The agriculture industry group on Public Eye's “Pesticide Atlas”

A distorted image of modern plant protection with familiar accusations and questionable figures

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The agriculture industry group decisively opposes the Swiss edition of the “Pesticide Atlas” recently published by NGOs. The supposedly scientific study paints a picture of the agrochemical industry that does not correspond to reality and is based on tendentious accusations and sometimes questionable figures. The Atlas fails to answer the central question of a sustainable food system and the resolution of trade-offs between food security and agro-ecology.

In Switzerland, politicians, agriculture and industry are facing the specific challenges of ensuring sustainable use as well as finding new ways of reducing the risks of plant protection products. Meanwhile, the recently published “Pesticide Atlas” by Public Eye and the Heinrich Böll Foundation tries to reopen old sores by sometimes unfair means: the atlas contains numerous errors, methodological deficiencies and well-known tendentious misinterpretations of figures and arguments. This publication is entirely unsuitable for scientific discourse.

Contrary to their portrayal in the “Pesticide Atlas”, the companies in the agricultural chemistry sector as an innovation sector are providers of solutions and responsible employers with their finger on the pulse of the times. Research and development enable technological innovations and new active ingredients that can be used in conventional or biological production. In this way, the industry is actively helping to make the food systems of the future more sustainable. Ecologically, economically as well as socially. Against this background, it is important to the agriculture industry group to correct the most important misinformation and allegations:

Incorrect statement #1: Uncertain approval procedures

In actual fact, plant protection products are among the most studied chemicals in the world. This is due to the stringent testing procedures they must pass before being approved[1].

Plant protection is a technology that supports civilisation.[2] Together with fertilisers and improved breeding methods, it has now made it possible to feed more than 8 billion people worldwide on virtually the same area of agricultural land instead of only 3 billion. Plant protection is a driver of innovation. At the same time, the quantities of active ingredients used per hectare have decreased by over 90% since 1960 and acute toxicity has dropped by 40%.

In order to minimise potential risks, the requirements for approval have increased steadily over the past few years. For older active ingredients, the available approval data sometimes no longer meet current approval requirements. Manufacturers are then requested by the authorities to submit additional data in the form of new studies. If a better active substance has since become available that works in a more targeted manner, for example and sensible resistance management can be ensured even without the older active substance, the industry will refrain from submitting new data and the active substance will be withdrawn.

[1] https://www.blv.admin.ch/blv/de/home/zulassung-pflanzenschutzmittel/zulassung-und-gezielte-ueberpruefung/zulassungsverfahren.html

[2] Abbreviated quote by Prof. Dr. Andreas von Tiedemann, Georg-August-Universität Göttingen, https://swiss-food.ch/artikel/pflanzenschutz-ist-eine-zivilisationstragende-technologie

The situation is different with the so-called substitution candidates. For these substances, regular investigations are carried out to see whether there are potentially less risky solutions. If this is the case, the old substance is withdrawn from the market. For example, copper, one of the most important plant protection products in organic farming, has because of its persistence and toxicity been a candidate for substitution since the introduction of the comparative assessment[3]. This means that copper has to be replaced as soon as comparable active substances are available.

The reorganisation of the Swiss approval system for plant protection products represents an opportunity. On this point, industry agrees with the authors of the "Pesticide Atlas". Compared to other countries, the current Swiss approval procedure has been very slow for many years. This is not expedient for companies that invest a great deal of money[4] in researching and registering in Switzerland. At the same time this is to the detriment of regional agriculture and, in particular, environmental protection as new substances are usually more specific, more effective and more environmentally friendly.

Wrong statement #2: "Every year, 385 million people worldwide fall ill with poisoning from plant protection products"

In actual fact, the approval, marketing and use of plant protection products are regulated by numerous international and national laws and regulations. At the same time, the competent authorities constantly monitor the quality of agricultural products and foodstuffs which may contain residues of plant protection products. The aim of all measures is to exclude risks to people and the environment.

The report claims that 385 million people worldwide contract poisoning from plant protection products every year. Statistically, this would be one in every 20 people. However, a look at the list of sources reveals that reference is made to only one publication[5] published by the NGO Pesticide Action Network (PAN), which also contributed to the Atlas. This publication contains numerous inconsistencies and methodological shortcomings.

