AntiFraud Initiative

AFI CONFERENCE – 27 & 28 MAY 2025
A SYSTEMATIC APPROACH FOR OFFICIAL INVESTIGATION

Session 1

Some examples for exemplary active ingredients and their relevance

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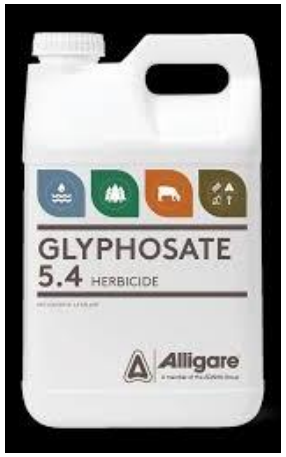
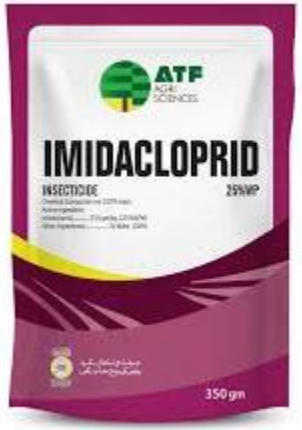
QUALI-PRO
Fosetyl-Al
80 WDG


GLYPHOSATE
5.4 HERBICIDE
Alligare


NOTMAN
PASTURE SEEDS
ALPHA
CYPERMETHRIN


ATF
IMIDACLOPRID
INSECTICIDE
350 gm


Boscalid
50%WDG
500g


Tebuconazole 3.6
SELECT
CAUTION


Folpet
80%WDG
500g


Pirimiphos-methyl
Insecticide
90%TC


25% SC
Azoxystrobin


LAISOL


Lambda-
cyhalothrin
10% EC
1000ml


ACETAMIPRID 200SP
50g Net
DANGER
POISON
INSECTICIDE FOR
AGRICULTURAL USE


Prodax
3 kg


Pendimethalin
95%TC
Herbicide


PBL
Difenoconazole
25% EC


Cyprodinil
50%WDG
1kg


FD21376
10 mg
Not for food or drug use, for laboratory


Pyriproxyfen
1000ml


Rudloxanil


SPIROTETRAMAT
22.4% SC
Insecticide

Europe’s most wanted pesticides in organic production…

1. Fosetyl-Al (sum of …)
2. Glyphosate
3. Cypermethrin
4. Imidacloprid
5. Boscalid
6. Tebuconazole
7. Folpet (sum of …)
8. Pirimifos-methyl
9. Azoxystrobin
10. Fluopyram
11. Lambda-cyhalothrin
12. Acetamiprid
13. Chlormequat
14. Pendimethalin
15. Spirotetramat
16. Cyprodinyl
17. Chloridazon
18. Pyriproxyfen
19. Fludioxonil
20. Difenoconazole

