. This is regarded as the gold standard in research. But this gets suppressed. Instead, what the regulators look at, and virtually only look at, are the studies submitted by the corporations. Most of these studies by the corporations are regarded as commercially confident. We the public, but also interested scientists and researchers, cannot have access to them. They're hidden.

The regulators make decisions on the safety of poisons in our food and environment based on the data that the company gives them. No one else is allowed to look at those studies to evaluate them and see, "Are these good studies? Are the regulators making a good decision?" No. It's hidden. To me, that's another sign of corruption. If these were good studies, why are they frightened of a transparent and open system? Why don't they publish them and why don't they allow independent scientists to review them and peer review them if that's the gold standard of science?

JM: Yeah. Isn't it true that many of these standards are set based upon the science submitted by the very company that's seeking to sell and widely distribute these chemicals? The general perception is that we have these federal regulatory agencies that are objective and do independent testing to validate the safety of these things. But that doesn't appear to be the case. Is that right?

AL: Yeah. Exactly. That isn't the case. The regulatory agencies rarely do any testing to base their data and their assumptions on the testing that has been done by the companies. As I've said before, no one else can get access to these studies. We don't know if it's good testing. When we do get access to them through freedom of information, most of these studies are of poor quality. Most of them actually show a whole range of diseases and risks. The conclusion that most scientists, independent scientists who would look at these studies, show that these chemicals are harmful and they should be banned or severely restricted.

JM: Yes, indeed. It's the classic tragedy of that. When they're doing the studies themselves, they have massive conflict of interest. That's widely acknowledged and recognized as a primary factor in invalidating the science. What is your perception – You've looked at the literature quite extensively and reviewed and spent lots of time in the literature with this. What's your perception of the most significant threat that exposure to these pesticides pose?

AL: When it comes to children, for a start, there's no specific testing done for children. There's absolutely no published scientific evidence to show any level of safety. On the other hand, the studies show that there is no lower level that is safe for children. Children, when we want to talk about the unborn, the newborn, grown children up to puberty, they do not have the detoxification enzymes in their livers that we have as adults. Particularly for young children, that means that they have no way of detoxifying even the smallest amount of a pesticide or a chemical.

The evidence shows that even these small amounts, when children are exposed in-utero, in the womb, breastfeeding or at a young age, it severely affects the way that they develop. It affects the nervous system. It affects the hormone system and the reproductive system. When you look at the science, we can see there are so many areas that can be negatively affected by these small amounts. Unfortunately, a lot of these effects last a lifetime. And also, we know some are intergenerational. Those children's grandchildren will be affected.

JM: Alright. One of the concerns is that because of children's immature detoxification system that they're not going to be able to metabolize these toxins. They can cause effects. What are some of the clinical signs or symptoms or greatest threat to the health, from your perception? Are we looking at malignancies, tumors or other hormone or endocrine disruption disorders?

AL: The answer is yes. We have a lot of evidence of malignancies and tumors. If you look at the World Health Organization's (WHO) figures on children's cancers, they are skyrocketing, increasing. We have good evidence, good studies linking back to small amounts of pesticides in food.

The other really critical one has to do with endocrinal hormone disruption. This is where we know that parts per trillion will affect the orderly development of the fetus, of the unborn child, and also, the grown child, up until puberty. A part per trillion is the equivalent of one drop in three Olympic-

sized swimming pools of water. Or another way to put it, if you have a train that carries water that's 20 miles long, and you put a drop in that. That's a part per trillion.

These parts per trillion are significant in the normal development of a child, because at different times, the genes tell hormones to come on and develop different parts of the body, like the reproductive system, like arms, legs, eyes and the brain. If these signals are disrupted by these chemicals that mimic hormones, that upsets this whole normal growth pattern of children. In fact, it's called a programming event. It can affect them for the rest of their lives.

JM: These are some of the side effects of these. But I want to get back to the safety data again and approach it from a different angle. Even if we were to give them the fact that the safety studies that are self-done and severely conflicted were accurate, which the likelihood is very, very low – but even if it was true, and there was relatively limited harm or danger from that specific single chemical – no one – let me emphasize that word quite a bit – no one, no agency, no organization, is looking at the synergistic combination of the massive amounts of exposures that we have. Can you address that?

