

The Dirty Portfolios of the Pesticides Industry

Product Evaluation & Ranking of Leading Agrochemical Companies

A report by Greenpeace Germany

GREENPEACE



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Imprint

Editor: Greenpeace e.V., Große Elbstr. 39, 22767 Hamburg, Germany, phone +49 40 30618-0, fax +49 40 30618-100; v.i.S.d.P.: Manfred Krautter; authors: Dr Oliver Worm, Katja Vaupel; title photo: © Holde Schneider/Greenpeace; printed by: edp, Virchowstr. 12, 22767 Hamburg, Germany, on 100 % recycled paper; circulation: 200 copies; June 2008 (revised edition)

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Product Evaluation & Ranking of Leading Agrochemical Companies

BASF



Bayer Crop Science



Dow AgroScience



Monsanto



Syngenta



A report by

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June 2008

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1 Action to Be Taken – Statement by the Editor

This report is unique in several ways. It is the first ranking of the world's leading pesticide-producing companies based on the risks and effects of their pesticides on human health and the environment. It is based on 14 hazard criteria, taking into account deficiencies in existing data concerning their toxicity. It also considers the risk of "hidden" pesticides whose presence in food cannot be monitored properly. Finally, it estimates the release of these pesticides into the environment – an exposure factor. All these factors are compiled and transformed into a ranking of the pesticide portfolios of BASF, Bayer, Dow, Monsanto and Syngenta. This report is the Black Book of the pesticides industry.

Can these companies claim to be clean and sustainable? No. Their portfolios are to a large extent full of dirty pesticides which are highly dangerous and damaging to human health and to the environment. Yet at the same time most of the companies' portfolios contain pesticides which pose a significantly lower risk to human beings and nature. This demonstrates that the chemical industry can do better if it chooses to. As long as conventional agriculture resorts to pesticides, only such lower-risk substances should be used. Such a change towards low hazard solutions is possible, and it does not have to mean that the companies analysed in this report will be forced out of business.

Substitutes for high-risk pesticides can and should be non-chemical if possible. Beneficial insects, as natural enemies of detrimental insects, are only one highly efficient and environmentally friendly alternative to many insecticides. Such alternatives should be supported by national pesticide reduction plans. Also, the pesticides industry should diversify its instruments by investing in such non-chemical methods. Not only the environment and consumers, but also workers in agriculture will benefit from such changes. This is very necessary since, according to the WHO, 20 000 to 200 000 agricultural workers still die every year as a result of fatal pesticide poisoning, not counting all the illnesses caused by these substances.

Pesticides have to be authorised for use in most OECD countries. A reform of the EU legislation for the authorisation and application of pesticides is high on the political agenda now. The pesticides industry is lobbying heavily in Brussels in order to influence this new legislation, with the aim of being allowed to continue marketing even carcinogenic, mutagenic and reprotoxic pesticides—substances which should not be released into nature and sprayed on our food at all. The recently published Greenpeace study "*Black List of Pesticides*" reveals the deficiencies in the current legislation. About 170 pesticides currently used in the EU and 327 pesticides used on a global scale pose very high risks to human health and the environment, and must be candidates for phase-outs.¹ Greenpeace is calling upon all those actively involved in the food chain to establish better legislation in the EU, triggering a change towards much healthier methods of plant protection. Organic agriculture proves that it is even possible to do without agrochemicals altogether. Companies should opt for voluntary phase-outs, as some supermarket chains in the UK have already done, by establishing their own pesticide black lists. This year a number of German supermarkets announced that they would be following this example.

This study provides new insights into the burden and damage caused by the pesticides industry to our health and to nature. Its results should not be ignored:

¹ Literature and materials used or mentioned in this paper, as well as further reading, may be found on page 36.

Consequences for politicians:

No authorisation of pesticides / active ingredients which are:

1. Carcinogenic, mutagenic, reprotoxic (categories 1 & 2)
2. Endocrine-disrupting, neurotoxic, immunotoxic
3. Listed as priority substances by the EU Water Framework Directive
4. Ecotoxic e.g. toxic to bees, fish, birds

Demands

There should not be any authorisation of active substances in the EU which cannot be analysed in food by EU reference laboratories using routine methods.

Levies / taxes on pesticide sales (as already exist in the UK, for example) should be introduced in order to fully cover the cost of analysing food, drinking and surface waters for pesticides, bio-monitoring of humans and wildlife, effective controls to ensure proper application in agriculture and training of farmers by states institutions.

There should be full publication of the results of state-run food control institutions, including the name of the manufacturers and retailers of products analysed.

The EU has to make it an obligation for the pesticides industry to publish data on the amounts of individual pesticides manufactured and sold per year.

Organic agriculture, which works entirely without synthetic pesticides, is the best and most sustainable option and should be promoted.

Consequences for investors:

Potential and actual shareholders of the companies covered in this study should not be investing in the pesticides industry any more. Investment funds that adhere to ecological, social, sustainability or ethical principles should avoid at least the top three companies covered by this report, if not all of them.

Consequences for those actively involved in the food chain:

No application of pesticides containing active substances listed as "black" or "yellow" in the Greenpeace Study "Black List of Pesticides", and no application of pesticides listed in the Greenpeace Study "Limits of Pesticides Analyses" as not being detectable with routine methods carried out by private and public pesticides laboratories.

Consequences for the pesticides industry:

Pesticides industry must clean up their portfolios immediately. They should reduce the share of black-listed active substances by 20 percent annually, starting with the ones listed at the top of the Greenpeace "Black List of Pesticides". Within five years their portfolios should be free of such high-risk chemicals.

Comprehensive data on the toxicity, ecotoxicity and environmental exposure of active substances must be made public, independently classified and listed in widely available databases.

The industry should actively support the recommendations to politicians that are listed above.



Manfred Krautter

Editor, Greenpeace Germany, Department for Agriculture, Food Safety and Pesticides

2 Summary

Many of the pesticides used globally pose high risks to human health and the environment. Moreover, a great number of them cannot be assessed due to a lack of publicly available toxicity data. What is worse, many of them cannot be routinely analysed by state laboratories and thus it is not known to what extent they contaminate food and the environment.

In this report, the pesticide portfolios of the five top global pesticide companies – Bayer Crop Science, BASF, Dow Agro-Science, Monsanto, and Syngenta – which together represent about three quarters of the global pesticide market, are investigated and compared using the criteria mentioned above. It reveals which of these companies have the “blackest” pesticide portfolios and which companies have the highest detrimental impact on human health and the environment. This report is the first ranking of the leading pesticides producers based on environmental and health risk and hazard criteria.

Methodology

512 active ingredients are sold on the market by the companies under review. These active substances, which are used in pesticides, were identified by consulting an internationally-known database. They were rated by means of three criteria: known toxicological and ecotoxicological risks (“Black List” criterion), lack of publicly available data (“Yellow List” / “non-assessable” criterion), and lack of / shortcomings in the monitoring of food (“not routinely analysable” criterion). Two recently published Greenpeace studies provided the basis for this report: the “Black List of Pesticides” used fourteen toxicological criteria to judge the estimated 1100 pesticides currently in use, as a result of which 327 of them were blacklisted. This study also identified substances which could not be assessed due to the lack of available data in common databases. The study “The Limits of Pesticides Analysis” revealed that a great number of substances cannot be detected using routine methods, even by the best EU reference laboratories. For the final ranking, the market shares of the individual companies were used as a factor to estimate the pesticide amounts released into the environment (exposure factor). This criterion assumes that higher sales will correspond to higher usage, and therefore higher release of the respective substances into the environment. The companies refused to provide Greenpeace with any information about their own portfolios. Publicly available sales data were used to roughly estimate sales quantities. The results for each company were calculated for the total portfolio and by sector (herbicides, insecticides, fungicides and others). For the ranking, the three groups of hazardous/risky substances were weighted as follows: 2 negative points for each Black List substance, 1 negative point for each Yellow List substance and 1 negative point for each substance which cannot be analytically monitored properly in food.

Results

The top five companies all sell a huge quantity of highly hazardous pesticides. 240 of 512 substances (47 %) in the pesticides portfolios of BASF, Bayer Crop Science, Dow Agro-Science, Monsanto and Syngenta are on the Greenpeace Black List. The highest share of Black List pesticides were found in the category of insecticides, making them the most hazardous group of pesticides. At 60 %, Monsanto has by far the highest share of Black List substances in its portfolio. The pesticide portfolios of Bayer Crop-Science and BASF also contain numerous substances, around 50 % (Bayer 53 %, BASF 49 %) of which are highly hazardous and therefore listed on the Greenpeace Black List. The pesticide portfolios of Dow Agro-Science and Syngenta contain ca. 41% blacklisted active ingredients each. Monsanto not only has the highest share of blacklisted pesticides in its portfolio, it also has the worst portfolio regarding not routinely analysable substances.

No adequate data are available in common, publicly accessible databases for one substance in seven of all the pesticides investigated. Thus the hazardousness of 80, or 16 %, of the ingredients brought onto the global market by the top five pesticides companies could not be assessed due to lack of information. One substance in six marketed by Bayer, Syngenta, and Dow cannot be evaluated. And the portfolios of BASF and Monsanto also include many substances which cannot be reliably assessed.

Furthermore 42 % (213 of 512) of the pesticide substances covered in this report can hardly be detected by laboratories in their daily work. Nearly three fourths of the substances made by Monsanto and more than 50 % of the substances made by Dow cannot be so analysed. Although merely 65 % of BASF's substances can be routinely detected, this is still the best value when comparing the five companies – nevertheless, more than one third cannot be detected by routine laboratory work.

Having evaluated these three criteria and additionally multiplied the results by each company's share of pesticide sales in the global pesticide market, the resulting figure indicates the overall negative impact of each pesticide portfolio on human health and the environment. The resulting rankings reveal significant differences between the five companies: Bayer and Syngenta head the top five companies by far relative to the total number of points and multiplied with the share of sales. BASF and Monsanto come in second. Dow follows as the last company with merely nearly half of the account of Bayer.

Conclusion

The study shows that there are considerable differences between the size of the negative impact which the pesticide portfolios of BASF, Bayer Crop Science, Dow Agro-Science, Monsanto and Syngenta have on human health and the environment. However none of them has a clean pesticide portfolio. Each of the top companies in the pesticide market poses significant risks and causes severe damage to the environment and human health. The companies have vast pesticide sales of around € 18.5 billion per year (data for 2007). A large part of this is generated through highly toxic pesticides. To stop the irresponsible sale of highly hazardous substances, the EU must in future withdraw its approval for such substances. All enterprises actively involved in the food chain must substitute the high-risk pesticides named in the Greenpeace Black List. The EU and its member states must support the development and application of non-chemical alternatives. A full list of measures to be taken is given in the foreword "Action to Be Taken".

3 Introduction

The goal of this report *The Dirty Portfolios of the Pesticides Industry - Product Evaluation & Ranking of Leading Agrochemical Companies* is to rate the pesticide portfolios of the five market leaders in this industry in terms of their hazardousness and the risks they pose to human health and the environment, and to rank the respective companies. This report demonstrates that there are significant differences in the detrimental impact on human health and the environment between the various pesticides sold onto the global market by these five leading pesticides companies. This report shows which companies have the "blackest" pesticide portfolio. It makes suggestions to politicians and authorities, investors as well as enterprises involved in the food chain and the pesticides industry itself as to how these dangers can be reduced rapidly and efficiently.

The pesticide portfolios of Bayer Crop Science, BASF, Dow AgroScience, Monsanto, and Syngenta are ranked here using the results of the Greenpeace studies "*Black List of Pesticides*" and "*Limits of Pesticides Analyses*"² which were published earlier in 2008. This approach uses three criteria which represent risks to human health and the environment: known hazardous properties of pesticides on sale; deficiencies in the data on the hazardousness of pesticides on sale; and analytical deficits which prevent proper monitoring of pesticide residues that may be present in food. These criteria have been combined in order to generate the first ranking of this report.

The share of the global pesticides market held by each company was selected as a fourth criterion in the second ranking, in order to take into account the amount of pesticides released into the market (represented here by market share figures since the industry does not publish any other data on the quantities of active ingredients they sell). This factor deals with exposure. Therefore, the data on the market shares or sales volumes could not be isolated for each individual substance (active ingredient), thus preventing an even more detailed picture from being drawn. It was only possible to compute the market shares for entire pesticide categories (i.e., insecticides, herbicides, fungicides, and other pesticides). The picture that emerged shows what impacts human health and the environment the most.

All five companies refused to provide Greenpeace with their own information on their portfolios and the active substances for pesticides they put on the market.³ Instead the portfolios of the companies were drawn from an international pesticides database (Agranova's *Ag Chem Base*) which covers the global market and global producers, linking all known active ingredients as well as pesticide trade names to the respective companies.

2 Literature and materials used or mentioned in this paper, as well as further reading, may be found on page 36.

3 The Annex on page 59ff contains the written responses of the companies.

4 Methodology

To answer the question which pesticide company has the most hazardous pesticide portfolio, it was necessary to compile an up-to-date list of active ingredients (*a.i.*) that are put onto the global market by each company, and then to classify each substance based on its hazardousness and potential risk, and the feasibility of detecting residues of it in food. In a last step, the risks associated with the substances had to be put in relation to their respective market shares in order to achieve a ranking that covers exposure.

In the first step, the pesticide portfolios of the five companies investigated – **BASF, Bayer Crop Science, Dow Agro-Science, Monsanto and Syngenta** – were examined and listed. This information was based on the international pesticides database operated by Agranova, which covers the global market and global producers. A database query was conducted for each of the companies, resulting in lists of active ingredients - for insecticides, herbicides, fungicides, and other pesticides - that are linked by trade name and/or brand to one or several of the competitors. From this, a combined **list of active ingredients** was compiled.⁴

The second step was to assess **the hazardous properties** of each of these active ingredients, thus creating a ranking of hazardous substances, and to subsequently summarise the individual ratings for each of the company portfolios. The Greenpeace study "*Black List of Pesticides*", published in February 2008, was used as a basis. In that study, fourteen human-toxicological and ecotoxicological criteria were used to assess probably all the pesticides currently in legal use worldwide, and to rank them according to their hazardous potential (chapter 4.2). 50% of the active substances covered by that study could not be assessed due to deficiencies in the data. These substances were put on a yellow list, which was also taken into account for the present company portfolio ranking.

Many substances used in pesticides cannot be detected with the routine methods used by official state laboratories. Because of this serious **problem of non-analysable ingredients**, our study also scrutinises whether the pesticides produced by the five companies can be analysed by high-quality laboratories in food with routine methods in use. These substances were listed in the Greenpeace study "*The Limits of Pesticide Analysis*", which was published in January 2008. They are also taken into account in this portfolio ranking (chapter 4.3).

The first **ranking of the companies** in this report was produced by taking into account three criteria:

1. Black-listed pesticides
2. Yellow-listed pesticides
3. Pesticides which can not be detected as residues in food using routine analyses.

This first ranking deals solely with the hazardousness of the pesticides in the individual portfolios, not taking potential exposure into account.

For the **second ranking**, the market shares of each company were investigated for the overall pesticide portfolio, as well as for the main areas of application (herbicides, fungicides, insecticides, others) and used to produce an additional ranking which thus includes a "**market factor**". Thus this second ranking takes into account the hazardousness of the pesticides and an exposure factor. The exposure indicates the amount of the pesticides which could end up in the environment and the human body. Hazardousness and exposure together express the total risk and the potential impact of a pesticide on human health and the environment.

4 The list of substances extracted from the database may be found in the Annex starting on page 37.

4.1 Restrictions Due to Lack of Data

In order to produce an accurate ranking it would have been preferable to factor in the market shares for each substance individually. However, no such information is publicly available for most of the a.i. relevant to this evaluation. In April 2008 Greenpeace sent a request for information to each of the five companies involved. In this letter, Greenpeace asked the companies to confirm (or otherwise revise) the lists of a.i. manufactured by them according to the database. None of the companies approached provided the requested information.

For this reason the evaluation was based solely upon on the pesticides listed in the before mentioned international pesticides database. Instead of the concrete amount of a pesticide released into the market (such data is not available from the industry nor from the database), company sales figures for the most important pesticide categories were used as a substitute. Thus the exposure could not be calculated directly in this report but only indirectly as a rough estimate based on sales data.

4.2 Hazardousness Criterion: Black List of Pesticides

The Greenpeace study "*Black List of Pesticides*" provides a comparative **evaluation of the hazardousness** to people and the environment of active agents used in pesticides around the globe. It is very likely that all of the pesticides currently in legal use worldwide are among the 1,134 pesticide ingredients investigated.

The criteria used in evaluating substances included fourteen toxicological, ecotoxicological and ecological aspects or effect categories: acute toxicity, chronic toxicity, carcinogenic effect, mutagenic (damaging to genes) effect, reproduction toxicity, immune toxicity, hormonal effect, aquatic toxicity, bird toxicity, bee toxicity, earthworm toxicity, persistence (degradability in the environment) and bioaccumulation (accumulation in the food chain).

Depending on what was clearly known about the harmful effects and/or their intensity from the data analysed, up to five points were given for the effect of the substances. Especially hazardous substances in pesticides were identified partly by being classified as the highest in particular categories and partly through their total number of points. Any substance which displayed at least one especially hazardous property, or came in the top ten percent of the substances assessed in its points ranking, was put on a "**Black List**" (BL). Substances about which not enough information was available in common publicly available databases for them to be evaluated were put on a "**Yellow List**" (YL), and all other substances on a "**Grey List**".