There is no definition of the term "pesticide poisoning" used by the authors. They also do not make a clear distinction between exposure and poisoning when collecting data. This artificially inflates the total number of "people affected by pesticide poisoning." A look at Germany reveals that this number has nothing to do with reality: according to a pilot study[6] by the German Federal Institute for Risk Assessment (BfR), only 1.4% of all evaluated poisoning reports related to contact with pesticides. However, the majority of these injuries concerned eye contact with disinfectants, which, as biocides, are also classed as pesticides[7].

Wrong statement #3: Pesticide residues pollute our food

In actual fact, never before has our food been as safe as it is today. This is confirmed by regular investigations by supervisory authorities at both the Swiss and European level.

The argumentation and rhetoric used to talk about the problem of residues have the objective of scaremongering. However, the facts show a completely different picture. Together, the European monitoring programmes provide one of the world's most comprehensive food data collection services: each year, more than 75,000 food samples are analysed for more than 600 different pesticides. Goods from non-European countries as well as active substances that are banned in the EU but are permitted abroad are also examined.

The most recent data[8] collected in 2019 showed that 96.1% of the 96,302 food samples were below the strict maximum residue level. 3.9% of the samples exceeded this limit, of which only 2.3% did not meet the requirements. Multiple residues are also recorded. The presence of multiple residues does not constitute non-compliance with the legal requirements concerning maximum residue levels as long as individual pesticides do not exceed the statutory limits. However, products with multiple residues are carefully examined (e.g. with regard to whether combinations of plant protection products are deliberately used to circumvent maximum residue levels for individual substances).

[3] FSCO: PPP with particular risk potential
[4] The Cost of New Agrochemical Product Discovery, Development and Registration 1995 to 2014, Phillips McDougall, March 2016
[5] The global distribution of acute unintentional pesticide poisoning: estimations based on a systematic review (2020), BMC Public Health
[6] Poison monitoring of pesticides in Germany: answers to frequently asked questions – Federal Institute for Risk Assessment (BfR)
[7] Fact sheet Pesticides or plant protection products? An explanation of the term
[8] The 2019 European Union report on pesticide residues in food, EFSA Journal, Volume 19, Issue 4, April 2021

Wrong statement #4: Productive agriculture harms biodiversity

In actual fact, productive agriculture is compatible with the conservation of biodiversity. This requires coordinated landscape management with measures that integrate the requirements of both objectives – the secure supply of food on the one hand and the protection of the ecosystem and biodiversity on the other.

The global decline in biodiversity and insect populations is a multi-causal phenomenon that the agriculture industry group believes should be taken seriously[9][10]. A lack of habitats, surface sealing (e.g. due to buildings and roads), an increase in light sources, a lack of protection for biotopes and emissions of substances into the environment all play an important role[11]. Accordingly, it is important to take genuinely effective measures that cover all areas of life. A unilateral apportionment of blame to the agricultural sector disregards the objective.

Even the claim that organic farming is more beneficial for preserving biodiversity than conventional farming can only withstand a thorough scientific review to a very limited extent[12]. It only performs better when the arable land that is cultivated is used as the yardstick. In contrast, in terms of crop yield (e.g. one tonne of wheat per hectare), significantly less biodiversity is lost under conventional farming. The reason for this is that more productive conventional agriculture returns twice the yield, which in turn prevents agriculture from expanding into forest areas and nature reserves in order to increase productivity (due to the growing world population).

Soil cultivation and harvesting have a particularly strong influence on biodiversity, resulting in short-term fundamental changes in environmental conditions and habitat characteristics. By comparison, the use of chemical-synthetic pesticides, which are often the focus of environmental discussions, has a relatively minor impact. Of course, chemical and non-chemical plant protection measures also have an impact on plants and animals in agricultural areas. However, the biological effect of plant protection products, i.e. also the side effects on the natural environment, is intensively tested and evaluated as part of the approval studies. A plant protection product may only be used within a strictly defined framework if no unacceptable effects can be expected.

Wrong statement #5: Risks from pesticides in the air

In actual fact, previous research into the uptake of plant protection products by air has not been able to demonstrate any specific risks.

In Switzerland, the Federal Office for the Environment (FOEN) carried out a pilot project entitled "Pesticide monitoring in outdoor air"[13] in 2021. The results of the human toxicological investigations showed a very calming picture. For example, the measured concentrations in the outside air (even assuming a worst case with long-term concentrations at the level of the possible daily peak value and also taking into account various measurement uncertainties for the general population) were hardly relevant. Other sources of stress include absorption through personal use, e.g. in the home and garden. To sum up, to date research into the uptake of plant protection products by air has not been able to demonstrate any specific risks.