AL: Yes. What you've raised is one of the really important issues. In the normal production of any agricultural product, any crop, there are multiple pesticides that are approved. Say, different herbicides that kill weeds, fungicides, insecticides and so on, with the expectation that all of them will be used in a normal crop cycle. As a result, when food is tested, most food have multiple residues. On top of that, because we eat a variety of foods, the majority of people are getting this cocktail of different pesticides, along with the other cocktails of all the chemicals we have in the house – the cleaning products, the phthalates, the plastic softeners and other volatiles.

This mixture, there is absolutely no scientific evidence or testing to show that it's safe. But independent testing — testing done by independent scientists — show that these cocktails have synergistic effects. When we talk about synergisms, where instead of an additive effect, where one and one equals two, in synergism, one and one can cause three or four. We have examples where one and one can equal more than 1,000 in toxicity. The effects are multiplied.

This is a huge issue because not one regulatory agency in the world is doing anything about it. Regulatory agencies, like the U.S. EPA, like the European Food Safety Agency (EFSA), they are tasked by their governments to take this into account. They're supposed to have been doing this for the last 20 years, and not one has done anything on anything whatsoever.

JM: I want to make this a little bit practical, because it's real easy to ignore this information because there's no tangible impression or understanding of how it impacts you specifically. Well, I'm going to share with you something that we're going to write an article on later this year, because I just got back last week the report, the comprehensive report, of my drinking water. This is not the water I drink, because I put it through a whole-house filtration system, and I do a reverse osmosis on top of that.

You talked earlier about parts per trillion. Well, I'm going to tell you the chemicals that were in my drinking water. Just some of them because the list is literally 50 or longer of some of the ones you may know that are in the water, ranging from 3 to 11 parts per trillion, in the drinking water.

Atacor, atrazine, lindane, chlordane, endrin, heptachlor, epoxide, simazine, toxifin, 2,4-Dichlorophenoxyacetic acid (2,4-D), dalapron, dinazeb, pentachlorophenol, carbofuran, oxymel and glyphosate. But glyphosate was not in the water from 3 to 11 parts per trillion. It was in the water at 4,200 parts per trillion, 4,200. That's insane.

Folks, I don't live in an area that they're picking at me, or they're targeting me because I'm posting information about health and they want to take me out. That's not the case at all. I live in a normal community. The odds are is that you're living in a community where this is in your water supply. I would strongly encourage you to get a report from your local authorities. They, I think and believe, are mandated by law to test this annually, and are required, if you're in their community and you're a tax-paying citizen where they're giving you the water, to provide you with a copy of this analysis for free, no charge to you.

The report, if you want to do it yourself, is probably hundreds, if not thousands, of dollars. You can get it for free, and then you'll see for yourself that I'm not pulling your leg, that it's in your drinking water. If you're drinking this, you have a problem. Why don't you address the drinking water and the secondary contamination that we have in our unfiltered, municipal water supplies? And then how that compares to some of the other occupational exposures.

AL: You've raised a really important issue. There's one very good study done by Dr. Warren Porter and colleagues at the University of Wisconsin Medicine, where they looked at the normal contamination of pesticides, herbicides and fertilizers in the drinking water in the Midwest, in the U.S.A. They found that it caused severe development problems in baby rats, and, of course, issues like thyroid problems, which is one of the master glands.

Another really important issue is the normal development of the nervous system. We know that many of these chemicals and many of the ones, such as glyphosate, that you mentioned in your drinking water, we know actually stop the normal development of nerves in children – our brain. That's our biggest concentration of nerves. That is developing in the fetus, in the newborn. It's developing, in a large way, up until we finish puberty.

The evidence shows now that many of the diseases like ADHD, attention-deficit hyperactive disorder, the autism spectrum of disorders, the bipolar schizophrenia spectrum – we're also looking at issues like anger management and a whole range of behavioral problems that we're seeing in children – go back to these very small quantities of pesticides in our food and actually in our air and in our water. They pervade the environment.

JM: Yes, indeed. I mentioned earlier in your bio that you're really interested in organic, regenerative agriculture, which is actually becoming the new standard, because organic conventional certification has become bastardized and loop-holed. The "death" word means virtually nothing now, because there are so many exemptions that you can have a food produced that's loaded with pesticides and still be technically certified organic. Yes, it's true, folks. You have to be aware of that.