1. What the lab reports is not always what the lab detects:

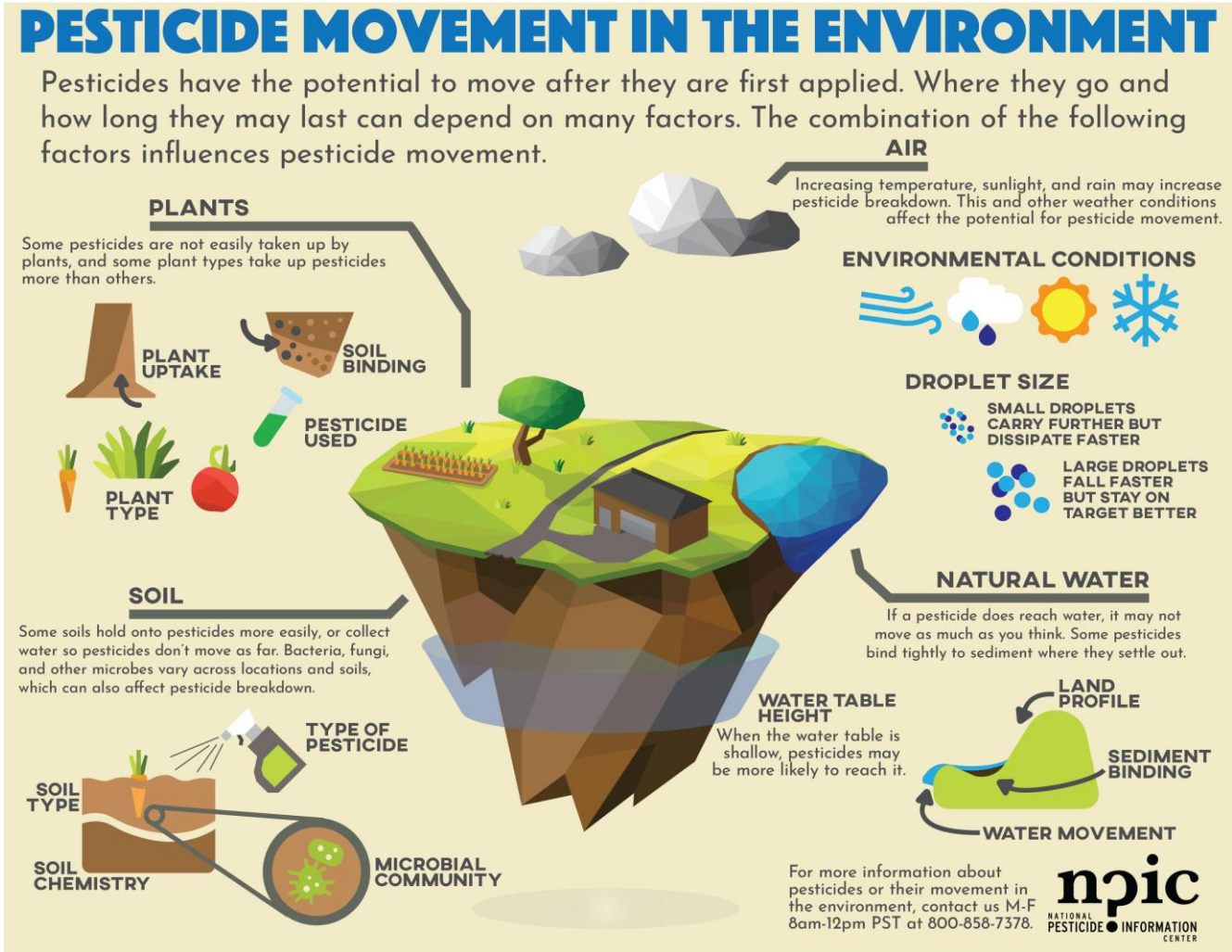
In total there are more than 130 active substances by the lab to be reported as sum of … among which

1. Cypermethrin (**sum of** isomers)
2. ~~Fosetyl-Al (sum of fosetyl~~, phosphonic acid ~~and their salts~~) (possibley resulting from **sum of** fosetyl, sodium and/or potassium phosphonate)
3. Folpet (**sum of** folpet and phthalimide)
4. Lamba cyhalothrin (includes gamma cyhalothrin) (**sum of** isomers)
5. Chlormequat **(sum of** chlormequat and its salts)
6. Spirotetramat and spirotetramat-enol (**sum of**)
7. Chloridazon (**sum of** chloridazon and chloridazon-desphenyl)

8. But for Glyphosate, the concentration of the main metabolite **AMPA** is no longer included in the residue definition…

2. What the lab reports may be used but not only for agricultural plant protection purposes

1. Glyphosate
   railway clearance, forestry, domestic gardens
2. Cypermethrin
   biocide, wood preservative
3. Imidacloprid
   biocide
4. Tebuconazole
   biocide, wood preservative
5. Folpet (sum of ... phthalimide)
   biocide, anti-fouling agent and preservative
6. Pyriproxifen
   waste dumps, residential and public places