Wrong statement #6: Companies take advantage of the weaker regulations in developing countries

In actual fact, when exporting plant protection products, companies adhere to strict international standards. In addition, there are products whose approval makes no sense in Switzerland.

International trade in certain chemicals is governed by the Rotterdam Convention, which is implemented in Switzerland by the so-called PIC Regulation (Ordinance on the Procedure for Information and Prior Consent for Certain Chemicals in International Trade, "Prior Informed Consent"). The companies represented by the agriculture industry group have always supported the objectives of the Rotterdam Convention for the protection of people and the environment.

As a general rule, approval of an export product is subject to the regulations of the target market. If the approval provisions in the importing country are not exactly identical to those in the exporting country, they are not necessarily prohibited exports. Here is a simple example: Switzerland's climate zone does not permit the

[9] FOEN: State of biodiversity in Switzerland
[10] Science (2020): Meta-analysis reveals declines in terrestrial but increases in freshwater insect abundances
[11] Loss of biodiversity: causes and consequences, European Parliament
[12] Teja Tscharntke, Ingo Grass, Thomas C. Wanger, Catrin Westphal, Péter Batáry: Beyond organic farming – harnessing biodiversity-friendly landscapes. Trends in Ecology and Evolution (2021)
[13] https://www.bafu.admin.ch/bafu/de/home/themen/luft/publikationen-studien/studien.html

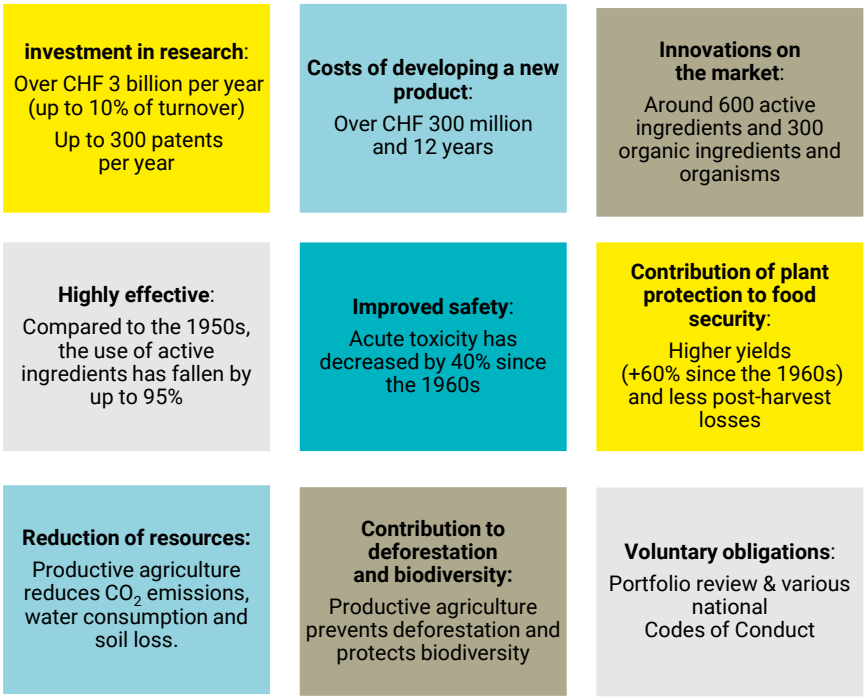
cultivation of bananas. They are also often exposed to other pests and diseases than those we have here. Accordingly, no plant protection products for banana production are registered and authorised in Switzerland. Active substances are always registered and approved where they are relevant for the respective plant cultures.

The claim that companies use weaker regulations in export countries to sell “dangerous” products can easily be denied. For example, most companies only sell products if they are approved in at least one OECD country or have a complete regulatory data package complying with the high OECD standard. And many exporting countries, as major agricultural countries, have their own extremely strict approval processes.

Our commitment to modern and sustainable agriculture

The companies in the agriculture industry group are characterised by their international competitiveness and high research intensity. Plant protection products contribute significantly to the global success of modern and sustainable agriculture (see illustration below). The agriculture industry group is interested in a critical and constructive dialogue with all stakeholder groups. The societal and agronomic challenges that lie ahead can only be overcome by working together and engaging in dialogue with one another. Together with our partners and critics, we want to make our contribution to sustainable agriculture.

Key facts and figures on the plant protection industry worldwide:



The **agriculture industry group** brings together plant protection specialists from BASF, Bayer, Leu+Gygax, Omya, Stähler and Syngenta. The group is committed to finding innovative and environmentally friendly solutions in the field of plant protection.