But in an effort – We've been strongly encouraging people to revert back to World War II days, where 50 percent of the food, or nearly 50 percent of the food produced in the U.S.A. was produced

in people's yards. That's true. But now, that was at the beginning of the chemical revolution. Were there some pesticides in the water supply back then? Yes. But nothing like today. Nothing like today.

The point of this tangent is that if you seek to grow your own food, you're going, most likely, to have to irrigate those crops. Maybe you live in an environment where you get enough rainfall where that's not necessary, but I think most people are going to need to use some irrigation. If you're using irrigation, that water is going to have the same damn chemicals in the list I mentioned earlier. Unless you're filtering it and you're doing organic, regenerative agriculture, you're putting contaminated water on your food. Can you address that from not only your knowledge of examining this issue and the pesticides, but also as a regenerative agriculture person?

AL: I've been working in the area now since 1971, and I am a farmer. I've also been involved in testing regenerative and organic farms. One of the key areas that we talk about is increasing the amount of soil organic matter. What we know that does is it sort of works like a buffer. It traps these chemicals. While these chemicals are in the environment, they actually get trapped in the organic matter.

When we test the products, we find that the vast majority of them are actually free of these chemicals. We have good data on that. We also know that in these good agricultural systems, where we have good levels of organic matter, we have the various soil microbes. We have a whole biota. In fact, the most diverse ecosystem on the planet is the soil, the carbon in the soil. Those microbes actually degrade the poisons.

We can do soil tests. Sometimes they take over a conventional farm to do the soil test and find the chemicals in it. After a few years, you see these chemicals disappear. When we test the produce, it's free. The other point I want to make too, which is also very good news for parents, we have data that within days of switching children to organic food, that their bodies eliminate these chemicals, and they are largely free of chemicals within four days.

JM: Well, I would question that statement. I would think it's true only for water-soluble toxins, like glyphosate, which is water-soluble, which is why it's such a pernicious toxin, because it is water-soluble and it goes in the water supply. It goes up into the rain. It contaminates all these systems. But the fat-soluble toxins, which are really the majority of the pesticides, I don't think you're going to eliminate them in days. They get stored in the adipocytes, the fat cells. Unless you go through a pretty aggressive detox program – I'm writing one of my future books on that, so I've got some familiarity with this – it's going to stay locked up in your cells, even if you're eating the best diet in the world.

AL: You're right. The previous ones are locked in the fat. This is a big issue actually, particularly for women, because women generally have more of a fat layer. They have a higher burden of these chemicals. What happens is that these chemicals mobilize and will cross the placenta. They also go through as breastmilk into children. This is why it's very important for parents, before they conceive, to actually eat organic food and start the process of detoxifying and getting these fat-soluble toxins out of their system.

JM: Yeah. And fasting is a big part of that, as is using an infrared sauna. Just sweating would be useful. But that's a whole different strategy. Ideally, it could take years to effectively eliminate the majority of these, but it's a lifelong process, because we're continually exposed to these things. There's no way we're going to change the system.

But I want to get back to some really interesting points that you made about the carbon content of the soil, and its ability to remediate these toxins. In your review or your experience, do you find that the higher the carbon concentration, there is a really close correlation to the microbial life in the soil, specifically the mycorrhizal fungi? If so, what is sort of the threshold where you start to see some become less concerned about these pesticide exposures in the irrigation water if you're above a certain level? Is it 3 percent carbon? Four or 5 percent?

AL: The threshold I like to use is around 3 percent. We start seeing positive changes at about 1.5 percent. The thing is to remember that many of our agricultural soils around the world have less than 1 percent. In most places, they start at 0.5 to 0.6 percent.

JM: Yeah, or even more. The Midwest was like in the tens.

AL: Yeah. Through using bad practices, particularly nitrogen fertilizers. It's being oxidized and turned up into greenhouse gases — the carbon dioxide (CO₂) — instead of being in the soil, instead of being in the soil as the basis of keeping microbes, the beneficial bacteria, the beneficial fungi — all of these are just essential to good crop growth. Actually, we also know that they're essential to the health of the plants and the food that we eat from those plants.

JM: Well, that's good to know, because at one point, 3 percent, or even certainly 1.5 percent is a pretty low threshold. Clearly, most commercial agricultural systems are well below that because of their practices. The soil really isn't soil anymore. It's just a substrate to hold the water and the chemicals that they're feeding the plants. It's not the way it was designed to be in any way, shape or form. But that is pretty easy to replicate.