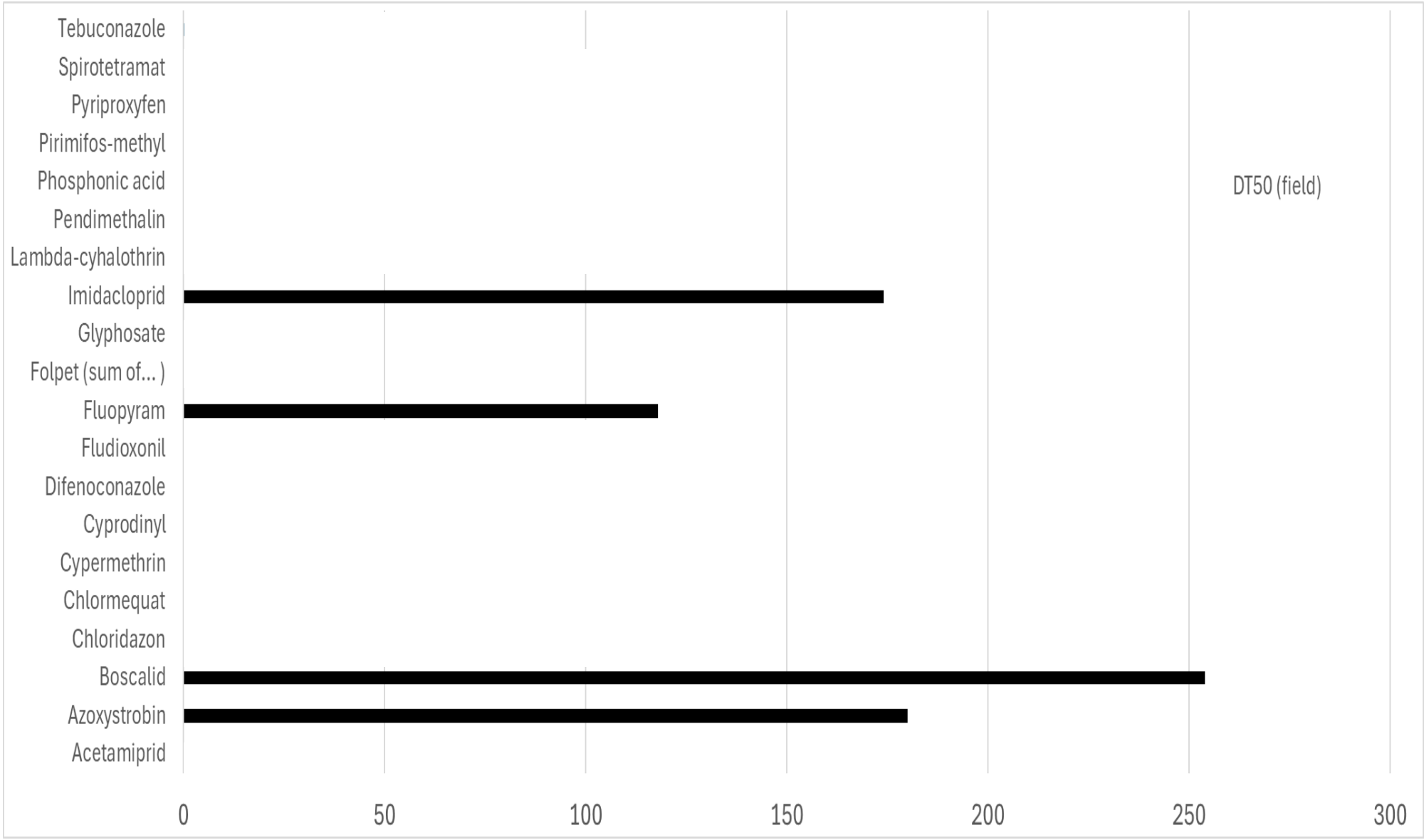
3. Trojan horses and other “invadors”

that cannot be avoided by precautionary measures by individual operators

1. Phosphonic acid in fertilisers
   0,5% tolerance level in labelling
2. Phosphonic acid in non organic “non treated” PRM
   Cuttings from non organic non-treated PRM
   Phosphonic acid as agent enhancing root development
3. Heritage chemicals in soil
   Persistent PPP (soil, woody plant parts) – see further
4. Pendimethalin
   Indirect/long distance drift

4. Persistence (high)

DT50 (field) expressed in days is in indicator for how much time is needed to reduce the concentration of an active substance by 50% in field conditions
-persistent means that it takes more than 100 days for an active substance to reduce 50% in concentration
=> Conversion period !