The "Black List" comprises 327 substances, or 29 percent of the 1,134 substances looked at. It also includes 168 of the pesticides authorised in the EU. The following ten substances approved in the EU have the highest proportion of very dangerous properties: *bifenthrin*, *cyfluthrin*, *lambda-cyhalothrin*, *difenacoum*, *fenbutatin oxide*, *chloropyrifos*, *deltamethrin*, *fipronil*, *oxadiazon*, *cyhexatin*. The following ten substances, likewise permitted in the EU, have the highest total effect: *fluazinam*, *triadimenol*, *paclobutrazol*, *cyromazine*, *proquinazid*, *boscalid/nicobifen*, *ethalfluralin*, *forchlorfenuron*, *butralin*, *isoxaben*. The approval holders or manufacturers of these twenty substances include Bayer, BASF, Dow Chemical and Syngenta - four of the five companies investigated in this new study.

The "Yellow List" of substances includes 564, or 50 % of the substances examined in the study, which could not be evaluated because of the lack of data in the analysed databases on them. Given the possibility that these substances might have dangerous properties, they ought not to be regarded as substitutes for substances on the Black List.

To evaluate exposure, all the active substances investigated were grouped in a four-stage system. 17 of the substances are often (>5%) detected in food in Germany and 27 of them are found in waters or have a high potential for endangering them. But for very many substances there are no data on contamination (in food, 60% of the substances; in water, 75%).

Highly hazardous substances are especially critical when prevalent in food or the open environment, as in waters (exposure criterion). 13 substances on the Black List were identified as being detected frequently in food.⁵ Another 18 substances often found are particularly hazardous to the aquatic environment.⁶

Almost 170 of the active substances in pesticides presently allowed in the EU have especially hazardous properties according to the evaluations made in the study, and so are potentially dangerous to human health and the environment. More than 80 of them only received (further) approval in the last few years, after being listed in Appendix I of Directive 91/414.

Authorisation and use of substances on the BL ought to be stopped as soon as possible on account of the dangers they pose to people and the environment; this applies most urgently to the 31 substances which at the same time frequently occur in food or in the environment.

For the purpose of this paper, the Black List as well as the Yellow List were used as part of the hazard evaluation of active ingredients in the top competitors' pesticide portfolios.

4.3 Criterion of "Hidden" Pesticides: Limits of Pesticide Analysis

The Greenpeace study "*The Limits of Pesticides Analysis*", published in January 2008, shows that even the best pesticide laboratories in the EU (e.g. the EU reference laboratory CVUA in Stuttgart, Germany) are unable to detect many pesticide residues with the routine methods commonly used. Official EU and German state laboratories nowadays apply multi-, group and single methods for the detection of pesticides. At the time when the investigations for this study were carried out, these methods covered between 400 and approximately 616 pesticides in the matrices considered. These rather high numbers only apply to experienced pesticide residue laboratories, such as the German laboratory CVUA Stuttgart. However, only a selection of multi-, group-, and single methods are applied due to capacity limitations, resource limitations and practicability for routine testing. Thus, the number of pesticides analysed on a routine basis is lower. Realistically, the number that can be routinely detected as pesticide residues is roughly estimated to lie between 250 and 500 a.i., even for such top laboratories. Average laboratories can only cover fewer than 200 substances. All substances which cannot be covered by the EU reference laboratory with routinely used methods are classified in this reference study as "**not analysable**" (notwithstanding the fact that there may be special, non-routine analytical methods for each of them in some academic laboratories).

Even when ALL theoretically available analytical possibilities are considered, a mere 30 % to 46 % of the 1,350 pesticides known worldwide can be detected, even by top laboratories. This means that possible pesticide contamination of food products, groundwater and hence the consumer too, cannot be identified comprehensively. The authorisation process in the EU and Germany is blind to this fact: looking at the pesticides approved by Germany over the last three years, it will be found that about one third of them can **not be covered by routine multimethods**. The development of new and improved analytical methods will only close this gap to a very limited extent. Therefore it is an inevitable necessity that the sources of pesticide contamination should be barred from the outset.

For the purpose of the paper presented here, the "non-analysable" criterion was used as part of the rating of active ingredients in the top competitors' pesticide portfolios.

5 *Carbendazim, maneb, iprodione, imazalil, metiram, chloropyrifos, procymidone, zineb, mancozeb, tolylfluanid, fludioxonil, propineb, and imidacloprid*

6 *Lindane, diuron, chloropyrifos, dichlorprop, pentachlorophenol, simazine, terbutylazin, atrazin, endosulfan, chlorfenvinphos, propazine, trifluralin, alachlor, hexazinone, HCH isomers, methabenzthiazuron, lenacil, and fenpropimorph*

4.4 Evaluation of this Study

In a nutshell, **four key criteria** were used as the basis of the company pesticides portfolio ranking:

1. Share of black-listed (highly dangerous) active ingredients in the pesticides portfolio of each company.
2. Share of yellow-listed (data deficiencies) active ingredients in the pesticides portfolio of each company.
3. Share of "non-analysable" or "hidden" active ingredients which cannot be analysed in food with routine methods even by EU reference laboratories.
4. The market share of pesticides and individual pesticide categories for each company. This is an exposure criterion if it is assumed that sales correspond to the amounts put on the market (and their final application, as well as their release into the environment or onto food).

Chapter 6 shows detailed results per company for **total pesticides** (see 6.1) and for **each pesticide category** (i.e., fungicides, insecticides, herbicides, others; see 6.2).

First ranking - hazard ranking:

In order to provide a value for the **integrated impact** of the company portfolios, we also combined the three risk criteria, weighting them as follows:

(Number of Black List substances x 2) + (number of Yellow List substances x 1) + (number of non-analysable substances x 1).

With this approach, Greenpeace places the strongest emphasis on pesticides which have been proved to be highly hazardous, by assigning a weight of 2 in the rating. Followed by a factor of 1 for yellow-listed and "hidden" pesticides as well.

This weighting scheme was applied for the first ranking, in which points were given, as well as for the second ranking, where market shares were factored in.

First step:

Points were given for each substance on the Black List (x 2), Yellow List (x 1), and on the list of non-analysable pesticides (x 1). The total number of points for all substances were added as "dirty points" to the full score for each company (see chapter 6.3).

For the second ranking these "dirty points" were multiplied by each company's share of pesticide sales in the global pesticide market, showing the total risk outcome of each company's pesticide portfolio (represented in absolute numbers).

Also, the points for each pesticide category were added and multiplied by the corresponding share of the global pesticide market. This way it can be seen which company has the worst portfolio in terms of insecticides, herbicides, fungicides, and others pesticides, with regard to the risk to and impact on human health and the environment.

Second step:

The different criteria were combined in the factor rankings in chapter 6.4.

- **1-factor ranking:** Share of Black List substances in the pesticide portfolio of each company.

The outcome shows the "dirtiness" of the portfolio as measured by the percentage of "black-listed" pesticides.

- **2-factor ranking:** Share of Black List substances in the pesticide portfolio multiplied by each company's share of sales on the global pesticide market.

The outcome shows a ranking of the impact of the highly hazardous pesticides produced by each company on human health and the environment.

- **3-factor ranking:** Sum of the share of Black List substances, share of Yellow List substances and share of non-analysable substances in the pesticide portfolio of each company.

The outcome illustrates a ranking of company portfolios based not only on pesticides which are hazardous (as in the first two rankings) but also based on pesticides whose toxicological properties are not well known, and finally pesticides which are not analysable by usual routine methods.

- **4-factor ranking:** Sum of the shares of Black List substances, Yellow List substances, and not analysable substances in the pesticide portfolio multiplied by each company's share of sales in the global pesticide market (as an exposure factor).

The outcome shows a ranking of the impact of highly hazardous pesticides, non-assessable and non-analysable substances on human health and the environment.

5 The Pesticides Industry

5.1 Sales Figures and Market Shares

The following basic market figures were used to calculate the portfolio rankings:⁷

World pesticide market: 25 billion euros

Of which:

Insecticides: 6.25 billion euros

Fungicides: 5.50 billion euros

Herbicides: 11.25 billion euros

The data regarding the global pesticides market vary from year to year. Current information for 2006 and 2007 ranges between 24 and 26 billion euros (30 to 33 billion US\$).

Share of pesticide categories in the global pesticide market in 2004:

Herbicides: 45.4 % (approx. 12.16 billion euros)

Insecticides: 27.5 % (approx. 7.366 billion euros)

Fungicides: 21.7 % (approx. 5.812 billion euros)

Other pesticides: 5.4 % (approx. 1.446 billion euros)

Share of pesticide categories in the global pesticide market in 2006:

Herbicides: 45 % (approx. 11,25 billion euros)

Insecticides: 25 % (approx. 6.25 billion euros)

Fungicides: 22 % (approx. 5.50 billion euros)

In the last 25 years the proportion of herbicides in the overall market has increased slightly, while the share of insecticides decreased slightly. The fungicides market is predicted to increase.

In 2004 the six largest manufacturers of agrochemicals (BASF, Bayer, Dow, Monsanto, Syngenta and DuPont) already controlled 77 % of the global market. For herbicides, their market share was even estimated to be as high as 98.5 % in 2005.

Syngenta and Bayer are the leading companies in the pesticide market. Both have a share of around 20% of the global market. BASF, Dow and Monsanto each hold around 10 % of the international pesticide market. The table at page 16 gives more detailed data.

While Syngenta, BASF, and Bayer dominate the fungicides market (with more than 20 % of the global market each), Dow has only 2 %, and Monsanto offers no fungicides at all. Shares in the herbicides market are closer, ranging from 11 to 19 percent. Larger differences can be seen in the insecticides sector: again, Monsanto offers no insecticides, while the other four control between ten and twenty percent of the global market. To the extent that figures are available, Syngenta leads the sector of other pesticides (such as plant growth regulators, rodenticides, microbiocides, molluscicides, nematocides) with more than 42 % of the international market, closely followed by Monsanto. Bayer and Dow also offer significant quantities of other pesticides, whereas BASF holds only 2.9 % of the world market for other pesticides.

⁷ To the best of the authors' knowledge, and as publicly available.

Naturally, the companies differ in their respective market strategies, a fact that has ultimately led to the present status of their portfolios. For the purpose of this evaluation, however, these strategies have been treated as being secondary, and are not examined more closely.

Parent company	BASF	Bayer	Dow	Monsanto	Syngenta
Company sales, total	57.951 bn € (2007)	32.385 bn € (2007)	39.100 bn € (2007)	6.258 bn € (2007)	6.753 bn € (2007)
Pesticide unit	BASF Agro	Bayer Crop Science	Dow Agro sciences	Monsanto Agricultural Productivity	Syngenta Crop Protection
Sale of pesticides, total	3.137 bn € (2007)	4.781 bn € (2007)	2.762 bn € (2007)	2.630 bn € (2007)	5.335 bn € (2007)
Percentage of company sales	5.41 %	14.76 %	7.06 %	42.03 %	79.00 %
Share of global pesticide market	12.55 %	19.12 %	11.05 %	10.52 %	21.34 %
Sale of insecticides	0.697 bn € (2007)	1.181 bn € (2007)	0.691 bn € (2007)	0	0.881 bn € (2007)
Share of global insecticide market	11.15 %	18.90 %	11.05 %	0 %	14.10 %
Sale of herbicides	1.215 bn € (2007)	1.725 bn € (2007)	1.657 bn € (2007)	1.877 bn € (2007)	2.135 bn € (2007)
Share of global herbicide market	10.80 %	15.33 %	14.73 %	16.68 %	18.98 %
Sale of fungicides	1.167 bn € (2007)	1.270 bn € (2007)	0.110 bn € (2007)	0	1.465 bn € (2007)
Share of global fungicide market	21.22 %	23.09 %	2.01 %	0 %	26.64 %
Sale of other pesticides	included with "insecticides"	0.605 bn € (2007)	0.304 bn € (2007)		0.789 bn € (2007)
Share of global market for other pesticides	2.90 %	30.25 %	15.19 %	37.65 %	42.70 %

5.2 The Heads of the Pesticides Industry

BASF SE

67056 Ludwigshafen, Germany
phone: +49 (0)621 60-0, <http://corporate.basf.com/en/>



Dr Jürgen Hambrecht, Chairman of the Board of Executive Directors

Dr Hambrecht, born 1946 in Germany, is married and has four children. He obtained his doctorate in chemistry in 1975 from the University of Tübingen, Germany. Hambrecht is the chairman of BASF - The Chemical Company, and has served the company for more than 30 years in various positions around the world. He is also a member of the supervisory boards of Daimler and Lufthansa, vice-president of the Federation of German Industries (BDI), and chairman of the Asia Pacific Committee of German Business (APA). He is in charge of Legal, Taxes & Insurance; Strategic Planning & Controlling; Executive Management & Development; Communications BASF Group; Investor Relations; Chief Compliance Officer.



Bayer AG

51368 Leverkusen, Germany
phone: +49 (0)214 30-1, www.bayer.com/en/



Werner Wenning, Chairman of the Board of Management

Born in 1946 in Leverkusen, Wenning joined Bayer AG in 1966 and worked in Peru, Spain, and Germany, among other things as head of the personnel department of what was then the Health Care Sector, and as head of marketing for thermoplastics in Bayer's Plastics Business Group. In 1996 he became head of Corporate Planning & Controlling in Leverkusen. He was appointed to the Board of Management of Bayer AG in 1997. He is also the vice-president of the German Industry Association (VCI), and holds positions on the the boards of Evonik, Henkel, E.ON and Deutsche Bank. Wenning is married and has two grown-up daughters.



The Dow Chemical Company

2030 Dow Center, Midland, MI 48674 U.S.A.
Phone: +1 989-636-1463, www.dow.com



Andrew N. Liveris, President, Chief Executive Officer & Chairman

He was born in Australia, where he attended the University of Queensland, graduating in Chemical Engineering. He began at Dow Australia in 1976 and worked in the Asia-Pacific region. He has been a member of Dow's Board of Directors since February 2004 and was elected as Chairman of the Board in April 2006. Liveris also serves on the board of directors of Citigroup, is a member of the US Climate Action Partnership, chairman of the board of the International Council of Chemical Associations and an officer of the American Chemistry Council. Liveris is also a member of various other organizations, among them the National Petroleum Council and the World Business Council for Sustainable Development. Liveris lives in Midland, Michigan. He and his wife Paula have three children.

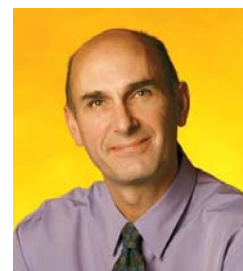


Monsanto Co

800 N. Lindbergh Blvd.
St. Louis, MO 63167
phone +1 (314) 694-6000
<http://www.monsanto.com>

**Hugh Grant**, Chairman, President and Chief Executive Officer

Grant was born in 1958 in Larkhall, Lanarkshire, Scotland. He holds a B.S. degree in Molecular Biology and Agricultural Zoology from Glasgow University, a M.S. Degree, Edinburgh University and an MBA, International Management Centre, Buckingham, UK. He joined the former Monsanto as a product development representative for the company's agricultural business in 1981. Since 1991, he has served in a variety of management positions (e.g., Director of Global Roundup Product Strategy), since 2000 as executive vice president and since 2003 as CEO. Before that, he was the managing director of all Monsanto business units in South-East Asia, Australia and New Zealand and led the marketing, sales and technology activities in Europe and North America. Among other positions, he is a member of the President's Advisory Group at Crop Life International.

**Syngenta International AG**

P.O. Box
CH-4002 Basel, Switzerland
phone: +41 61 323 2323
<http://www.syngenta.com/en/>

**Martin Taylor**, Chairman and Non-Executive Director

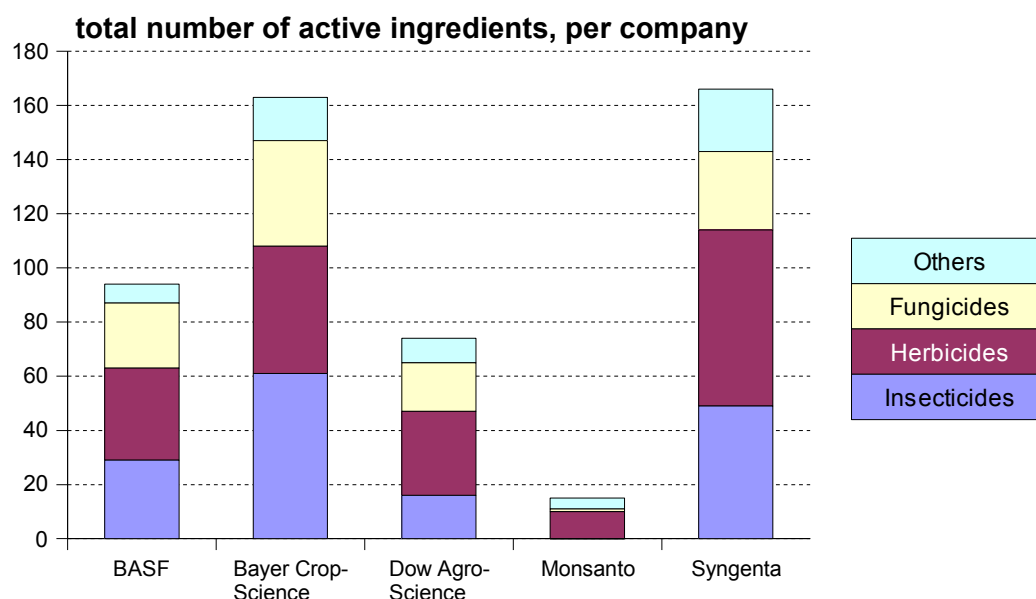
Martin Taylor, born in 1952, began his career as a financial journalist with Reuters and the Financial Times. He holds a degree in oriental languages from Oxford University. Taylor is Syngenta's Chairman of the Board of Directors, the Chairman's Committee and the Corporate Responsibility Committee and a member of the Compensation Committee. He is also the chairman of the Syngenta Foundation for Sustainable Agriculture. Martin Taylor is currently vice-chairman of RTL Group SA. Previously he was an advisor to Goldman Sachs International (1999-2005), chairman of WHSmith PLC (1999-2003) and CEO of Barclays PLC (1993-1998) and Courtaulds Textiles (1990-1993).



