“The eco-judgement against Coop runs counter to science”

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We are surprised to see how Professor Emeritus Torbjörn Fagerström is dealing with scientific facts, when he dismisses the study behind the so called ecological effect. To call the measured level of pesticides “disappearingly small” is to set aside science as well as the judgement from the European Food Safety Authority, writes the Professors Thomas Backhaus and Christina Rudén in a reply.

In a debate article on SvD Debatt 4th of July 2017 Torbjörn Fagerström is expressing joy about the fact that a judgement in Patent and Registration Office is dismissing the so called ecological effect; that means the effect when the levels of convenient chemical pesticides decrease in our bodies when we switch from food being sprayed with these substances, to ecologically cultivated food. He also concludes that “scientific research is not a playhouse”.

We agree of that of course. That is why we are surprised on how Fagerström himself is dealing with scientific facts when he dismisses the study behind the so called ecological effect and claims that the measured level of pesticides in the bodies of the family which participated in the study “was disappearingly small – they were measured to between one per thousand or one per ten thousand of the levels that can be scientifically proven to have an effect.”

Is that really true? Let us see what science says.

One of the substances that was analyzed in the urine of the family members was TCP, a degradation product of the chemical pesticide chlorpyrifos. Chlorpyrifos is an insecticide well known for its toxicity – especially for it’s harmful effects on children and brain development.

In the study “The ecological effect” you could see that the family members had received chlorpyrifos equivalent to between 0,2 and 1,1 micrograms per kilogram of bodyweight and day. 1 microgram is equivalent to 0,000 001 grams. Incredibly little you can say. But is it safe? The risk is partly depending on the amount of the substance the body is exposed to, but also of the substance’s toxicity. The European Food Safety Authority (EFSA) has limited the amount of chlorpyrifos that is considered safe to be exposed to. This value is 0,000 001 grams per kilogram of bodyweight and day. With other words, the study “The ecological effect” shows that some family members had achieved chlorpyrifos on levels exceeding the limits, when they ate food sprayed with pesticides.

In addition, both CCC (a straw shortening agent) and ETU (a degradation product of a fungicide) was found in the family member’s urine, of concentrations equivalent to 10 percent of the limit value for each substance. It can sound satisfactory, but the study only comprises 8 of the just under 500 pesticides available on the European market (most of the food we eat is cultivated in Europe). A severe weakness in the legal framework is that the limits are being decided on one pesticide at a time. The limit does therefore not acknowledge that we are being exposed to a cocktail of pesticides and many other chemicals at the same time. There are already a lot of knowledge available about “the cocktail-effect”, which

clearly shows that mixing chemicals can be toxic, even if the concentration of each inherent chemical is harmless. The challenge now is to convert these ideas into the legal framework so the limits also protect against “the cocktail-effect”.

Most pesticides analyzed in the study “The ecological effect” is already known to be, or suspected to be, endocrine disrupters. Endocrine disrupters can especially be harmful to fetus and children at very low concentrations. As late as last week, the European Union finally decided on a juridical definition on endocrine disrupters. Now remains demands on tests and to build up a process on risk assessment for endocrine disrupters.

The pesticide industry themselves has assessed that about 10 percent of all approved pesticides today will be assessed to be endocrine disrupting for humans. The substances that are endocrine disrupting are not allowed to be used as pesticides and will be banned when the new rules apply.

”The ecological effect” is not a perfect study. It did not measure chlorpyrifos for example, but a degradation product of the substance instead. In one family member, the level surprisingly increased after the transition to ecologically cultivated food. We would of course rather examine more people and analyze many different pesticides. But the fact that the study has weaknesses does not mean you can totally dismiss it. That there sometimes exist residues of chemical pesticides in our food is very well known. That we achieve these chemicals when eating is obvious. That these subjects, or their degradation products, is measurable in our bodies is not new. And, finally, that the levels in our bodies decrease when we stop eating food containing these chemicals is totally logic and expected. The results therefore confirm what is already scientifically proven. If “The ecological effect” was the only scientific study available we would not be convinced, but together with the rest of the scientific knowledge in the field, the study shows that the levels of conventional chemical pesticides in the family decreased when they switched to ecological food.

Of course, there are still some questions. But because we don’t know everything it does not mean we don’t know anything. And just because we cannot quantify all risks in detail, it does not mean the risk is zero. So, the question is how we act when science doesn’t have all the answers? Instead of investing time and money in questioning “The ecological effect” in court, the pesticide industry could have chosen to solve the issue and repeat the study. Or conduct a larger study, including more pesticides and more people. In that way, they could contribute to better knowledge about what pesticides there are in our bodies and in what concentrations.

The court’s judgement goes against the whole science in the area, and it does not contribute to reach the national resolution of a “toxic free environment”. If that is something to be happy about? Well, what do you think?

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