5. Substances which require adapted sampling techniques (timing because very low DT50)

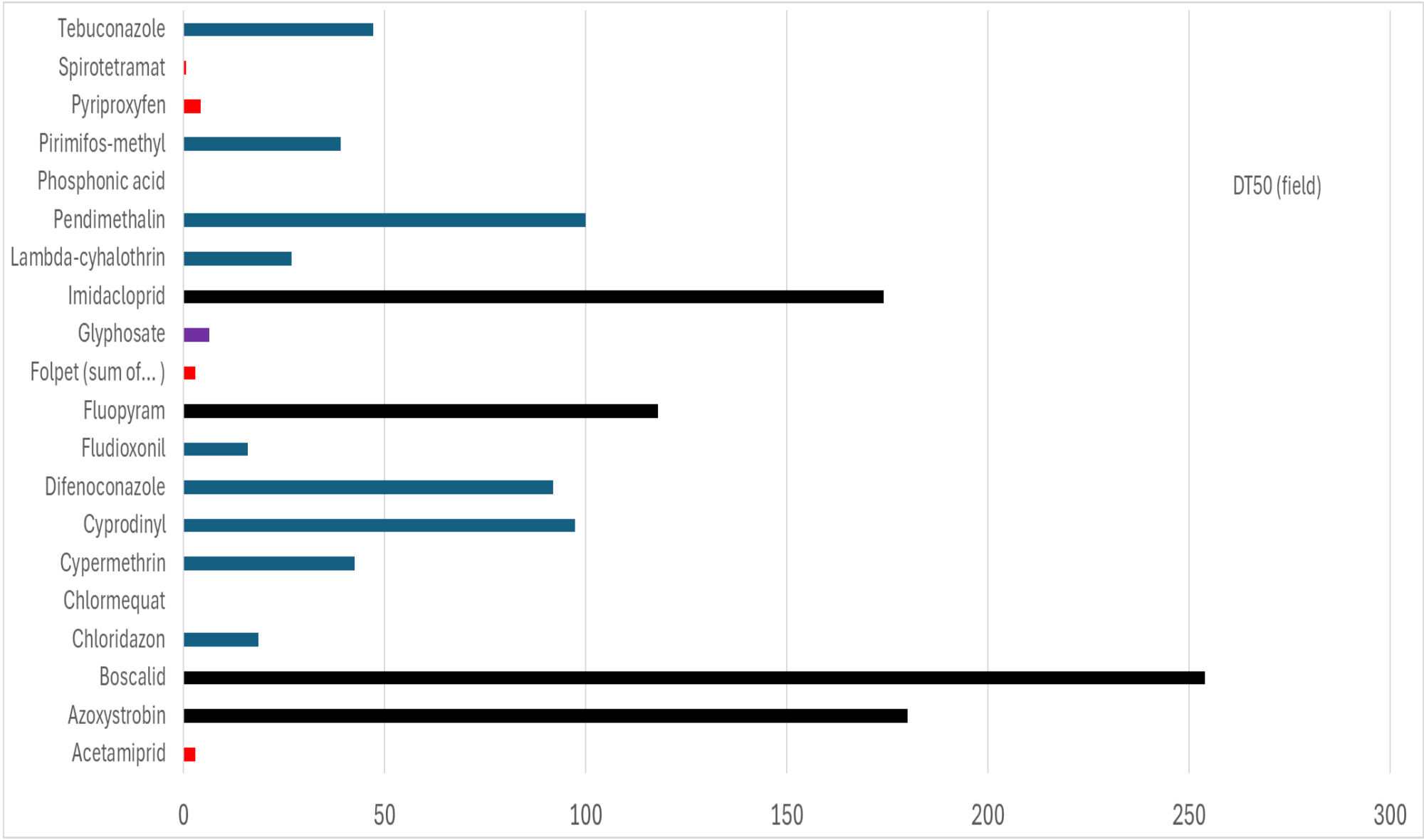
1. Spirotetramat: 0,7 days
2. Pyriproxifen: 4,2 days
3. Folpet (sum of …): 3 days
4. Acetamiprid: 3 days

5. Sampling and Persistence (low)

DT50 (field) expressed in days is in indicator for how much time is needed to reduce the concentration of an active substance by 50% in field conditions

-persistent means that it takes more than 100 days for an active substance to reduce 50% in concentration
=> Conversion period !

-low persistence: means the active substance disappears quickly
=> sampling – use relevance (timing)!