6 Results

6.1 Ranking of Company Portfolios - Total

The diagram below shows the overall portfolio of the five companies. Each column represents the total number of active ingredients in insecticides, herbicides, fungicides, and other pesticides associated with each firm. Overall, these companies sell 512 different a.i.



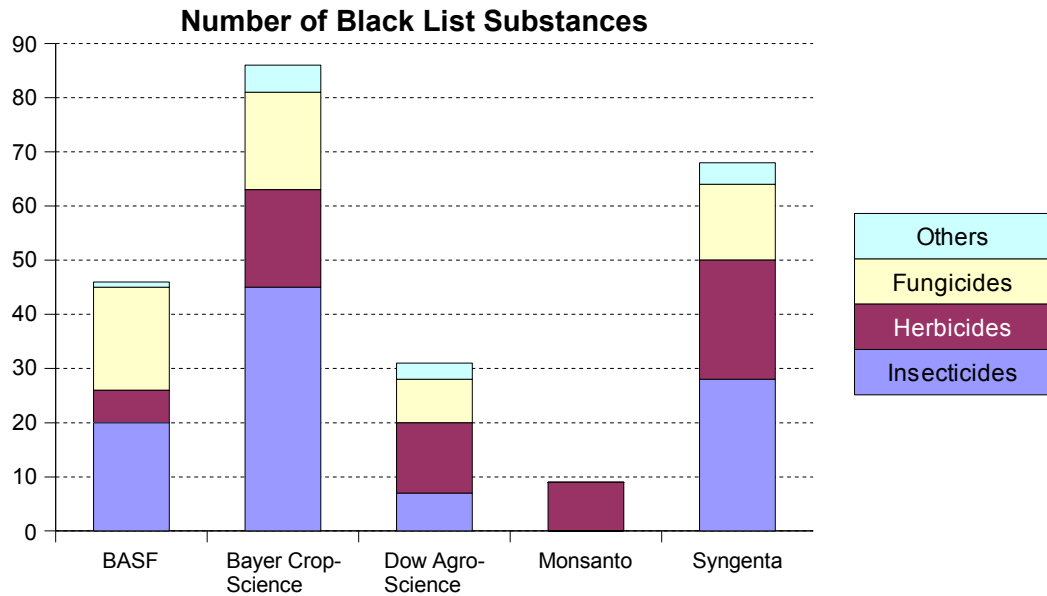
While Bayer and Syngenta each have a high number of substances in their portfolio and on the market, Monsanto only has very limited numbers, and BASF and Dow range in between. However, the number of substances alone does not necessarily reflect their financial importance or the amounts of pesticides sold.

Ranking of Black List Substances

240 of the 512 pesticide substances put on the market by the top 5 pesticide companies are highly hazardous and therefore listed in the Greenpeace Black List (BL). This corresponds to 47 %. The **total number of Black List pesticides per company** ranges between 86 and 9. The proportions of the highly hazardous substances produced by each company are closer together, ranging from 41 % to 60 %.

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
Of these, on the Black List	46	86	31	9	68	240	
Share of BL substances	49 %	53 %	42 %	60 %	41 %		47 %

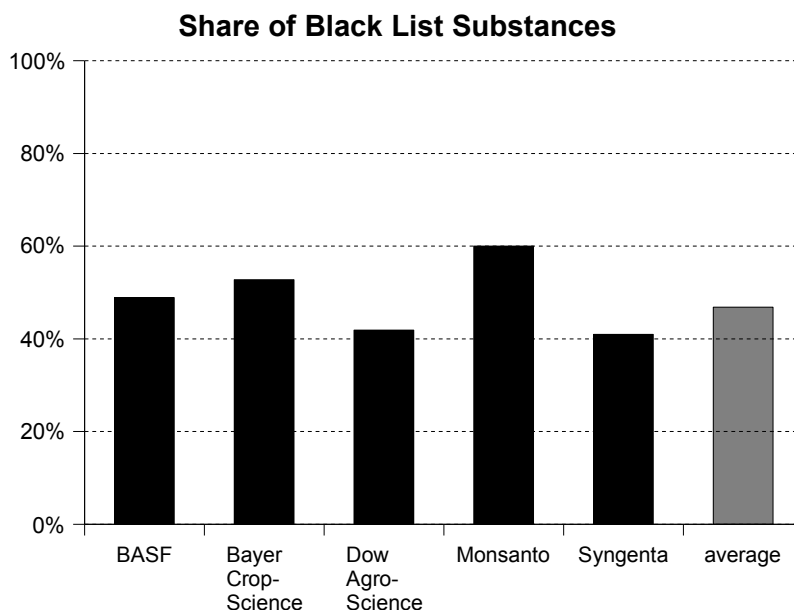
While Monsanto offers only 15 substances, 9 of which are mentioned on the Black List, Bayer sells 163 substances, which include 86 BL substances. Syngenta (68 substances), BASF (46 substances) and Dow (31 substances) are located in between.



The diagram above mirrors the composition of the competitors' overall portfolios, also in respect of the pesticide categories. For instance, Bayer is the number one for the total number of blacklisted insecticides (at least numerically), too, and most of Monsanto's smaller number of herbicides are on the Black List, as well.

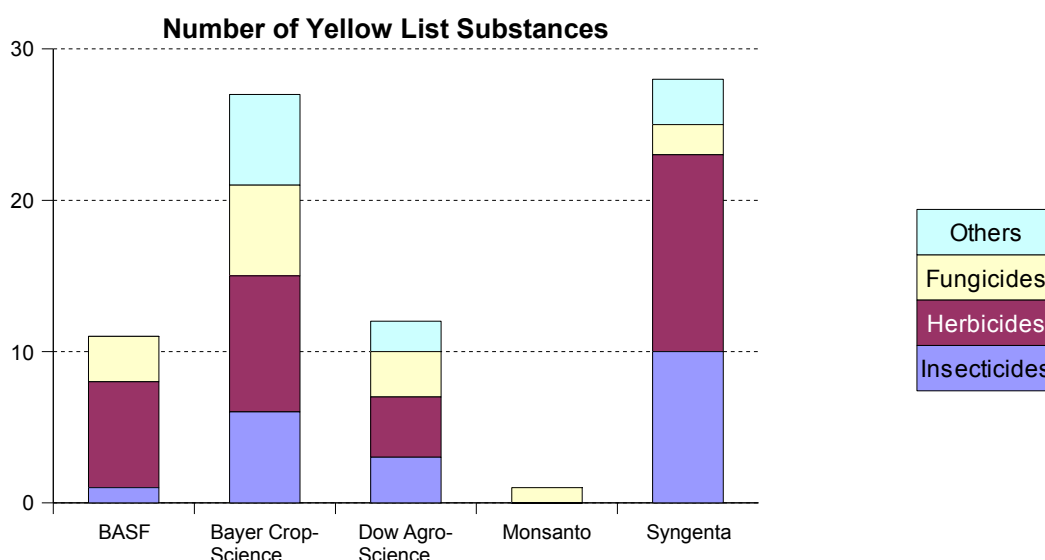
Looking at the **proportions**, however, the picture changes:

At 60 %, Monsanto has by far the highest share of Black List substances in its portfolio. The pesticide portfolios of Bayer Crop-Science and BASF also contain around 50 % (Bayer 53 %, BASF 49 %) substances which are highly hazardous and therefore listed in the Greenpeace Black List. The pesticide portfolios of Dow Agro-Science and Syngenta contain about 41% black-listed i.a. each.

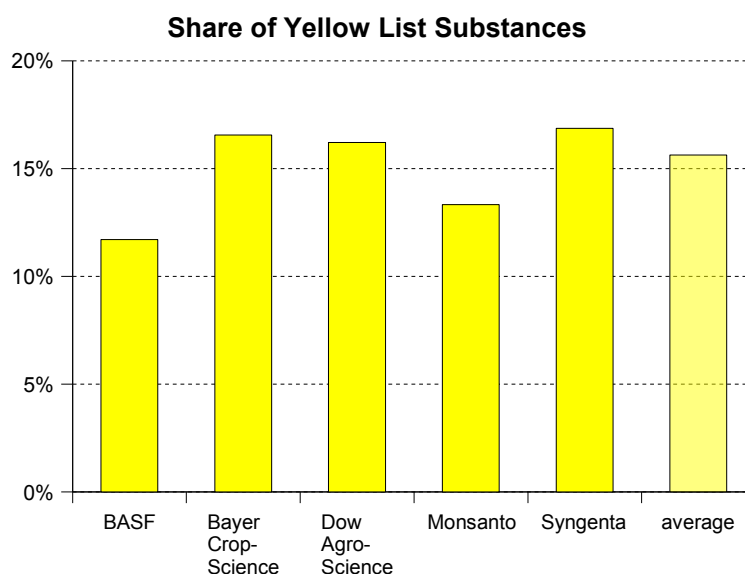


Ranking of Yellow List Substances

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
Of these, on Yellow List	11	27	12	2	28	80	
Share of YL substances	12 %	17 %	16 %	13 %	17 %		16 %



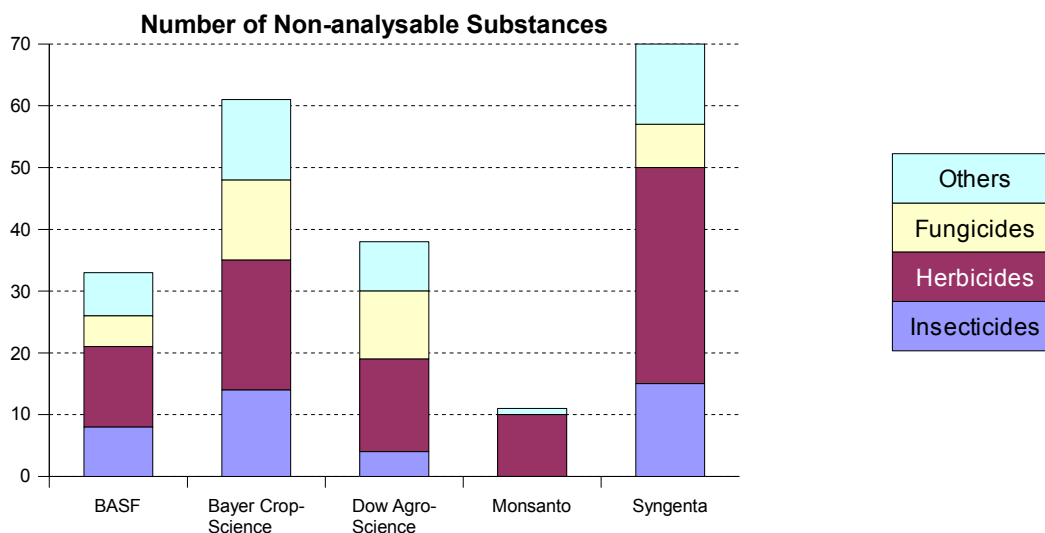
For 80 of the 512 substances sold by these companies, no adequate toxicity data were available in order to make a reliable assessment. On average, every sixth or 16 % of the substances lack the data necessary to evaluate their risk.



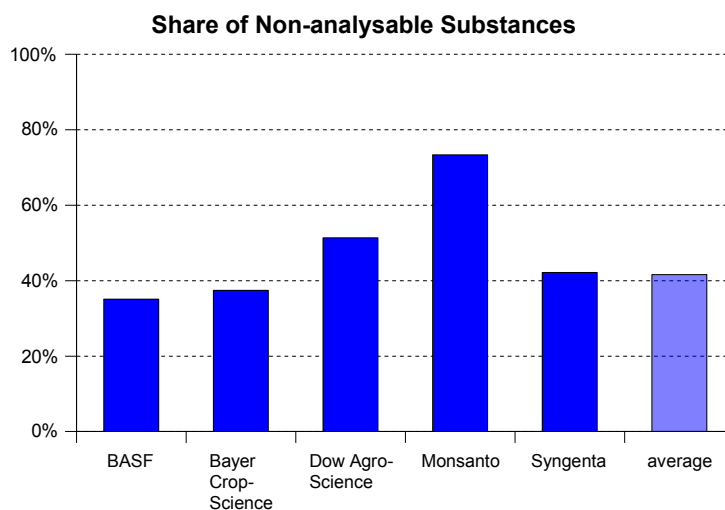
Ranking of Pesticides Not Routinely Analysed

Total Pesticide Portfolio	BASF	Bayer Crop	Dow Agro	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
Of these, not analysable	33	61	38	11	70	213	
Share of non-analysable a.i.	35 %	38 %	51 %	73 %	42 %		42 %

213 of the 512 a.i. cannot be routinely analysed by reference laboratories, as reported in the Greenpeace study "Limits of Pesticides Analyses". The worst case concerns the portfolio of Syngenta, where 70 substances cannot be analysed.



On average, 42 % of the substances in the portfolios cannot be monitored properly. Regarding the pesticide portfolios by company, nearly three fourths of the pesticides produced by Monsanto are "hidden". The portfolio with the lowest share of such compounds is that of BASF, which still contains 35 % pesticides that cannot be routinely analysed.



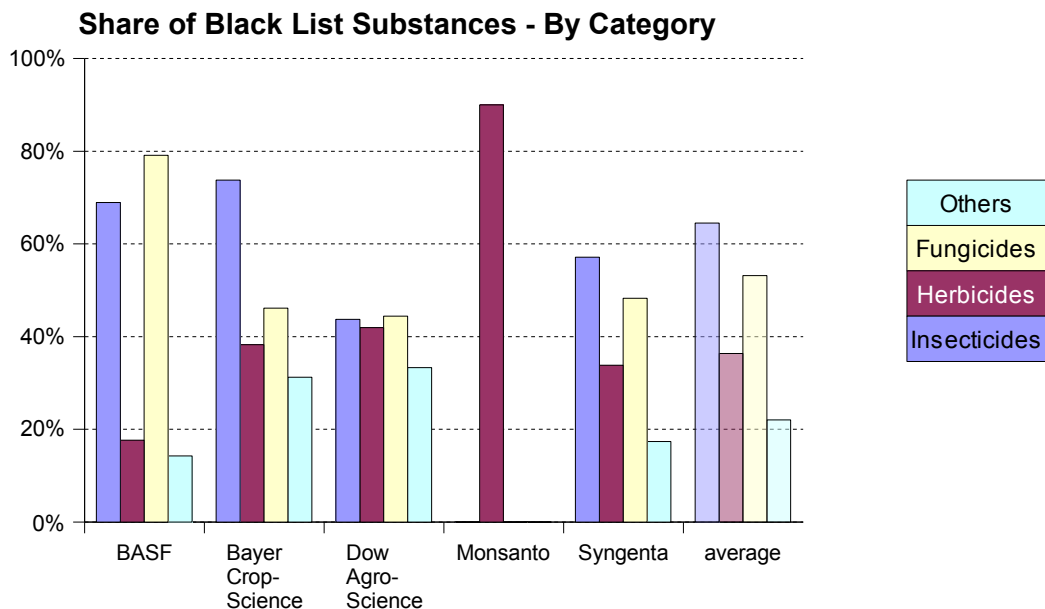
6.2 Ranking of Pesticide Categories: Insecticides, Herbicides, Fungicides, Others

Ranking of Black List Insecticides, Herbicides, Fungicides, Others

The number of Black List pesticides is highest in the category of insecticides. 100 insecticides are named in the Greenpeace Black List, as compared with 68 herbicides, 59 fungicides and 13 other pesticides.

The picture is similar regarding the share of Black List substances per pesticide category: 65 % of the insecticides are mentioned in the Black List, followed by the fungicides, at 53 %. 36 % of the herbicides and 22 % of other pesticides are listed as well.

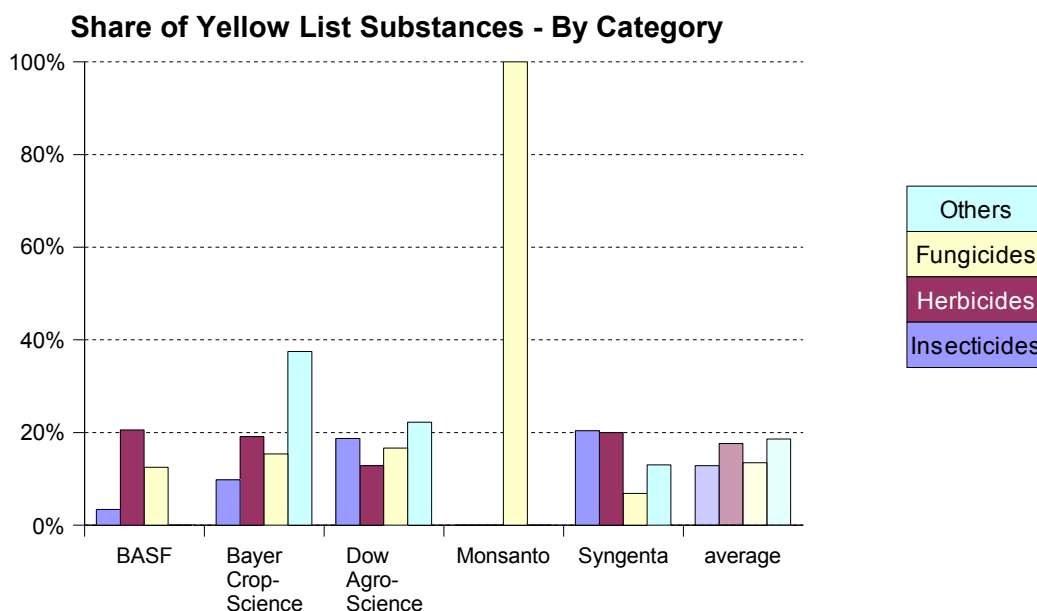
The results are quite different concerning the company portfolios in each category. While Bayer has the worst insecticide portfolio (74 % on the Black List), 90 % of Monsanto’s herbicides are listed. 80 % of BASF’s fungicides are highly hazardous.



Insecticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of insecticides	29	61	16	0	49	155	
If these, on Black List	20	45	7	0	28	100	
Share of BL insecticides	69 %	74 %	44 %	0 %	57 %		65 %
Herbicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of herbicides	34	47	31	10	65	187	
Of these, on Black List	6	18	13	9	22	68	
Share of BL herbicides	18 %	38 %	42 %	90 %	34 %		36 %
Fungicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of fungicides	24	39	18	1	29	111	
Of these, on Black List	19	18	8	0	14	59	
Share of BL fungicides	80 %	46 %	44 %	0 %	48 %		53 %
Other Pesticides Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
No. of other pesticides	7	16	9	4	23	59	
Of these, on Black List	1	5	3	0	4	13	
Share of other BL pesticides	14 %	31 %	33 %	0 %	17 %		22 %

Ranking of Yellow List Insecticides, Herbicides, Fungicides, Others

No adequate data is available for 18 % of the herbicides and 19 % of other pesticides. These perform worst regarding the Yellow List criteria. The other two categories show slightly better results, with 14 % of fungicides, and 13 % of insecticides lacking reliable data.



Insecticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of insecticides	29	61	16	0	49	155	
Of these, on Yellow List	1	6	3	0	10	20	
Share of YL insecticides	3 %	10 %	19 %	0 %	20 %		13 %

Herbicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of herbicides	34	47	31	10	65	187	
Of these, on Yellow List	7	9	4	0	13	33	
Share of YL herbicides	21 %	19 %	13 %	0 %	20 %		18 %

Fungicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of fungicides	24	39	18	1	29	111	
Of these, on Yellow List	3	6	3	1	2	15	
Share of YL fungicides	12 %	15 %	17 %	100 %	7 %		14 %

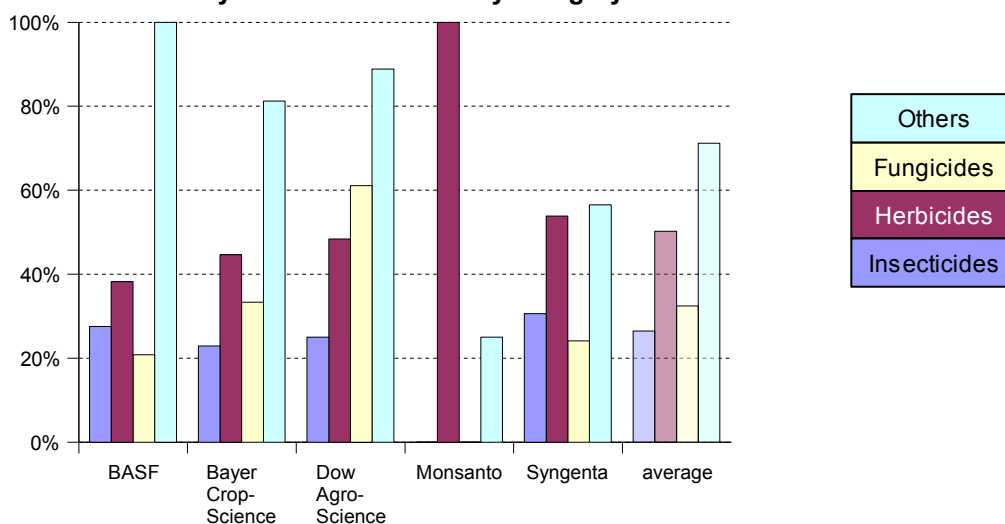
Other Pesticides Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of other pesticides	7	16	9	4	23	59	
Of these, on Yellow List	0	6	2	0	3	11	
Share of other YL pesticides	0 %	38 %	22 %	0 %	13 %		19 %

Ranking of Hard-to-Analyse Insecticides, Herbicides, Fungicides, Others

According to the reference study "Limits of Pesticides Analyses", a huge number of pesticides cannot be detected by means of routine methods used in pesticides laboratories. These include 71 % of other pesticides and 50 % of herbicides. The methods used to analyse fungicides and insecticides seem to be somewhat better: 31 % of the fungicides and 26 % of the insecticides cannot be detected using the routine methods available.

Of the 65 herbicides manufactured by Syngenta, 35 cannot be reliably analysed, and the same is true of 21 herbicides made by Bayer. All of Monsanto's herbicides must be classified in the same way. The corresponding data are shown in detail in the table on the next page.

Share of Non-analysable Substances - By Category



Insecticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of insecticides	29	61	16	0	49	155	
Of these, not analysable	8	14	4	0	15	41	
Share of non-analysable insecticides	28 %	23 %	25 %	0 %	31 %		26 %
Herbicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of herbicides	34	47	31	10	65	187	
Of these, not analysable	13	21	15	10	35	94	
Share of non-analysable herbicides	38 %	45 %	48 %	100 %	54 %		50 %
Fungicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of fungicides	24	39	18	1	29	111	
Of these, not analysable	5	13	11	0	7	36	
Share of non-analysable fungicides	21 %	33 %	61 %	0 %	24 %		31 %
Other Pesticides Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of other pesticides	7	16	9	4	23	59	
Of these, not analysable	7	13	8	1	13	42	
Share of other non-analysable pesticides	100 %	81 %	89 %	25 %	56 %		71 %

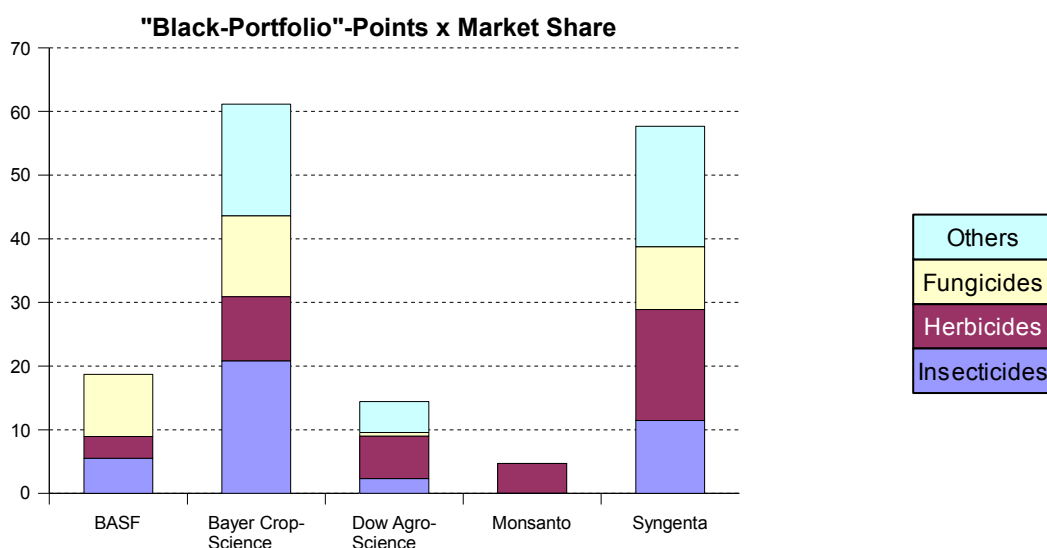
6.3 Black Portfolio Rankings

Black Portfolio Ranking of Overall Pesticide Portfolios

Having evaluated the first three criteria (see above), the total number of points per criterion for all substances (Black List x 2, Yellow List x 1, non-analysable substances x 1) were added for each substance in a portfolio and the resulting points were summed for each company (first ranking). When this score is multiplied by the respective company's share of pesticide sales in the global pesticide market, the product is a measure of the total risk outcome for the pesticide portfolio of each company (second ranking).

The resulting rankings show significant differences between the five companies: Bayer and Syngenta head the top five companies by a large margin as regards the total number of points and when multiplied with their share of sales. BASF and Dow come in second place. Monsanto follows at a considerable distance.

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
Total number of points	136	260	112	31	234		155
Multiplied by the share of sales in the global pesticide market	17.1	49.7	12.4	3.3	49.9		26.0



Black Portfolio - Ranking of Pesticide Categories

The Black Portfolio rankings for each pesticide category confirm the outcomes for the total pesticide portfolios shown above: Bayer or Syngenta always collect the most black points, followed by BASF or Dow, Monsanto comes in last (or first, in terms of "benignness").

Insecticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of insecticides	29	61	16	0	49	155	
Number of points for insecticides	49	110	21	0	81		52
Multiplied by the "market factor" ⁸	5.5	20.8	2.3	0	11.4		8.0
Herbicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of herbicides	34	47	31	10	65	187	
Number of points for herbicides	32	66	45	28	92		53
Multiplied by the "market factor" ⁸	3.7	10.1	6.6	4.7	17.5		8.5
Fungicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of fungicides	24	39	18	1	29	111	
Number of points for fungicides	46	55	30	1	37		34
Multiplied by the "market factor" ⁸	9.8	12.7	0.6	0	9.9		6.6
Other Pesticides Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of other pesticides	7	16	9	4	23	59	
Number of points for other pesticides	9	29	16	1	24		15.6
Multiplied by the "market factor" ⁸		17.6	4.9		18.9		

⁸ Share of sales in the global insecticide / herbicide / fungicide / other pesticides market, respectively

6.4 Multiple Factor Rankings

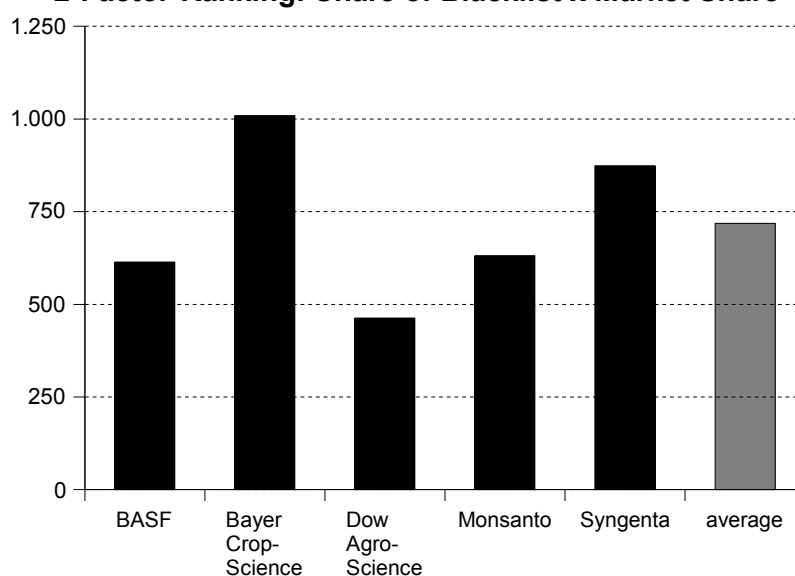
Factor Ranking of Overall Pesticide Portfolios

2-Factor Ranking

Share of Black List substances in the pesticide portfolio multiplied by each company's share of sales in the global pesticides market. This table again shows Bayer and Syngenta at the top of the five companies, being the leading pesticide producers worldwide. Monsanto and BASF follow in the middle, Dow scores just about half the points scored by Syngenta.

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
2-factor ranking	614	1009	463	631	874		718

2-Factor-Ranking: Share of Blacklist x Market Share

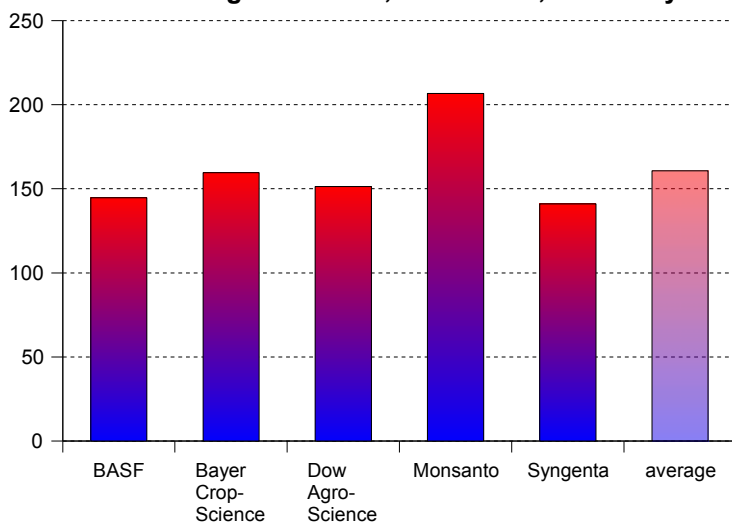


3-Factor Ranking

Sum of the shares of Black List substances, Yellow List substances and non-analysable substances in each company's pesticide portfolio. The outcome illustrates that Monsanto has the worst pesticide portfolio since the company offers the most hazardous, non-assessable or non-analysable substances. The four others follow at a significant distance.

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
3-factor ranking	145	160	151	207	141		161

3-Factor Ranking: Black List, Yellow List, non-analysable

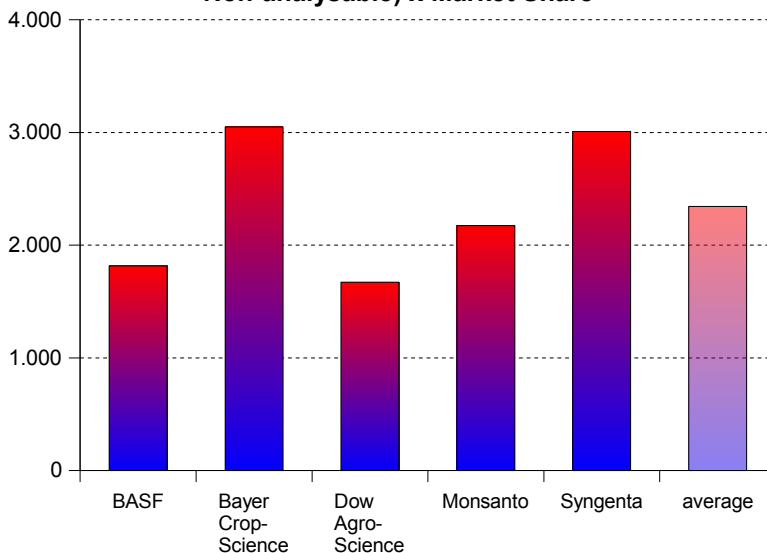


4-Factor Ranking

Multiplying the 3-factor ranking (see above) with each company’s share of sales in the global pesticides market yields the following table and diagram. This ranking represents the total risk associated with the pesticides portfolio of each company taking into account the hazardousness of its pesticides as well as the exposure (represented by sales figures). This shows the total global impact of the company pesticide portfolio on human health and the environment:

Total Pesticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Total number of substances	94	163	74	15	166	512	
4-factor ranking	1815	3050	1672	2174	3008		2344

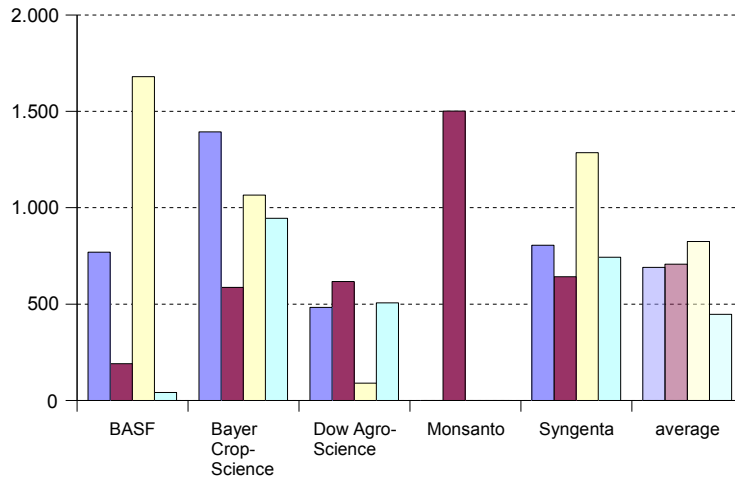
4-Factor Ranking: (Black List, Yellow List, Non-analysable) x Market Share



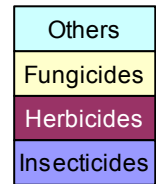
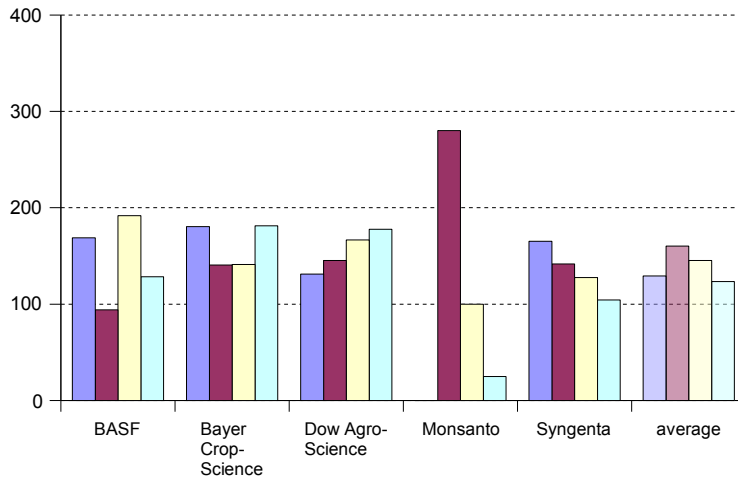
Factor Ranking of Pesticide Categories

Insecticide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of insecticides	29	61	16	0	49	155	
2-factor ranking	769	1394	483	0	805		690
3-factor ranking	169	180	131	0	165		129
4-factor ranking	1884	3407	1450	0	2330		1814
Herbicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of herbicides	34	47	31	10	65	187	
2-factor ranking	191	587	618	1502	642		708
3-factor ranking	94	140	145	280	142		160
4-factor ranking	1016	2153	2138	4672	2686		2533
Fungicide Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of fungicides	24	39	18	1	29	111	
2-factor ranking	1680	1066	89	0	1286		824
3-factor ranking	192	141	167	100	128		145
4-factor ranking	4067	3256	335	0	3398		2211
Other Pesticides Portfolio	BASF	Bayer Crop-Science	Dow Agro-Science	Monsanto	Syngenta	Total	Average
Number of other pesticides	7	16	9	4	23	59	
2-factor ranking	41	945	506	0	743		447
3-factor ranking	129	181	178	25	104		123
4-factor ranking	373	5483	2701	941	4456		2791

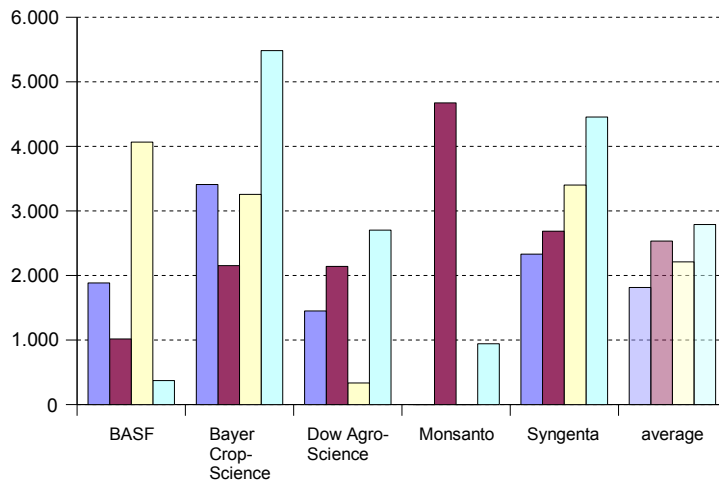
2-Factor Ranking: Share of Black List Substances x Market Share - By Category



3-Factor Ranking: Black List, Yellow List, Non-analysable - By Category



4-Factor Ranking: (Black List, Yellow List, Non-analysable Substances) x Market Share - By Category



7 Conclusions

The study *The Dirty Portfolios of the Pesticides Industry – Product Evaluation & Ranking of Leading Agrochemical Companies* reveals significant differences between the extent of the negative impacts which the pesticide portfolios of BASF, Bayer, Dow, Monsanto and Syngenta have on human health and the environment. However none of them has a clean pesticide portfolio. Each of the top companies in the pesticide market poses significant risks and causes severe damage to the environment and human health.