I've got a system here. Even in Florida, which is notoriously difficult to get over 5 percent carbon, I'm probably at 8 or 9 percent. I haven't formally measured. I'm in the process of it. But just in my 4 or 5 inches of topsoil that I created with primarily woodchips, you wouldn't expect it to be anything but, because wood is completely carbon. When it breaks down, it's going to go right back into the soil. It's deep, dark and rich humic acid that you can see. It's just beautiful, and it supports plant life. It's good to know. I wasn't aware of that.

I actually installed a whole-house filter system on my irrigation water just to prevent that. It's better safe than sorry. I still think there's some potential synergistic toxicity, especially if you're essentially foliar spraying your plants. You've got dozens and dozens of these chemicals that are synergistically combining, which can't possibly be acutely beneficial for the plant. Certainly by the time they reach the soil, the soil microbes can take care of it. But when they're on the plant, that's not a good thing.

AL: Yeah. I agree with that. If you can get the water into the soil and we have high enough carbon levels, these molecules actually bond to the carbon. Because really, these pesticides are actually

synthetic organic molecules. They will bond to the organic matter and stay there. The plants actually take up the nutrients through a process called ion exchange. They can actively select what they need. They're not passive.

Suppose to say, in conventional agriculture or industrial agriculture, where they are force-fed these water-soluble fertilizers, they have no choice as to what they take up. Many of these fertilizers have lead, cadmium and heavy metals, and they're soluble. When you water with those, in the ground or spray them, they take up these heavy metals.

With an organic system, it's the other way around. These toxins bond with the organic matter, and the plants actively select which molecules they need, so they can avoid these toxins. That's when we find, when we do the testing, there's a huge difference. Even if they're growing in the same region, there's a huge difference in the amount of toxins in organic food as against conventional. The largest study just came out a few years ago, which is actually a meta-analysis of something like 300 comparison studies between organic and conventional, found that organic food always has significantly lower levels of these toxins and heavy metals.

JM: The converse too is this is also higher and nutrient-dense in the beneficial nutrients that you need.

AL: Yeah. I want to say that the latest studies show exactly that. When people said that there's no evidence that organic food has more nutrients, that's not true. The best scientific studies show that organic food does have higher levels, particularly in the various antioxidants. These compounds we know are protective compounds for us. The plants actually make them as protective compounds. That's their defense against pests and diseases.

When we eat these compounds, like lycopene in tomatoes or resveratrol in red grapes and so on, we actually get these benefits. How this actually helps us is it helps us deal with all these other toxins in the environment. By having a diet that's rich in the right nutrients and antioxidants, that gives our bodies a much better chance of dealing with this toxic burden.

JM: Yes, indeed. It would seem wise. You make a plea for pesticide-free commercial agriculture, but how realistic is that? What do you think are the alternatives if it's not realistic?

AL: I've been involved in this for 45 years. I know the best organic regenerative systems are actually higher-yielding than industrial agriculture. It's a myth to say that all organic is low-yielding. We now have good science on how we can actually grow nutrient-dense, healthy food, and [how] we can get higher yields per acre than the industrial systems. In fact, the industrial systems are running down the environment so quickly – they're producing toxic food – that this world will not survive if we continue to go down that agricultural pathway.

The only way we're going to survive is by going over to regenerative systems that we know are good for the environment, increase biodiversity, increase the health of regions, and make sure that we don't have all these poisons going into our water supply, air supply and our food. At the same time as avoiding these poisons, would be growing food that helps to regenerate our health. It helps protect us against degenerative diseases, against toxins. Really, this is win, win, win.

JM: Yeah. It also protects the environment too. As you mentioned or alluded to earlier, the earth is really one of the ideal carbon sinks, the earth and the ocean. Instead of allowing it to go up and escape into the atmosphere and cause problems with greenhouse gases, it's much better served to be in the earth, feeding the microbes and producing these nutrient-dense foods. That's where it was designed to be. It wasn't designed to be liberated. Movement in this direction is a triple win. Go ahead. You can comment on that.

AL: I was going to agree with you that this is actually a really important issue, because one of the other major issues that we are facing is climate change. It's a huge issue. It's getting worse and worse all the time. We know that with regenerative farming, where we're actually increasing these organic carbon, we can reverse climate change. Not just stop it. We can bring it back to the way the climate was supposed to be before the industrial revolution. Because all that carbon that we put in the soil, that our plants take that out in the atmosphere as CO₂, that then gets deposited into the soil as soil organic matter.