6. Observations between different Member States (1 example)

= concentration of active substances in a PPP

= combination of active substances in a PPP

≠ authorised use on crops in conventional farming

BE **BELLIS**	**NL** **BELLIS**
252 g/kg boscalid 128,5 g/kg pyraclostrobin	
Apples, pears, **hop**	Pome fruit
	Against *Venturia inequalis and pirina* (scab)
	Against *Podosphaera leucotricha* (mildew)
Gloesporium ssp and Penicillium ssp (Fruit rot)	
Buffer zone (10 m to surface water)	
1 kg/ha.year	0,8 kg/ha.year
4 applications/year Waiting time: 7 days, withdrawal period 7 days	

7. Banned but not forgotten…

1. Chloridazon
   not included in the most recent consolildated version
2. Spirotetramat
   since 30/04/2024
3. Cyprodinil
   since 15/03/2025
4. Imidacloprid
   not included in the most recent consolidated version

Usually, after being banned from the Reg (540/2011), retail sale is allowed until the end of the year, use is prohibited until the end of next year…

Exceptions are possible (so called “120 days” rule)

8. Active substances in the news / court cases

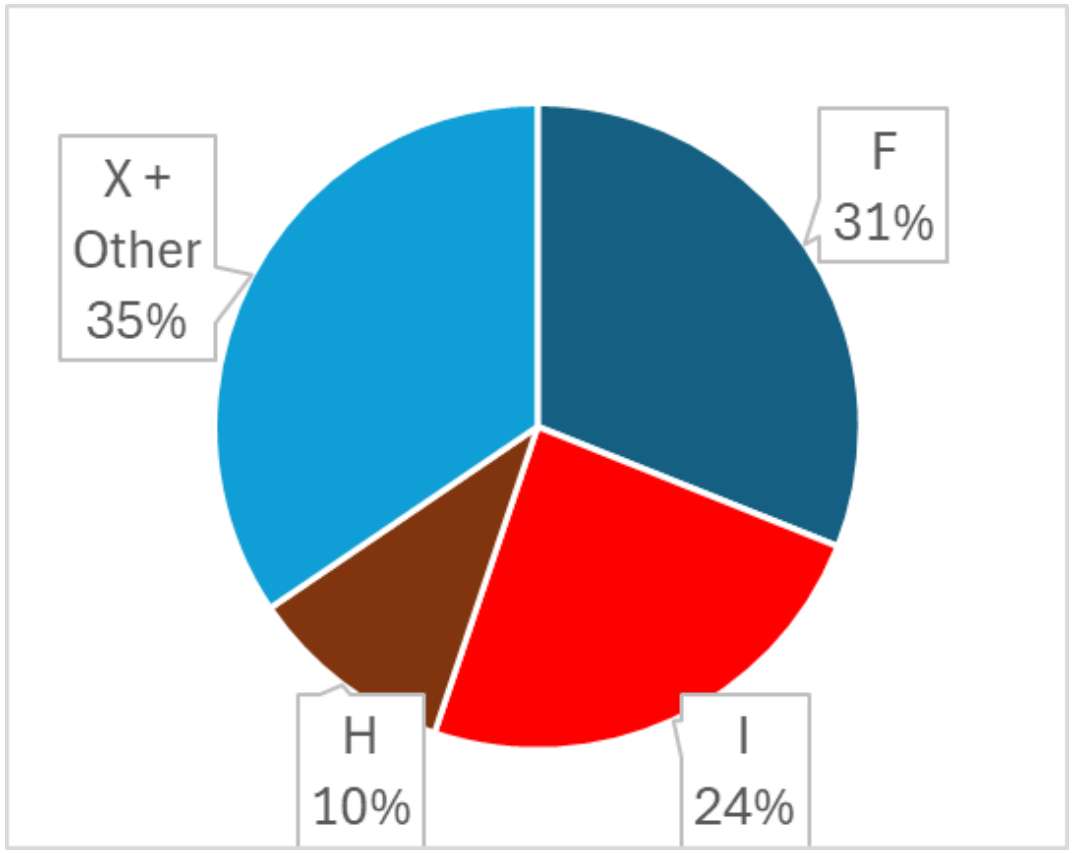
1. Spray drift (glyphosate) leads to decertification of organic broccoli
    1. Horizontal legislation imposing on the user of PPP, the duty of care
    2. Not complying with the duty of care depends on particularities
        1. Spraying in the evening (less wind but in the “wrong” direction),
        2. Adding more water and lowering the spraying beam (to 0,5 m above the surface) was not enough to avoid the damage
        3. Complying means not spraying that day and/or spraying another (less damaging) substance
    3. Identification of the scale of the damage
        1. Detection of Glyphosate on one field
        2. But similar failing growing symptoms in all three fields (no counter investigation)
    4. **Judge decides that all damage to the broccoli is due to the spray drift of glyphosate by the subcontractor of the conventional farmer**