In the **first ranking**, the pesticide portfolio of **Monsanto** is the most hazardous of the top five pesticide companies. Monsanto supplies only 15 pesticides, 10 of which are herbicides. Of these, nine are on the Black List. This means that Monsanto's pesticide portfolio includes 60 % Black List substances. Considering the second criterion of "not routinely analysable pesticides", Monsanto again has the worst portfolio: 73 % of its pesticides can hardly be detected, whereas by comparison 35 % of BASF's pesticides are not routinely analysable. Monsanto has the worst portfolio once again in the 3-factor ranking, which includes pesticides for which common public databases lack toxicity data. The outcome illustrates that **Monsanto has the riskiest and most damaging pesticides in its portfolio** as the company sells the most hazardous, non-assessable and non-analysable substances.

In the **second ranking** of this study, the **market share** of each company was taken as a fourth criterion in order to estimate exposure and the intensity of the impact on human health and the environment. **Bayer and Syngenta do worst in the full hazardousness/exposure ranking.** Each of them controls around one fifth of the global market. The 1-factor ranking shows this result, as do the 2-factor and the 4-factor ranking. In view of the much larger amount of pesticides sold per year compared with the other top three manufacturers, **the negative impact of Bayer's and Syngenta's pesticides portfolios on human health and environment is highest of all.**

The company with the lowest negative score is **Dow Agro Science**. Even though 42 % of this company's portfolio consists of Black List substances, that is the comparatively best result (same as Syngenta in this category). Also, Dow holds one of the better positions in the Black Portfolio Ranking and in the 3-factor ranking. In addition, in the 2- and 4-factor rankings, Dow is the company with the lowest negative score in the ranking.

The results vary when it comes to the individual categories of substances in the companies' portfolios. While Bayer has the worst insecticide portfolio (74 % on the Black List), 90 % of Monsanto's herbicides are on the Black List. BASF, on the other hand, offers 80 % highly hazardous fungicides.

Many highly hazardous pesticides

The top five companies sell huge quantities of highly hazardous pesticides. Nearly half of the substances (47 %) found in the portfolios of BASF, Bayer Crop Science, Dow Agro-Science, Monsanto and Syngenta are listed on the Greenpeace Black List. These substances may for instance cause cancer, reproductive damage, dysfunction of the endocrine system, they may damage DNA or have a detrimental effect on the nervous systems of humans. They also affect wildlife and contribute to losses of biological diversity.

The companies achieve vast pesticide sales of around 18.5 billion euros per year (data for 2007). A large part of these are generated with sales of highly toxic pesticides, despite the consequences for humans and the environment being enormous. To stop the irresponsible sale of highly hazardous substances, the EU must in future withdraw its approval for such highly hazardous substances. All those involved in the food chain must find substitutes for the high-risk pesticides named in the Black List. The EU and its member states must support the development and application of non-chemical alternatives.

The highest share of Black List pesticides are found in the category of insecticides, making these the most hazardous group in the realm of pesticides. In absolute figures, 100 insecticides are named on the Black List, as compared to 68 herbicides, 59 fungicides and 13 other pesticides. Regarding the share of Black List substances per pesticide category, the picture is similar: 65 % of the insecticides are mentioned on the Black List, followed by fungicides at 53 %. 36 % of herbicides and 22 % of other pesticides are also listed.

Lack of toxicity and exposure data: Adequate assessment not possible for many substances

No adequate data are available for one a.i. in six. The risk of 80, or 16 %, of the ingredients used by the top five pesticides manufacturers could not be assessed in the study "Black List of Pesticides" because of this lack of information. The portfolios of all competitors examined include too many substances which cannot be scrutinised reliably.

The risk posed by these substances to human beings and wildlife is unpredictable. The missing data must therefore be made available immediately by the industry and public authorities and must be entered in the appropriate international chemical databases. Pesticides with a significant lack of such publicly available data should be listed by companies involved in the food chain and should be banned from the market immediately by authorities.

The industry does not publish figures concerning the amounts of individual active substances sold. Thus it is almost impossible to estimate the quantities of individual pesticides released into the environment and the resulting exposure to humans and nature. The EU has to make it an obligation for the pesticides industry to publish these data.

Huge numbers of non-analysable substances

Furthermore 42 % (213 of 512) of the pesticide substances covered in this report can barely be detected by laboratories in their daily work. These include 71 % of other pesticides and 50 % of herbicides. Methods for analysing fungicides and insecticides seem to be more frequently available: 31 % of the fungicides and 26 % of the insecticides cannot be detected using currently practised routine methods. Nearly three fourths of the substances made by Monsanto and more than 50 % of the substances made by Dow cannot be analysed by such methods. Indeed, although merely 65 % of BASF's substances can be routinely detected – that is still the best value when the five companies are compared – more than one third still cannot be. In addition, it should be noted that many more pesticides cannot be detected by the majority of pesticides laboratories in the EU, which are not at the level of "EU reference laboratories". Thus, the actual number of substances which are routinely analysed is in fact far lower than the number of pesticides analysed by this study.

This is a major problem for pesticide control in the whole EU, which has to be dealt with immediately by competent authorities and companies. The authorities should provide more money for manpower and equipment to improve the laboratories. The pesticide industry must also contribute to the funding of laboratories, for example via a tax on pesticides. Furthermore, companies must develop and provide appropriate analytical methods. The main consequence of this situation is that there must be no authorisation of active substances in the EU which cannot even be analysed in food by EU reference laboratories using routine methods. Companies involved in the food chain should ban such pesticides completely.

Literature

AGRANOVA, www.agranova.co.uk/pdf/AWA.pdf

AGRANOVA: *Ag Chem Base Index on-line* (2005) www.agranova.co.uk/agchem/inputform.html

AGROW: *Agrow's Top 20: 2007 Edition. AGROW REPORT DS258* (October 2007) www.agrow.com/reports/agrow_top20_2007_chapter1.shtml

BASF: *Pflanzenschutz & Ernährung - Größere Kundennähe – höhere Wettbewerbsfähigkeit.* corporate.basf.com/de/investor/ueberblick/pflanzenschutz.htm

BAYER: *Science For A Better Life. Bayer-Geschäftsbericht 2007.* www.geschaeftsbericht2007.bayer.de/de/bayer_geschaeftsbericht_2007.pdf

DEWAR, Arthur: *Agrow's Top 20: 2005 Edition AGROW REPORT DS248* (March 2005), p 161

DOW CHEMICAL: *TRANSFORMING. The Dow Chemical Company 2007 Corporate Report.* www.dow.com/financial/2007ann/pdfs/161-00695.pdf

GLOBAL INDUSTRY ANALYSTS: *Agricultural Chemicals Industry. A Global Market Data Compendium 2003 : Global Herbicide Sales by Leading Producers (Dow AgroSciences, BASF, Monsanto, Syngenta, Aventis/Bayer, DuPont, and Others) : 2001 and 2005 Percentage Market Shares* (April 2003) www.study-boy.com/toc/globind/PR3077.pdf

GREENPEACE GERMANY: *Die Schwarze Liste der Pestizide [The Black List of Pesticides]* (January 2008) For the full study (in german, summary in english) see www.greenpeace.de/fileadmin/gpd/user_upload/themen/umweltgifte/Schwarze_Liste_Pestizide_final.pdf

GREENPEACE GERMANY: *Grenzen der Pestizidanalytik [The Limits of Pesticide Analysis]* (January 2008) For the full study (in german, summary in english) see www.greenpeace.de/fileadmin/gpd/user_upload/themen/umweltgifte/Grenzen_der_Pestizidanalytik_final2.pdf

MINDBRANCH, www.mindbranch.com/Pesticides-R154-1305/

MONSANTO: *Growing. 2007 Annual Report.* www.monsanto.com/pdf/pubs/2007/2007AnnualReport.pdf

RESEARCH AND MARKETS: *Agrows Top 20: 2007 Edition* (January 2007, € 949), www.researchandmarkets.com/reportinfo.asp?cat_id=261&report_id=577434&p=2

RESEARCH WIKIS, www.researchwikis.com/Pesticides_Market_Research

REPORTBUYER: *The Top 10 World's Leading Agrochemical Companies* (January 2008, £5,750), www.reportbuyer.com/industry_manufacturing/company_reports_industry_manufacturing/_top_10_worlds_leading_agrochemical_companies.html

SYNGENTA: *Jahresbericht 2007.* www.syngenta.com/de/downloads/Syngenta_AR2007_deutsch.pdf

WEBER, Carina: *Die TOP-6 des Pestizid-Weltmarktes 2006.*

PAN GERMANY PESTIZID-BRIEF (Mai/Juni 2007) www.pan-germany.org/deu/~news-612.html

Annexes

I. List of substances used by BASF, Bayer, Dow, Monsanto and Syngenta

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
BASF	(7E,9Z)-Dodeca-7,9-dien-1-yl acetate ; Dodecadienylacetat	RAK 2	Ph	55774-32-8	no		
BASF	Aclonifen	BANDUR ; BANDREN	H	74070-46-5		yes	
BASF	alpha-cypermethrin ; alphamethrin	CONCORD ; FASTAC ; FENDONA ; RENEGADE	I	67375-30-8		yes	
BASF	Bacillus cereus BPOI	PIX PLUS	PGR	–	no		
BASF	bentazone	BASAGRAN	H	25057-89-0			
BASF	boscalid ; nicobifen (rej.)	FILAN ; CANTUS ; SIGNUM ; ENDURA ; PRISTINE ; EMERALD	F	188425-85-6		yes	
BASF	carbendazim	BAVISTAN	F	10605-21-7		yes	
BASF	chlorethoxyfos	FORTRESS	I	54593-83-8	no	yes	
BASF	chlorfenapyr ; pyrrol (rej.)	PIRATE ; ALERT ; SUNFIRE ; CITREX ; INTREPID ; KOTETSU	I	122453-73-0		yes	
BASF	chlorfenvinphos	BIRLANE ; SUPONA	I	470-90-6		yes	
BASF	chloridazon ; pyrazon	PYRAMIN	H	1698-60-8			
BASF	chlormequat chloride	CYCOCEL	PGR	999-81-5	no		
BASF	chlorthiamid	–	H	1918-13-4	no		
BASF	cinidon-ethyl	BINGO ; LOTUS ; ORBIT ; SOLAR ; VEGA	H	142891-20-1			
BASF	cinmethylin	ARGOLD ; CINCH	H	87818-31-3	no		
BASF	cyclosulfamuron	INVEST ; JIN QUI ; SAVIOUR ; ICHIYONMARU ; ORYSA ; SULTAN	H	136849-15-5	no		yes
BASF	cycloxydim	FOCUS ; LASER ; STRATOS	H	101205-02-1			
BASF	cypermethrin	BARRICADE (ii) ; FOLCORD ; APHICAR ; SHERPA	I	52315-07-8			
BASF	cythioate	CYFLEE ; PROBAN	I	115-93-5	no		
BASF	dalapon-sodium ; 2,2-dichloropropanoic acid sodium salt	–	H	127-20-8			
BASF	dazomet	BASAMID	F	533-74-4	no	yes	

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
BASF	dichlorprop-P	DUPLOSAN DP	H	15165-67-0	no		
BASF	dicrotophos	BIDRIN	I	141-66-2		yes	
BASF	difenzoquat-metilsulfate	AVENGE ; FINAVEN	H	43222-48-6	no	yes	
BASF	dimethenamid	FRONTIER ; CENTURY	H	87674-68-8			
BASF	dimethenamid-P ; S-dimethenamid	FRONTIER X2 ; FRONTIER S ; ISARD ; SPECTRUM ; OUTLOOK ; SPRINGBOK	H	163515-14-8	no		
BASF	dimethoate	CYGON	I	60-51-5		yes	
BASF	dimethomorph	ACROBAT ; FORUM	F	110488-70-5			
BASF	dimethylvinphos	-	I	2274-67-1	no		yes
BASF	dimoxystrobin	SWING GOLD	F	149961-52-4		yes	
BASF	dithianon	DELAN	F	3347-22-6	no	yes	
BASF	dodine	CYPREX ; MELPREX ; VENTUROL ; SYLLIT 65	F	2439-10-3		yes	
BASF	epoxiconazole	OPUS	F	133855-98-8		yes	
BASF	famphur	WARBEX ; BO-ANA	I	52-85-7	no		yes
BASF	fenbutatin oxide	BENDEX ; NOVLAN	I	13356-08-6		yes	
BASF	fenfuram	PANO-RAM	F	24691-80-3	no		yes
BASF	fenitrothion	ACCOTHION ; CYTEL	I	122-14-5		yes	
BASF	fenoxanil	ACHIEVE	F	115852-48-7	no		yes
BASF	fenpropathrin	HERALD	I	39515-41-8		yes	
BASF	fenpropimorph	CORBEL ; MISTRAL	F	67564-91-4		yes	
BASF	fipronil	REGENT MG ; FRONTLINE ; ZOOM ; SCHUSS ; METIS ; TEXAS	I	120068-37-3		yes	
BASF	flamprop-isopropyl	BARNON ; SUFFIX-425	H	52756-22-6	no		yes
BASF	flamprop-M-isopropyl	BARRON PLUS ; SUFFIX BW	H	63782-90-1	no		
BASF	flamprop-M-methyl	MATAVEN ; CANCER	H	63729-98-6	no		
BASF	flocoumafen	-	R	90035-08-8	no	yes	
BASF	flucythrinate	CYBOLT ; CYTHRIN ; PAY-OFF	I	70124-77-5		yes	
BASF	flufenacet (+ pendimethalin)	CRYSTAL	H	142459-58-3		yes	

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
BASF	flufenoxuron	CASCADE ; EUROPE ; SIGONA	I	101463-69-8			
BASF	fluquinconazole	CASTELLAN ; VISTA ; JOCKEY	F	136426-54-5		yes	
BASF	flurenol ; flurecol	ANTEN	PGR	467-69-6	no		
BASF	hydramethylnon ; hydramethylnone ; pyramdron	AMDRO ; COMBAT ; MAXFORCE ; SIEGE GEL ; SIEGE PRO	I	67485-29-4	no	yes	
BASF	imazamethabenz-methyl	ASSERT ; DAGGER	H	81405-85-8	no		
BASF	imazamox	RAPTOR ; SWEEPER ; ODYSSEY ; BOLERO ; OKLAHOMA	H	114311-32-9			
BASF	imazapic ; imazamethapyr (rej.)	CADRE ; PLATEAU	H	104098-48-8	no		yes
BASF	imazapyr-isopropylammonium	ARSENAL ; ASSAULT	H	81510-83-0			
BASF	imazaquin	SCEPTER ; IMAGE	H	81335-37-7			yes
BASF	imazethapyr	PURSUIT ; PIVOT	H	81335-77-5			
BASF	iprodione	ROVRAL ; KIDAN	F	36734-19-7		yes	
BASF	kresoxim-methyl	DISCUS ; CANDIT ; STROBY ; CYGNUS ; SOVRAN	F	143390-89-0		yes	
BASF	lactofen	COBRA	H	77501-63-4			yes
BASF	malathion	CYTHON ; MALATHION ; CARBOFOS ; FOSFOTHION ; MERCAPTOTHION	I	121-75-5		yes	
BASF	mecoprop-P	DUPLOSAN KV	H	16484-77-8	no		
BASF	mepiquat chloride	PIX	PGR	24307-26-4			
BASF	metazachlor	BUTISAN-S	H	67129-08-2			
BASF	metconazole ; dimetconazole (rej.)	CARAMBA ; CINCH	F	125116-23-6		yes	
BASF	metrafenone	FLEXITY ; VIVANDO	F	220899-03-6		yes	
BASF	mevinphos	PHOSDRIN	I	7786-34-7		yes	
BASF	milsana ; Reynoutria sachalinensis extract	MILSANA 13	BioF	–	no		
BASF	nemadectin	–	I / N	102130-84-7	no		
BASF	nithiazine	TTNM	I	58842-20-9	no		
BASF	nitrothal-isopropyl	KUMULAN ; PALLINAL	F	10552-74-6			yes