We have the data that if we can convert farming to regenerative practices, we can actually reverse climate change within 30 years, less than a generation.

JM: Yeah. That is just amazing. I've just picked up a parcel of property next-door to me that's vacant. It's about an acre. I'm loading it with woodchips and other biomass as a substrate. But then once that's finished, I'm going to grow cocktail cover crops, primarily clover and like a dozen or more of different species, and let that thing grow, suck in the CO₂ from the atmosphere as fuel and deposit that in the soil, and not only deposit the carbon, but also clover is beautiful because it has these nitrogen-fixing bacteria on it that increase the nitrogen in soil, because that's usually a rate-limiting nutrient. If you have woodchips, they're pretty notorious for being heavy in carbon and virtually no nitrogen. It's a great combination.

If you've got the time and energy, you need to do it. That's a magnificent way. I'm really excited. I'm going to document this all on video or pictures and show what you can do, because I think it's just magnificent. If you just apply simple, natural and relatively inexpensive strategies, you can have massive remediation and enormous biological benefits.

AL: In fact, what you propose is one of the quickest and most efficient ways of improving carbon. With the long-term carbon, the humic acid, actually comes from the lignins in wood. If you cut wood, tough, coarse plants, they are the ones that actually give you that long-term carbon that we want to buildup and actually make humus.

Humus is the most important part of organic matter. It's the one that connects and store up to 30 times its own weight in water. It drought-proofs you. You can use a lot less water. It stores water better. It actually stores most of the nutrients and stops them from leaching out into waterways and create dead zones, like the whole gulf area, south of the Mississippi. There are lots of these dead zones around the world now. The advantage of humus is that these nutrients don't wash out. They actually stay on the farm and feed your plants. That's where you want them.

JM: Yeah. Perfect.

AL: There are many other benefits that actually come from having this humus-rich organic matter systems.

JM: Yeah. You can create it. I mean you have to be a little intelligent about it. But it's certainly possible. It's just a brilliant project that benefits you and your family. One of our strong recommendations is to be involved in a local, either in your own home or own area or community, growing your own foods. There are some simple strategies to do that. Getting back to your book though, what advice do you have for parents to protect their children from these pesticide residues?

AL: It's very simple really. Firstly, don't use these pesticides in the house and garden. You don't need them. There are multiple books on alternatives. It's a bit like when people say, "What's the alternative?" That used to be the argument for keeping lead in our gasoline. They say, "We have to have it, otherwise the engine's going to knock." Now, is anybody worried about the engines knocking? No. We never needed lead. It's the same with pesticides. We don't need these synthetic pesticides. There are lots of natural ways that we can deal with these in the house or garden.

The other really important thing is where possible, try to get as much of your food as organic. Make sure it's seal-certified or you know it comes from a community-supported agriculture (CSA) or a local farmer's market — people who you can trust and you know are doing the right thing. Get your food that way. Avoid processed foods and go back to the way food is supposed to be, which is fresh and local, whenever possible. Cook real food.

Avoid all this processed food, which not only is denatured in terms of the nutrient value, it's got all these different additives that we also know are toxic. Once again, there's no science to show that they're safe, but we're learning more and more about the dangers of all these food additives. Just go back to eating good, fresh and healthy food. It's going to make a huge difference to your children and to yourself as well.

JM: Yeah. Sounds simple, but it's profoundly effective. Do you have any other recommendations that you'd like to make before we close?

AL: I think probably the big recommendation is that, "Change always comes from people, not from governments." You have to make this change yourself. It's simple to make. If enough of us are making this change, we'll actually change agriculture because the retailers and farmers will be forced to change production to meet the market. Buying organic food, buying local food, going to CSAs, is actually a very powerful political and change act. Your dollars will do more to change the system than probably anything else.

JM: Yes. You can vote with your pocketbook. We've already made quite dramatic improvements in positioning the responsive industry to these influences. We can do it. It's just a matter of not only doing it yourself, but it's certainly by leading the examples to your friends and relatives, and encourage even more people to do it. Because the more people who are involved, the stronger the incentive is for industry to start changing their destructive and toxic practices. Thank you so much for joining us. We appreciate it.

AL: Thank you so much for having me on. I really, really appreciate it. Thank you.

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