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
BASF	PDIC ; potassium dichloro-isocyanurate	CHEMBRO ; DICA ; CHEMBRED	PGR	2244-21-5	no		
BASF	pendimethalin	PROWL ; STOMP ; HERBADOX ; PENDULUM ; HURDLE	H	40487-42-1		yes	
BASF	pendimethalin (+ flufenacet)	CRYSTAL	H	40487-42-1		yes	
BASF	permethrin	TALCORD	I	52645-53-1		yes	
BASF	phorate	THIMET ; AGRIMET ; ASSTAR	I / A / N	298-02-2		yes	
BASF	picolinafen	PICO ; SNIPER ; PARAGON	H	137641-05-5		yes	
BASF	prochloraz	SPORTAK ; OCTAVE ; PRELUDE ; PYROS	F	67747-09-5		yes	
BASF	profoxidim ; clefoxidim (rej)	AURA ; TETRIS	H	139001-49-3			yes
BASF	prohexadione-calcium	MEDAX ; APOGEE ; BASELINE ; REGALIS	PGR	127277-53-6			
BASF	pyraclostrobin	HEADLINE ; INSIGNIA ; CABRIO EG ; ATTITUDE ; F 500 ; OPERA NARIA4	F	175013-18-0		yes	
BASF	pyridaben	NEXTER ; SANMITE ; STARLING	I	96489-71-3		yes	
BASF	pyrimethanil	MYTHOS ; SARI ; SCALA	F	53112-28-0			
BASF	quinclorac	FACET ; PARAMOUNT	H	84087-01-4			
BASF	quinmerac	FIESTA ; DUBLETT ; NIMBUS ; GAVELAN	H	90717-03-6			
BASF	tebufenpyrad ; fenpyrad	MASAI	I	119168-77-3		yes	
BASF	teflubenzuron	NOMOLT ; DART	I	83121-18-0			
BASF	temephos	ABATE ; ABATHION	I	3383-96-8	no	yes	
BASF	tepraloxydim ; caloxydim (rej.)	ARAMO ; NETO ; AURA ; EQUINOX ; HOENEST	H	149979-41-9			
BASF	terbufos	COUNTER (1)	I / N	13071-79-9		yes	
BASF	triazamate ; triazuron	AZTEC (i)	I	112143-82-5			
BASF	tridemorph	CALIXIN	F	81412-43-3	no	yes	
BASF	triforine	SAPROL	F	26644-46-2		yes	
BASF	triticonazole	PREMIS ; ALIOS ; REAL ; CHARTER	F	131983-72-7		yes	
BASF	tritosulfuron	CORTO ; ARRAT	H	142469-14-5	no		yes

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
BASF	vinclozolin	ORNILAN ; CURALAN	F	50471-44-8		yes	
Bayer	2-(1-naphthyl)acetamide ; 1-naphthaleneacetamide	AMID-THIN ; NAD ; NAAM	PGR	86-86-2			yes
Bayer	2-(1-naphthyl)acetic acid ; α -naphthaleneacetic acid	FRUITONE-N ; NAA	PGR	86-87-3			yes
Bayer	2,4-D ; (2,4-dichlorophenoxy)acetic acid	WEEDONE ; WEEDAR	H	94-75-7			
Bayer	2,4-DB ; 4-(2,4-dichlorophenoxy)butanoic acid	BUTYROL ; BUTOXONE	H	94-82-6		yes	
Bayer	4-indol-3-ylbutyric acid	CHRYZOSAN ; IBA	PGR	133-32-4	no		
Bayer	acifluorfen-sodium	TACKLE	H	62476-59-9	no		
Bayer	Aclonifen	BANDUR ; CHALLENGE	H	74070-46-5		yes	
Bayer	acrinathrin	RUFAS ARDENT ORTYS	I	101007-06-1		yes	
Bayer	aldicarb	TEMIK	I / A / N	116-06-3		yes	
Bayer	amidosulfuron	ADRET ; GRATIL ; GRODYL ; EAGLE	H	120923-37-7	no		
Bayer	amitraz	MITAC OVASYN	I	33089-61-1		yes	
Bayer	amitrole ; aminotriazol ; 1H-1,2,4-triazol-3-amine	ATA ; WEEDAZOL ; CYTROL ; AMIZOL ; AMITROL	H	61-82-5	no	yes	
Bayer	anilofos	AROZIN ; RICO	H	64249-01-0	no		yes
Bayer	asulam	ASULOX ; ASILAN	H	3337-71-1	no		
Bayer	azinphos-ethyl	GUSATHION A	I	2642-71-9		yes	
Bayer	azinphos-methyl	GUTHION GUSATHIONM	I	86-50-0		yes	
Bayer	azocyclotin	PEROPAL CLERMAIT	I	41083-11-8	no	yes	
Bayer	Bacillus subtilis GB03	KODIAK ; EPIC (1)	BioF	–	no		
Bayer	Bacillus subtilis strain FZB24	RHIZO-PLUS	DRA	–	no		
Bayer	benazolin	CORNOX CWK ; ASSET ; TILLOX	H	3813-05-6			
Bayer	bendiocarb	FICAM GARVOX SEEDOX	I	22781-23-3		yes	
Bayer	benfuresate	CYPERAL ; MORLENE	H	68505-69-1	no		yes
Bayer	benzothiofene	PREVENTOL TP OC 3082	F	11095-43-5	no		

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Bayer	beta-cyfluthrin	BULLDOCK DUCAT	I	68359-37-5		yes	
Bayer	bifenox	MODOWN	H	42576-02-3		yes	
Bayer	bioallethrin ; d-allethrin	BIOALLETHRINE	I	584-79-2	no		
Bayer	bioallethrin ; S-cyclopentenyl ; S-allethrin	ESBIOTHRIN	I	28434-00-6	no		yes
Bayer	bioresmethrin ; cismethrin	BIOBENZYFUROLINE ; ISATHRINE	I	28434-01-7	no	yes	
Bayer	bitertanol	BAYCOR ; SIBUTOL	F	55179-31-2			
Bayer	bromoxynil	BROMINAL ; BUCTRIL	H	1689-84-5		yes	
Bayer	bromuconazole ; bromoconazole (rej.)	GRANIT ; VECTRA	F	116255-48-2		yes	
Bayer	bronopol	BRNOTAK ; BRNOCOT	B	52-51-7	no		
Bayer	butralin	TAMEX ; BLUE RIBBON ; YELLOW RIBBON	PGR	33629-47-9		yes	
Bayer	carbaryl	SEVIN	I	63-25-2		yes	
Bayer	carbendazim	DEROSAL	F	10605-21-7		yes	
Bayer	carbetamide	CARBETAMEX ; LEGURAME	H	16118-49-3			
Bayer	carbofuran	CURATER YALTOX NOVITRON ;	I / A / N	1563-66-2		yes	
Bayer	carpropamid	WIN ; WINADMIRE ; SOLAZAS ; ARCADO ; PROTEGA ; CLEANESS	F	104030-54-8	no		yes
Bayer	chinomethionat	MORESTAN (fung)	F	2439-01-2		yes	
Bayer	chloramben	AMIBEN	H	133-90-4	no		
Bayer	chlormephos	DOTAN	I	24934-91-6		yes	
Bayer	cloprop ; 3-CPA ; 2-(3-chlorophenoxy)propanoic acid	FRUITONE ; 3-CPA	PGR	101-10-0	no		yes
Bayer	coumaphos	ASUNTOL PERIZIN BEESTRIPS	I	56-72-4	no	yes	
Bayer	coumatetralyl	-	R	5836-29-3	no	yes	
Bayer	cyclanilide	FINISH	PGR	113136-77-9	no	yes	
Bayer	cyfluthrin	BAYTHROID RESPONSARBLOCUS ZAPA	I	68359-37-5		yes	
Bayer	deltamethrin	DECIS K-OTRINE	I	52918-63-5		yes	

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Bayer	demeton-S-methyl	METASYSTOX i	I	919-86-8			
Bayer	desmedipham	BETANAL AM ; BETANEX	H	13684-56-5			
Bayer	dichlofluamid	EURAPEN	F	1085-98-9			
Bayer	dichlorophen ; antiphen	SUPER MOSSTOX	F / B	97-23-4	no	yes	
Bayer	dichlorprop	DESORMONE ; REDIPON	H	120-36-5		yes	
Bayer	dichlorvos	DEDEVAP	I	62-73-7		yes	
Bayer	diclofop-methyl	HOEGRASS ; HOELON ; ILLOXAN	H	51338-27-3	no	yes	
Bayer	diflufenican	COUGAR ; JAVELIN ; FENIKAN	H	83164-33-4		yes	
Bayer	dikegulac sodium	ATRIMMEC	PGR	52508-35-7			yes
Bayer	dimefuron	PRADONE ; RANGER ; SCORPIO	H	34205-21-5			yes
Bayer	dinoterb	HERBOGIL	H	1420-07-1	no	yes	
Bayer	disulfoton	DISYSTON DITHIOSYSTOX	I	298-04-4		yes	
Bayer	DNOC (fung) ; 4,6-dinitro-o-cresol	TRIFOCIDE	F	534-52-1	no	yes	
Bayer	edifenphos	HINOSAN	F	17109-49-8			
Bayer	endosulfan	THIODAN CYCLODAN	I	115-29-7		yes	
Bayer	ethephon	ETHREL ; CERONE	PGR	16672-87-0	no	yes	
Bayer	ethiofencarb	CRONETON	I	29973-13-5			
Bayer	ethiprole ; sulfethiprole (rej.)	CURBIXKIRAPU	I	181587-01-9	no		yes
Bayer	ethofumesate	NORTRON ; TRAMAT ; PROGRASS ; TRAMAT ; ETHOSAT	H	26225-79-6			
Bayer	ethoprophos	MOCAP PROPHOS	I / N	13194-48-4		yes	
Bayer	ethoxysulfuron	SUNRICE ; SUNSTAR ; TOPRAN	H	126801-58-9	no		
Bayer	fenamidone	ARTE ; DUOFAST ; ELICIO ; FENOMEN ; SERENO ; VERITA	F	161326-34-7			
Bayer	fenamiphos	NEMACUR	N	22224-92-6		yes	
Bayer	fenfuram	PANO-RAM	F	24691-80-3	no		yes
Bayer	fenhexamid	TELDOR ; PASSWORD ; ELEVATE ; LAZULIE	F	126833-17-8			

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Bayer	fenitrothion	FOLITHION	I	122-14-5		yes	
Bayer	fenobucarb ; BPMC ; (RS)-2-sec-Butylphenyl-methylcarbamate	BAYCARB BASSA	I	3766-81-2			
Bayer	fenoxaprop-P-ethyl	SUPER WHIP ; OPTION SUPER ; EXEL SUPER	H	71283-80-2	no		yes
Bayer	fenpyroximate	AKARI KIRON FUJIMITE ;	I	134098-61-6		yes	
Bayer	fenthion	BAYCID BAYTEX LEBAYCID	I	55-38-9		yes	
Bayer	fentin acetate	BRESTAN	F	900-95-8			
Bayer	fentrazamide	LECSPRO ; DOUBLESTAR ; INNOVA ; DONICHI ; LEADING ; BAI TIAN JING	H	158237-07-1	no		yes
Bayer	flufenacet ; fluthiamide (rej.) ; thadiazolamide(rej.) thiaflumide (rej.)	CADOU ; DRAGO ; TIARA	H	142459-58-3		yes	
Bayer	fluopicolide ; picobenzamid (rej.)	INFINITO	F	239110-15-7	no	yes	
Bayer	fluoxastrobin	FANDANGO ; BARITON ; REDIG ; SCENIC ; HEC 480 ; EVITO DISARM	F	361377-29-9			yes
Bayer	flurtamone	NIKEYL ; BACARA ; BENCHMARK ; BIZON ; CARAT	H	96525-23-4	no		
Bayer	folpet	ACRYPTAN ; PHALTAN	F	133-07-3		yes	
Bayer	foramsulfuron	HUSAR ; FORTUNA ; MaisTer ; OPTION ; REVOLVER	H	173159-57-4	no		
Bayer	fosetyl aluminium	ALIETTE	F	39148-24-8			
Bayer	fuberidazole	VORONIT	F	3878-19-1			
Bayer	glufosinate-ammonium ; phosphinothricin ; PTC	BASTA ; IGNITE ; LIBERTY	H	77182-82-2		yes	
Bayer	heptenophos	HOSTAQUICK RAGADAN	I	23560-59-0			
Bayer	imidacloprid	ADMIRE CONFIDORGAUCHO	I	138261-41-3		yes	
Bayer	iodosulfuron-methyl sodium ; trifensulfuron (rej.)	HUSSAR ; CHEKKER	H	144550-36-7	no		
Bayer	ioxynil	ACTRIL ; CERTOL ; BANTROL	H	1689-83-4		yes	

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Bayer	iprovalicarb ; fencaramid (rej.)	MELODY ; POSITRON ; INVENTO	F	140923-17-7		yes	
Bayer	isoprocarb	ETROFOLAN HYTOX	I	2631-40-5			
Bayer	isoproturon	ALON ; ARELON ; BELGRAN	H	34123-59-6			
Bayer	isoxaflutole	BALANCE ; MERLIN ; ACAJOU ; LAGON ; CONVERGE	H	141112-29-0	no	yes	
Bayer	Kadethrin (non BSI)	KADETHRIN	I	58769-20-3	no		yes
Bayer	MCPB	LEGUMEX ; THISTROL	H	94-81-5		yes	
Bayer	mecoprop	MECOPEX ; MCPP	H	7085-19-0			
Bayer	mefenacet	HINOCHLOA ; RANCHO	H	73250-68-7			
Bayer	mefenpyr-diethyl	–	HS	135590-91-9			
Bayer	mesosulfuron-methyl ; amosulfuron (rej.)	COSSACK ; MESOMAXX ; ABSOLU, ARCHIPEL ; ATLANTIS ; OSPREY ; SILVERADO	H	208465-21-8	no		
Bayer	Metarhizium anisopliae	BIOLOGIC ; New Bio-1020 ; TAENURE ; TAERAIN ; TICK-EX	Biol	–	no		
Bayer	methabenzthiazuron	TRIBUNIL	H	18691-97-9		yes	
Bayer	methamidophos	TAMARON MONITOR(ins)	I	10265-92-6		yes	
Bayer	methiocarb ; mercaptodimethur	MESUOLDRAZA MXMC	I	2032-65-7		yes	
Bayer	methyl isothiocyanate (fung)	TRAPEX (fung)	F	556-61-6	no	yes	
Bayer	methyl isothiocyanate (ins)	TRAPEX(ins)	I	556-61-6	no	yes	
Bayer	metribuzin	SENCOR ; SENCOREX	H	21087-64-9		yes	
Bayer	monolinuron	ARESIN	H	1746-81-2			
Bayer	niclosamide	BAYUSCID ; BAYLUSCIDE	M	50-65-7	no		
Bayer	ofurace	OTURANIC	F	58810-48-3			yes
Bayer	omethoate	FOLIMAT	I	1113-02-6		yes	
Bayer	oxadiargyl	RAFT ; TOPSTAR ; FENAX	H	39807-15-3		yes	
Bayer	oxadiazon	RONSTAR ; FORESITE ; LONGSHOT	H	19666-30-9		yes	

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Bayer	oxaziclomefone ; axaziclometone (rej.)	SAMURAI ; HOMERUN ; THOROUGHbred ; TREDY ; PATFUL	H	153197-14-9	no		yes
Bayer	oxydemeton-methyl	METASYSTOX R	I	301-12-2		yes	
Bayer	parathion	BLADEN FOLIDOL	I	56-38-2		yes	
Bayer	parathion-methyl	FOLIDOL-MMETACIDE BLADAN M PENNCAP M	I	298-00-0		yes	
Bayer	pencycuron ; penaguran	MONCEREN	F	66063-05-6			
Bayer	phenmedipham	BETANAL	H	13684-63-4			
Bayer	phenylmercury acetate	UNISAN	F	62-38-4	no		
Bayer	phoxim	BAYTHION VOLATON	I	14816-18-3		yes	
Bayer	picaridin ; propidine (rej.)	BAYREPEL	Repellent	119515-38-7	no		
Bayer	propamocarb hydrochloride	PREVICUR N ; TATTOO	F	25606-41-1	no		yes
Bayer	propineb	ANTRACOL	F	12071-83-9	no	yes	
Bayer	propoxur	UNDEN UNDENE	I	114-26-1		yes	
Bayer	propoxycarbazone-sodium ; procarbazone (rej.)	ATTRIBUT (EU) ; OLYMPUS (USA)	H	181274-15-7			yes
Bayer	prothioconazole	PROLINE ; JAU ; REDIGO	F	178928-70-6			
Bayer	prothiofos	TOKUTHION BIDERON	I	34643-46-4			yes
Bayer	pyrazophos	AFUGAN	F	13457-18-6		yes	
Bayer	quinalphos	BAYRUSIL	I	13593-03-8		yes	
Bayer	quinomethionate ; oxythioquinox ; quinoxalines	MORESTAN (ins)	I	2439-01-2		yes	
Bayer	quintozene	FOLOSAN ; PCNB ; TURFCIDE WDG	F	82-68-8		yes	
Bayer	rotenone ; derris	NOXFIRE	I	83-79-4		yes	
Bayer	silafiuofen ; flufenprosil (rej.) ; silafuthrin (rej.)	SILONEN JOKER SILATOP	I	105024-66-6	no		yes
Bayer	spirodiclofen	ENVIDOR DANIEMON	I	148477-71-8		yes	
Bayer	spiromesifen	OBERON FORBID 4F	I	283594-90-1			yes
Bayer	spiroxamine	IMPULSE ; PROSPER ; HOGGAR ; ACCRUE	F	118134-30-8			
Bayer	sulcotrione ; chlormesulone (rej.)	GALLEON ; MIKADO	H	99105-77-8	no		

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Bayer	sulfotep	BLADAFUM TEDP	I	3689-24-5		yes	
Bayer	sulprofos	BOLSTAR HELOTHION	I	35400-43-2	no		
Bayer	tebuconazole ; terbutrazole (rej.) ; fenetrazol (rej.)	FOLICUR ; RAXIL ; HORIZON (Bayer) ; ORIUS	F	107534-96-3			
Bayer	tebupirimfos ; phostebupirim (rej.)	AZTEC(ii)	I	96182-53-5	no	yes	
Bayer	tecnazene ; TCNB	FUSAREX	F	117-18-0		yes	
Bayer	tembotrione	LAUDIS	H	335104-84-2	no		yes
Bayer	thiacloprid	CALYPSO BARIARD ALANTOBISCAYA	I	111988-49-9		yes	
Bayer	thidiazuron	DROPP	PGR	51707-55-2	no		yes
Bayer	thiodicarb	LARVIN SEMEVIN FLUXOLSKIPPER	I	59669-26-0		yes	
Bayer	thiram	POMARSOL	F	137-26-8	no	yes	
Bayer	tolyfluanid	EUPAREN M	F	731-27-1		yes	
Bayer	tralomethrin	SCOUT	I	66841-25-6	no	yes	
Bayer	transfluthrin ; benfluthrin (rej.)	BAYGONBAYOTHRIN	I	118712-89-3	no	yes	
Bayer	triadimefon	BAYLETON	F	43121-43-3		yes	
Bayer	triadimenol	BAYTAN	F	55219-65-3		yes	
Bayer	triazophos	HOSTATHION	I / A / N	24017-47-8		yes	
Bayer	triazoxide	BRIO	F	72459-58-6	no		yes
Bayer	tribufos	DEF 6 ; FOLEX	PGR	78-48-8	no		yes
Bayer	trichlorfon	DIPTEREX DYLOX	I	52-68-6		yes	
Bayer	trietazine	REMTAL	H	1912-26-1	no		yes
Bayer	trifloxystrobin	FLINT ; COMPASS ; STRATEGO ; ROMBUS ; TEGA ; TWIST	F	141517-21-7			
Bayer	triflumuron	ALYSTIN TRIMURON	I	64628-44-0			
Bayer	trimethacarb	BROOT LANDRIN	I	12407-86-2			
Bayer	vamidotion	KILVAL	I	2275-23-2	no	yes	
Bayer	ziram	CUMAN	F	137-30-4	no	yes	
Bayer ;	isofenphos	OFTANOL AMAZE	I	25311-71-1			
Dow	1,3-dichloropropene ; dichloropropene	TELONE ; DORLENE ; TELOPIC	Fu	542-75-6	no	yes	

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Dow	4-CPA ; 4-chlorophenoxyacetic acid	PCPA	PGR	122-88-3			
Dow	acetochlor	RELAY ; WINNER ; SUPASS ; TROPHY	H	34256-82-1	no	yes	
Dow	aminopyralid	PASTAR DOMINUM SIMPLEX ; MILESTONE ; RESTORE ; TORDON MAX ; TRONADOR MAX ; CLEANWAVE FOREFRONT ; HOTSHOT BROADNET	H	150114-71-9	no		yes
Dow	ancymidol	A-REST	PGR	12771-68-5			yes
Dow	Bacillus thuringiensis Cry1F / Cry1Ac	WIDESTRIKE	Biol	–	no		
Dow	Bacillus thuringiensis strain Cry 34/35	HERCULEX RW	Biol	–	no		
Dow	benfluralin ; benefin	BALAN	H	1861-40-1		yes	
Dow	bromethalin	–	R	63333-35-7	no	yes	
Dow	butocarboxim	DRAWIN 755	I	34681-10-2	no	yes	
Dow	butoxycarboxim	PLANT PIN	I	34681-23-7	no		yes
Dow	chlormephos	–	I	24934-91-6		yes	
Dow	chlorpyrifos	DURSBAN ; LORSBAN	I	2921-88-2		yes	
Dow	chlorpyrifos-methyl	RELDAN	I	5598-13-0		yes	
Dow	clofencet-potassium	–	PGR	82697-71-0	no		
Dow	clopyralid ; 3-6-DPA ; 3,6-dichloropicolinic acid	LONTREL ; STINGER ; RECLAIM ; MATRIGON ; CYRONAL	H	1702-17-6			
Dow	cloransulam-methyl	FirstRate	H	147150-35-4	no		yes
Dow	cyhalofop-butyl	CLINCHER	H	122008-85-9			
Dow	dalapon-sodium ; 2,2-dichloropropanoic acid sodium salt	–	H	127-20-8			
Dow	diclosulam	STRONGARM ; SPIDER	H	145701-21-9	no		yes
Dow	dicofol	KELTHANE	I / A	115-32-2		yes	
Dow	dinocap	KARATHANE	F	39300-45-3		yes	
Dow	dithiopyr	DIMENSION ; STAKEOUT	H	97886-45-8			
Dow	ethalfuralin	SONALAN	H	55283-68-6	no	yes	

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Dow	fenbuconazole ; azuthane (rej.) ; fenethanil	ENABLE ; INDAR	F	114369-43-6			
Dow	ferbam	FERMATE ; TRIFUNGOL	F	14484-64-1	no		
Dow	florasulam	PRIMUS ; BOXER ; NIKOS	H	145701-23-1			
Dow	flumetsulam	BROADSTRIKE ; PRESIDE ; SCORPION	H	98967-40-9	no		
Dow	fluoroglycofen-ethyl	COMPETE ; SATIS ; SIMTAR	H	77501-90-7	no		yes
Dow	fluridone	SONAR	H	59756-60-4	no		
Dow	fluroxypyr	STARANE ; ADVANCE	H	69377-81-7			
Dow	flurprimidol	CUTLESS	PGR	56425-91-3			
Dow	gamma-cyhalothrin ; supercyhalothrin (rej.) ; GCH	ARCHER-PLUS ; FIGHTER-PLUS ; VANTEX ; PROAXIS ; PROLEX ; NEXIDE	I	76703-62-3	no	yes	
Dow	guazatine triacetate	RADAM ; PANOCTINE ; KENOPAL	F	115044-19-4	no		
Dow	halofenozide ; haloflexozide (rej.)	MACH 2	I	112226-61-6			yes
Dow	haloxyfop-etotyl	GALLANT	H	87237-48-7	no	yes	
Dow	haloxyfop-methyl	VERDICT	H	69806-40-2	no	yes	
Dow	haloxyfop-P-methyl	ELOGE ; GALLANT SUPER	H	72619-32-0	no	yes	
Dow	hexaflumuron	CONSULT ; TRUENO ; CONSUL ; SENTRICON	I	86479-06-3		yes	
Dow	isoxaben ; benzamizole	FLEXIDOR ; GALLERY	H	82558-50-7		yes	
Dow	mancopper	DITHANE C90	F	53988-93-5	no		yes
Dow	mancozeb	DITHANE M-45 ; MANZATE-200	F	8018-01-7	no	yes	
Dow	maneb	DITHANE M-22 ; MANZATE	F	12427-38-2	no	yes	
Dow	mecarbam	MURFOTOX	I	2595-54-2			
Dow	methoxyfenozide	INTREPID ; RUNNER ; FALCON (Jp) ; PRODIGY	I	161050-58-4			
Dow	metosulam	ECLIPSE ; UPTAKE ; PRONTO ; BARKO	H	139528-85-1			
Dow	myclobutanil	SYSTHANE ; MYCLOSS ; RALLY ; LAREDO ; EAGLE	F	88671-89-0		yes	

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Dow	nabam	DITHANE D-14	F	142-59-6	no	yes	
Dow	nitrapyrin	N-SERVE	B	1929-82-4	no	yes	
Dow	nonanoic acid ; pelargonic acid (PGR)	SCYTHE ; THINNEX	PGR	112-05-0	no		
Dow	noviflumuron	RECRUIT III ; RECRUIT III AG ; RECRUIT IV ; RECRUIT IV AG	I	121451-02-3			yes
Dow	nuarimol	–	F	63284-71-9		yes	
Dow	octhiline	PANCIL-T	F / B	26530-20-1	no		
Dow	oryzalin	SURFLAN ; RYZELAN ; DIRIMAL	H	19044-88-3		yes	
Dow	oxyfluorfen	GOAL ; KOLTAR ; GALIGAN	H	42874-03-3		yes	
Dow	penoxsulam	VIPER RICER ; CHEROKEE ; GRANITE ; GRASP BENGALA ; RAINBOW TOPSHOT ; FENCER	H	219714-96-2	no		
Dow	pentachlorophenol ; PCP	DOWCIDE 7 ; PENTA	F	87-86-5	no	yes	
Dow	picloram	TORDON ; GRAZON	H	1918-02-1	no	yes	
Dow	piperalin	PIPRON	F	3478-94-2	no		yes
Dow	propanil	STAM ; STAM F-34 ; ROGUE	H	709-98-8			
Dow	propyzamide ; pronamide	KERB ; RAPSOL	H	23950-58-5		yes	
Dow	pyroxsulam			422556-08-9	no		yes
Dow	quinoxifen	FORTRESS (1) ; ABIR ; ARIUS ; LEGEND ; ELIOS ; QUINTOC	F	124495-18-7		yes	
Dow	spinosad ; spinosyn	TRACER ; NATURALYTE ; CONSERVE ; SUCCESS ; SPINTOR ; ENTRUST	I	168316-95-8			
Dow	sulfuryl fluoride	VIKANE ; PROFUME	I	2699-79-8	no		
Dow	TCA-sodium ; trichloroacetic acid sodium salt	–	H	650-51-1	no		
Dow	tebufenozide	MIMIC ; CONFIRM	I	112410-23-8			
Dow	tebuthiuron	SPIKE ; PERFLAN	H	34014-18-1	no	yes	
Dow	thiazopyr	VISOR ; HATCHET ; IMPROVISE ; SPINDLE ; MANDATE	H	117718-60-2			

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Dow	thifluzamide	GREATAM ; PULSOR ; BETON	F	130000-40-7	no		yes
Dow	triazamate ; triazuron	APHISTAR	I	112143-82-5			
Dow	triclopyr	GARLON ; TRIDENT (herb) ; RENOVATE	H	55335-06-3			
Dow	tricyclazole	BEAM	F	41814-78-2			
Dow	trifluralin	TREFLAN	H	1582-09-8		yes	
Dow	zineb	DITHANE Z-78 ; PARZATE	F	12122-67-7	no	yes	
Dow	zoxamide	GAVEL ; ELECTIS ; ZOXIUM ; UNIKAT ; ROXAM ; ADERIO ; HARPON	F	156052-68-5			
Monsanto	4-(dichloroacetyl)-1-oxa-4- azaspiro[4, 5]decane	–	HS	71526-07-3	no	yes	
Monsanto	acetochlor	HARNESS	H	34256-82-1	no	yes	
Monsanto	acetochlor (encapsulated)	–	H	34256-82-1	no	yes	
Monsanto	alachlor	LASSO	H	15972-60-8		yes	
Monsanto	butachlor	MACHETE	H	23184-66-9	no	yes	
Monsanto	clofencet-potassium	GENESIS	PGR	82697-71-0	no		
Monsanto	flurazole	SCREEN	HS	72850-64-7	no		
Monsanto	furilazole	–	HS	121776-33-8	no	yes	
Monsanto	glyphosate- isopropylammonium	–	H	38641-94-0	no		
Monsanto	glyphosate- isopropylammonium	ROUNDUP ; RODEO	H	38641-94-0	no		
Monsanto	halosulfuron-methyl ; clopyrasulfuron-methyl (rej.)	PERMIT ; BATTALION	H	100784-20-1	no		yes
Monsanto	propachlor	RAMROD	H	1918-16-7		yes	
Monsanto	silthiofam ; silthiopham (rej)	LATITUDE	F	175217-20-6			yes
Monsanto	sulfosulfuron	MONITOR (herb) ; MAVERICK ; OUTRIDER ; LEADER ; CERTAINTY	H	141776-32-1	no	yes	
Monsanto	tri-allate	FAR-GO ; AVADEX BW	H	2303-17-5		yes	
Syngenta	2-(1-naphthyl)acetic acid ; α - naphthaleneacetic acid	FRUITONE-N ; NAA	PGR	86-87-3			yes

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Syngenta	abamectin	DYNAMEC ; VERMITEC ; ZEPHYR ; CLINCH ; AVID ; AVICTA ; AGRIMEK STAN	I	71751-41-2		yes	
Syngenta	acibenzolar-S-methyl ; benzothiadiazole	BION ; ACTIGARD ; BLOCKADE	DRA	135158-54-2			
Syngenta	ametryn	GESAPAX EVIK	H	834-12-8			
Syngenta	atrazine	ATTREX GESAPRIM	H	1912-24-9		yes	
Syngenta	azamethiphos	ALFACRON	I	35575-96-3	no	yes	
Syngenta	azoxystrobin ; pyroxyystrobin (rej.)	HERITAGE ; ABOUND ; AMISTAR ; DYNASTY ; QUADRIS ; QUILT	F	131860-33-8			
Syngenta	Bacillus thuringiensis var. aizawai	CERTAN ; FLORBAC ; AGREE ; DESIGN	Biol	–	no		
Syngenta	Bacillus thuringiensis var. israelensis	VECTOBAC ; BIOLAR B	Biol	–	no		
Syngenta	Bacillus thuringiensis var. kurstaki	DIPEL ; AATRACK ; THURICIDE B	Biol	–	no		
Syngenta	Bacillus thuringiensis var. kurstaki	ABLE ; TUREX	Biol	–	no		
Syngenta	Bacillus thuringiensis var. kurstaki	–	Biol	–	no		
Syngenta	Bacillus thuringiensis var. tenebrionis ; Bacillus thuringiensis var. san diego	NOVODOR ; TRIDENT(ins) ; NovoBt	Biol	–	no		
Syngenta	benoxacor	SAFENEAR	HS	98730-04-2	no		
Syngenta	bensultap	MALICE ; BANCOL	I	17606-31-4		yes	
Syngenta	bromofenoxim	FANERON	H	13181-17-4	no		
Syngenta	bromopropylate	NEORON ; ACAROL	I / A	18181-80-1		yes	
Syngenta	butafenacil ; fluobutrakil (rej.)	INSPIREREBIN B- POWER	H	134605-64-4			yes
Syngenta	butoxydim	FALCON	H	138164-12-2	no		
Syngenta	butylate	SUTAN	H	2008-41-5			yes
Syngenta	chlorbromuron	MALORAN	H	13360-45-7			
Syngenta	chlordane	OCTACHLOR	I	57-74-9	no		
Syngenta	chloretazate-potassium ; karetazan (rej.)	DETASSELOR	PGR	81051-65-2	no		
Syngenta	chlorfenvinphos	SAPECRON	I	470-90-6		yes	

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Syngenta	chlorfluazuron	ATABRON	I	71422-67-8		yes	
Syngenta	chlorothalonil	BRAVO ; DACONIL 2787 ; EQUUS	F	1897-45-6		yes	
Syngenta	chlorotoluron	DICURAN	H	15545-48-9			
Syngenta	cinosulfuron ; dimetrasulfuron (rej.)	SETOFF ;	H	94593-91-6	no		
Syngenta	clodinafop-propargyl	HORIZON(Novartis) DISCOVER TOPIK CELIO	H	105512-06-9			
Syngenta	cloquintocet-mexyl	–	HS	99607-70-2	no		
Syngenta	cybutryne	–	F	28159-98-0	no		
Syngenta	cycloate	RO-NEET	H	1134-23-2	no	yes	
Syngenta	cycloprothrin	CYCLOSAL	I	63935-38-6	no		yes
Syngenta	cyhalothrin	GRENADE	I	68085-85-8	no	yes	
Syngenta	cymiazole	TIFATOL	I / A	61676-87-7	no		yes
Syngenta	cypermethrin	AMBUSH C ; CYMBUSH ; IMPERATOR ; KAFIL SUPER	I	52315-07-8			
Syngenta	cyproconazole	ALTO ; SENTINEL	F	94361-06-5		yes	
Syngenta	cyprodinil	UNIX ; HELMET ; CHORUS ; VANGUARD ; SWITCH	F	121552-61-2			
Syngenta	cyromazine	TRIGARD ; LARVADEX	I	66215-27-8		yes	
Syngenta	DDT ; dichlorodiphenyltrichloroethane	DDT	I	50-29-3			
Syngenta	desmetryn	SEMERON	H	1014-69-3	no		
Syngenta	diafenthiuron	POLO ; PEGASUS	I	80060-09-9			
Syngenta	diazinon	SPECTRACIDE ; DIAZIDE	I	333-41-5		yes	
Syngenta	dicamba	BANVEL	H	1918-00-9		yes	
Syngenta	dichlormid	–	HS	37764-25-3			yes
Syngenta	dichlorvos	NOGOS ; NUVAN	I	62-73-7		yes	
Syngenta	dicrotophos	CARBICRON ; EKTAFOS	I	141-66-2		yes	
Syngenta	dicyclanil	–	IGR	112636-83-6	no		yes
Syngenta	dienochlor	PENTAC	I / A	2227-17-0	no		

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Syngenta	difenoconazole	SCORE ; DRAGON ; DIVIDEND ; ERIA	F	119446-68-3		yes	
Syngenta	diflufenzopyr	DISTINCT	H	109293-97-2			yes
Syngenta	dimethachlor	TERiDOX	H	50563-36-5			
Syngenta	dimethametryn	AVIROSAN	H	22936-75-0			yes
Syngenta	dimethirimol	MILCURB	F	5221-53-4	no		yes
Syngenta	diofenolan	AWARE ; CONTEXT	I	63837-33-2	no		yes
Syngenta	diphacinone	–	R	82-66-6	no	yes	
Syngenta	diphenamid	DYMid	H	957-51-7			
Syngenta	diquat dibromide	REGLONE AQUACIDE	H	85-00-7	no	yes	
Syngenta	emamectin benzoate	PROCLAIM ; AFFIRM ; BANLEP ; DENIM ; STRATEGY	I	155569-91-8			
Syngenta	EPTC ; S-ethyl dipropyl(thiocarbamate)	EPTAM ERADICANE ERADICANEEXTRA	H	759-94-4		yes	
Syngenta	esprocarb	FUJI-GRASS	H	85785-20-2			yes
Syngenta	etaconazole	SONAX	F	60207-93-4			
Syngenta	ethirimol	MILGO	F	23947-60-6			
Syngenta	fenclorim	–	HS	3740-92-9	no		
Syngenta	fenoxy carb	INSEGAR ; COMPLY ; LOGIC	I	79127-80-3		yes	
Syngenta	fenpiclonil	BERET ; GALBAS	F	74738-17-3		yes	
Syngenta	fenpropidin	TERN ; PATROL	F	67306-00-7		yes	
Syngenta	fenpropimorph	CORBEL ; MISTRAL	F	67564-91-4		yes	
Syngenta	flazasulfuron	MISSION	H	104040-78-0	no		
Syngenta	fluazifop-butyl	FUSILADE	H	69806-50-4		yes	
Syngenta	fluazifop-P-butyl	FUSILADE 5	H	79241-46-6	no	yes	
Syngenta	fluazinam	SHIRLAN ; FROWNCIDE ; OMEGA ; ALLEGRO	F	79622-59-6		yes	
Syngenta	fluazuron	ACATAK	IGR	86811-58-7			yes
Syngenta	fludioxonil	SAPHIRE ; CELEST ; MAXIM	F	131341-86-1		yes	
Syngenta	flufenprox	–	I	107713-58-6	no		yes
Syngenta	flumetralin	PRIME	PGR	62924-70-3	no		

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Syngenta	fluometuron	COTORAN LANEX	H	2164-17-2	no		
Syngenta	fluthiacet-methyl	ACTION	H	117337-19-6	no	yes	
Syngenta	flutriafol ; flutriafen	IMPACT ; VINCIT	F	76674-21-0		yes	
Syngenta	fluxofenim	CONCEP III	HS	88485-37-4	no		yes
Syngenta	fomesafen	FLEX REFLEX	H	72178-02-0			
Syngenta	fonofos	DYFONATE	I	944-22-9			
Syngenta	forchlorfenuron ; CPPU	SITOFEX ; PRESTIGE	PGR	68157-60-8		yes	
Syngenta	formothion	ANTHIO ; AFLIX	I	2540-82-1			
Syngenta	fosthiazate	ECLAHRA ; NEMATHORIN	N	98886-44-3		yes	
Syngenta	furalaxyl	FONGARID	F	57646-30-7			
Syngenta	furathiocarb	DELTANET ; PROMET	I	65907-30-4		yes	
Syngenta	gamma-HCH	GAMMEXANE ; LINDANE ; HCH	I	58-89-9		yes	
Syngenta	gibberellic acid	PRO-GIBB ; BERELEX ; ACTIVOL ; GIBGRO	PGR	77-06-5			yes
Syngenta	glyphosate-trimesium sulfosate	TOUCHDOWNOURAG AN	H	81591-81-3	no		
Syngenta	gossypure	-	Ph	50933-33-0	no		
Syngenta	Heliothis nuclear polyhedrosis virus	ELCAR ; HNPV	Biol	-	no		
Syngenta	heptachlor	DRINOX	I	76-44-8			
Syngenta	hexaconazole	ANVIL ; PLANETE	F	79983-71-4		yes	
Syngenta	hydroprene	ALTOZAR ; GENCOR	IGR	41096-46-2	no		yes
Syngenta	isazofos	MIRAL ; TRIUMPH ; BRACE	I / N	42509-80-8	no		
Syngenta	isoproturon	TOLKAN GRAMINON	H	34123-59-6			
Syngenta	lambda-cyhalothrin	KARATE ; WARRIOR ; DEMAND ; ICON	I	91465-08-6		yes	
Syngenta	lufenuron	MATCH ; AXOR ; SORBA ; ZYROX	I	103055-07-8			
Syngenta	MCPA	AGROXONE	H	94-74-6			
Syngenta	mefenoxam ; metalaxyl-M	APRON XL ; RIDOMIL GOLD	F	70630-17-0	no		
Syngenta	mercuric oxide	SANTAR	F	21908-53-2	no	yes	

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Syngenta	mesotrione	CALLISTO	H	104206-82-8	no	yes	
Syngenta	metalaxyl	RIDOMIL	F	57837-19-1			
Syngenta	metam (fung)	VAPAM ; VPM	F	144-54-7	no	yes	
Syngenta	metam (herb)	VAPAM (herb)	H	144-54-7	no	yes	
Syngenta	methacrifos	DAMFIN	I	62610-77-9	no		yes
Syngenta	methidathion	SUPRACIDE ; ULTRACIDE	I	950-37-8		yes	
Syngenta	methoprene	ALTOSID ; PHAROID	IGR	40596-69-8	no		
Syngenta	methoxychlor	MARLATE	I	72-43-5		yes	
Syngenta	metobromuron	PATORAN	H	3060-89-7			yes
Syngenta	metolachlor	DUAL MEDAL	H	51218-45-2			
Syngenta	metoxuron	DOSANEX	H	19937-59-8			
Syngenta	molinate	ORDRAM	H	2212-67-1	no	yes	
Syngenta	monocrotophos	NUVACRON	I	6923-22-4		yes	
Syngenta	muscalure	MUSCAMONE	Ph	27519-02-4	no		
Syngenta	napropamide	DEVRIKOL	H	15299-99-7			
Syngenta	nicosulfuron	NISSHIN MILAGRO	H	111991-09-4	no		
Syngenta	norflurazon	ZORIAL SOLICAM	H	27314-13-2		yes	
Syngenta	oxabetrinil	CONCEP II	HS	94593-79-0	no		yes
Syngenta	oxadixyl	SANDOFAN	F	77732-09-3			
Syngenta	oxasulfuron	DYNAM CHART	H	144651-06-9	no		
Syngenta	oxine-copper	QUINOLATE	F	10380-28-6	no		yes
Syngenta	paclobutrazol	BONZI ; CLIPPER ; CULTAR ; PARLAY	PGR	76738-62-0		yes	
Syngenta	paraquat-dichloride	GRAMOXONE CYCLON E DEXTRONE X	H	1910-42-5	no	yes	
Syngenta	pebulate	TILLAM	H	1114-71-2			
Syngenta	penconazole	TOPAS ; AWARD	F	66246-88-6			
Syngenta	permethrin	AMBUSH ; PRELUDE	I	52645-53-1		yes	
Syngenta	phosphamidon	DIMECRON	I	13171-21-6		yes	
Syngenta	picoxystrobin	ACANTO	F	117428-22-5			
Syngenta	pinoxaden	AXIAL	H	243973-20-8	no		

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Syngenta	piperophos	RILOF	H	24151-93-7	no		
Syngenta	pirimicarb	PIRIMOR ; APOX	I	23103-98-2		yes	
Syngenta	pirimiphos-ethyl	FERNEX	I	23505-41-1	no		
Syngenta	pirimiphos-methyl	ACTELLIC	I	29232-93-7		yes	
Syngenta	pretilachlor	RIFIT SOLNET	H	51218-49-6			yes
Syngenta	primisulfuron-methyl	BEACON TELLRIFLE	H	86209-51-0	no		
Syngenta	prodiamine	BARRICADE (i) RYDEXENDURANCE FACTOR KUSABLOCK	H	29091-21-2	no	yes	
Syngenta	profenofos	CURACRON ; SELECRON	I	41198-08-7		yes	
Syngenta	prometon	GESAGRAM PRAMITOL	H	1610-18-0	no		
Syngenta	prometryn	CAPAROL GESAGARD	H	7287-19-6		yes	
Syngenta	propaquizafop	AGIL SHOGUN	H	111479-05-1		yes	
Syngenta	propazine	MILOGARD GESAMIL	H	139-40-2		yes	
Syngenta	propetamphos	SAFROTIN	I	31218-83-4			
Syngenta	propham	IPC	PGR	122-42-9			
Syngenta	propiconazole	TILT	F	60207-90-1		yes	
Syngenta	prosulfocarb	BOXER DEFI	H	52888-80-9		yes	
Syngenta	pymetrozine	STERLING ; PLENUM ; CHESS ; FULFILL ; ENDEAVOR	I	123312-89-0		yes	
Syngenta	pyridate	LENTAGRAN FENDAZIN	H	55512-33-9			
Syngenta	pyrifenox	DORADO ; PODIGROL	F	88283-41-4			
Syngenta	pyrifthalid	APIRO	H	135186-78-6	no		yes
Syngenta	pyroquilon	CORATOP ; FONGORENE	F	57369-32-1	no		
Syngenta	quinalphos	EKALUX	I	13593-03-8		yes	
Syngenta	S-metolachlor ; alpha- metolachlor (rej.)	DUAL MAGNUM DUAL GOLD BICEP II PRIMEXTRA GOLD MAGNUM	H	87392-12-9	no		
Syngenta	simazine	GESATOP PRINCEP CALIBER90	H	122-34-9		yes	
Syngenta	simetryn	GYBON	H	1014-70-6	no		

Company *	Active ingredient incl. alias	Trade names	Group **	CAS Nr	Analysable	On Black List	On Yellow List
Syngenta	sodium chloroacetate	–	H	3926-62-3	no		
Syngenta	sulcofuron-sodium	MITIN	I	3567-25-7	no		yes
Syngenta	tau-fluvalinate	MAVRIK ; KLARTAN	I	102851-06-9		yes	
Syngenta	tebutam	COMODOR	H	35256-85-0	no		
Syngenta	tefluthrin	FORCE ; FORZA	I	79538-32-2		yes	
Syngenta	terbumeton	CARAGARD	H	33693-04-8		yes	
Syngenta	terbuthylazine	GARDOPRIM	H	5915-41-3		yes	
Syngenta	terbutryn	IGRAN PREBANE	H	886-50-0		yes	
Syngenta	thiabendazole	MERTECT ; STORITE ; TECTO	F	148-79-8		yes	
Syngenta	thiamethoxam ; diaclofen (rej.)	ACTARA ; FLAGSHIP ; MERIDIAN ; HELIX ; ADAGE ; CRUISER (2)	I	153719-23-4			
Syngenta	thiocyclam	EVISECT ; EVISEKT	I	31895-21-3			yes
Syngenta	thiometon	EKATIN	I	640-15-3		yes	
Syngenta	tralkoxydim	GRASP SPLENDOR ACHIEVE ;	H	87820-88-0			
Syngenta	triasulfuron	AMBER LOGRAN	H	82097-50-5	no		
Syngenta	trietazine	REMTAL	H	1912-26-1	no		yes
Syngenta	trifloxysulfuron-sodium	KRISMATENFIELD ENVOKE MONUMENT	H	199119-58-9	no		
Syngenta	trinexapac-ethyl	MODUS ; PRIMO ; VISION ; OMEGA	PGR	95266-40-3	no		yes

213 not 240 on 80 on
 analysable Black List Yellow List

* Dow = Dow AgroSciences; Bayer = Bayer CropScience

** A = acaricide; B = bactericide; F = fungicide; H = herbicide; I = insecticide; M = molluscicide; N = nematocide; R = rodenticide; Fu = fumigant; PGR = plant growth regulator; Ph = pheromone; DRA = disease resistance activator; HS = herbicide safener; IGR = insect growth regulator

II. Greenpeace request and company responses regarding the portfolio of active ingredients. The example of BASF (all companies who replied used a similar text):

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Sehr geehrte Frau Pohl,
sehr geehrte Damen und Herren,

seit vielen Jahren befasst sich Greenpeace mit den Auswirkungen des Einsatzes von Pestiziden auf Mensch und Umwelt. Wir bemühen uns dabei um eine objektive und unabhängige Bewertung der im Verkehr befindlichen Wirkstoffe. Anlässlich der Publikation der Greenpeace-Studien „Grenzen der Pestizidanalytik“ und „Schwarze Liste der Pestizide“ im Februar 2008 gab es eine kontroverse Diskussion darüber, wie viele und welche Wirkstoffe derzeit global vermarktet werden. Der Industrieverband Agrar äußerte dazu gleichfalls[1].

Wir wollen die Frage, welche Pflanzenschutzmittel derzeit weltweit im Einsatz sind, näher klären und wenden uns daher an Sie als einen der globalen Marktführer. Nach den uns vorliegenden Recherchen vertreibt Ihr Unternehmen derzeit weltweit die in der Anlage verzeichneten Pestizidwirkstoffe.

Wir bitten Sie, diese Liste zu überprüfen und uns über gelistete Wirkstoffe zu informieren, die Ihr Unternehmen nicht (mehr) vertreibt; sowie über Wirkstoffe, die Sie vertreiben, die jedoch nicht aufgelistet sind. Unsere Frage bezieht sich dabei auf alle von Ihrem Unternehmen in einem oder mehreren Ländern vertriebenen Wirkstoffe.

Mit Ihrer Antwort helfen Sie uns, die gegenwärtige Marktlage richtig einzuschätzen. Wir können so z.B. auch vermeiden, dass ggf. in Umwelt- und Lebensmittelproben aufgefundene Wirkstoffrückstände Ihrem Unternehmen zugeschrieben werden, sofern Sie diese nicht mehr vertreiben. Sollten wir keine Rückmeldung von Ihnen erhalten, gehen wir davon aus, dass unsere Recherche richtig ist.

Wir bitten Sie um Ihre Antwort möglichst bis zum 5. Mai 2008. Um Ihnen die Bearbeitung zu erleichtern, senden wir Ihnen die von uns ermittelte Wirkstoffliste auch per e-mail als Excel-Tabelle zu. Wir wären Ihnen verbunden, wenn Sie uns Ihre Antwort gleichfalls in dieser elektronischen Form zukommen lassen könnten.

Wir freuen uns auf das Gespräch mit Ihnen und Ihren Kollegen in Hamburg!
Mit freundlichen Grüßen,

Manfred Krautter, Greenpeace, Bereich Chemie & Landwirtschaft

Anlage

[1] http://www.iva.de/presse_news/pr_artikle.asp?doc=345



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Ihre Anfrage vom 21. April 2008 zum Thema Wirkstoffliste

Sehr geehrter Herr Krautter,

- wir möchten uns für den Informationsaustausch, den wir mit Ihnen am 22. April 2008 in Hamburg zum Thema „Lebensmittelsicherheit und Anwenderschutz“ geführt haben, bedanken. Wir als Unternehmen sind an einer Fortführung eines konstruktiven, offenen und fairen Dialogs interessiert.

Bezüglich Ihrer Anfrage vom 21. April 2008 möchten wir Ihnen folgende Informationen zukommen lassen:

Alle Pflanzenschutzmittel durchlaufen ein sehr aufwändiges Zulassungsverfahren und werden nur dann von den nationalen Behörden zugelassen, wenn sie bei sachgerechter Anwendung sicher für den Anwender, den Verbraucher und die Umwelt sind. Eine wesentliche Anforderung im Rahmen des Zulassungsverfahrens von Pflanzenschutzmitteln ist die Einreichung valider und für jeden Wirkstoff geeigneter Analysemethoden. Dadurch ist sichergestellt, dass Höchstmengen in Lebensmitteln überwacht werden können.

Hinsichtlich der aktuell in der Landwirtschaft im Einsatz befindlichen Wirkstoffe wenden Sie sich bitte an die jeweiligen Zulassungsbehörden. Diese sind berechtigt, Auskünfte zu erteilen. Gerne sind wir Ihnen behilflich und nennen Ihnen die entsprechenden Behörden in Europa.

Wir möchten jedoch für Ihre Recherche darauf aufmerksam machen, dass Ihnen die Zuordnung eines Wirkstoffs zu einem Hersteller häufig keine vollständige Information liefert, da die patentfreien Wirkstoffe von einer größeren Anzahl von Unternehmen vertrieben werden können.

Die von Ihnen beigefügte Liste der Wirkstoffe können wir als Unternehmen aus kartellrechtlichen und geschäftspolitischen Gründen nicht kommentieren – wir danken für Ihr Verständnis.

Mit freundlichen Grüßen

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GREENPEACE

Greenpeace is an independent global campaigning organisation that acts to change attitudes and behaviour, to protect and conserve the environment and to promote peace.

For further information see Greenpeace studies „Black list of Pesticides“ (Die schwarze Liste der Pestizide) and „Limits of Pesticides Analyses“ (Grenzen der Pestizidanalytik), published in 2008 and available on www.greenpeace.de (www.greenpeace.de/themen/chemie/publikationen/)

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