10. Active substances in the news / court cases

1. **Cypermethrin**
   Against renewal
2. **Imidacloprid**
   Against reauthorisation of neonicotiniods
3. **Boscalid**
   “Clean” products (Panera, USA) containing up to 11 active substances
4. **Tebuconazole**
   Against reauthorisation
5. **Pirimyfos-methyl**
   Increase of MRL to manage cross contamination during storage
6. **Azoxystrobin**
   Suspension of the licence of pilot and owner of Agra Fly because of spray drift
7. **Fluopyram**
   Pollution of surface/drinking water sources
8. **Acetamiprid**
   “100% natural” food products but containing acetamiprid and other active substances
9. **Chlormequat**
   Book after detection in humans
10. **Pendimethalin**
    Scientific study on long distance drift
11. **Chloridazon**
    Scientific article on role of adjuvants degrading the active substance

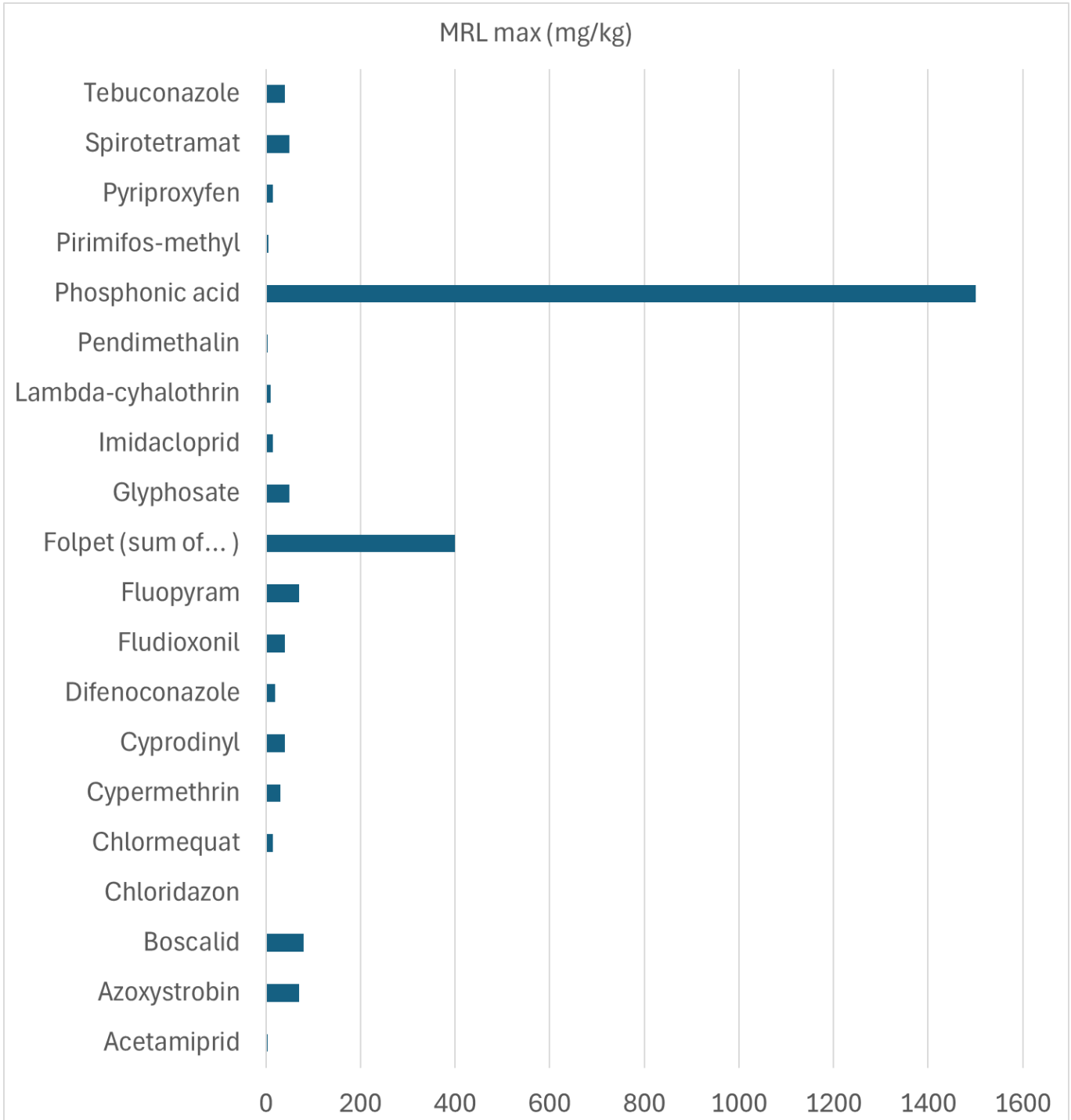
    …

Functional groups

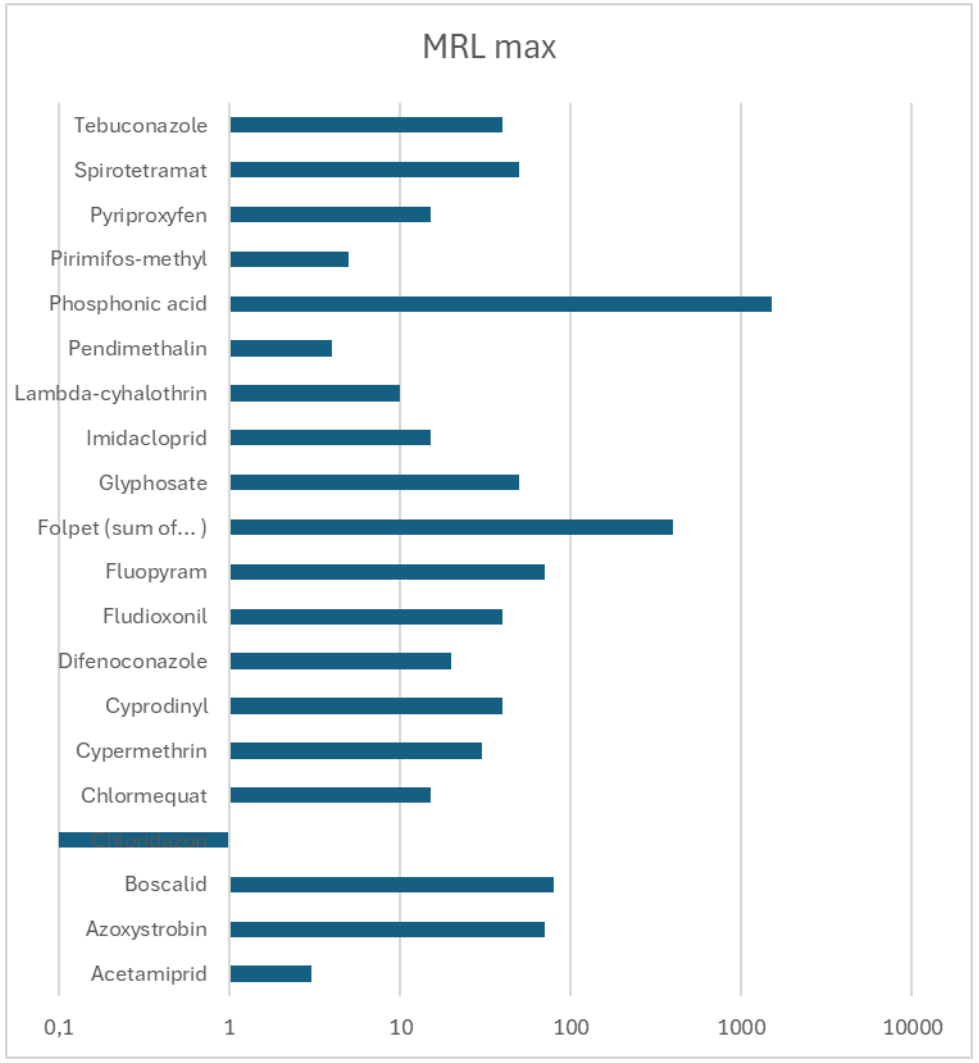


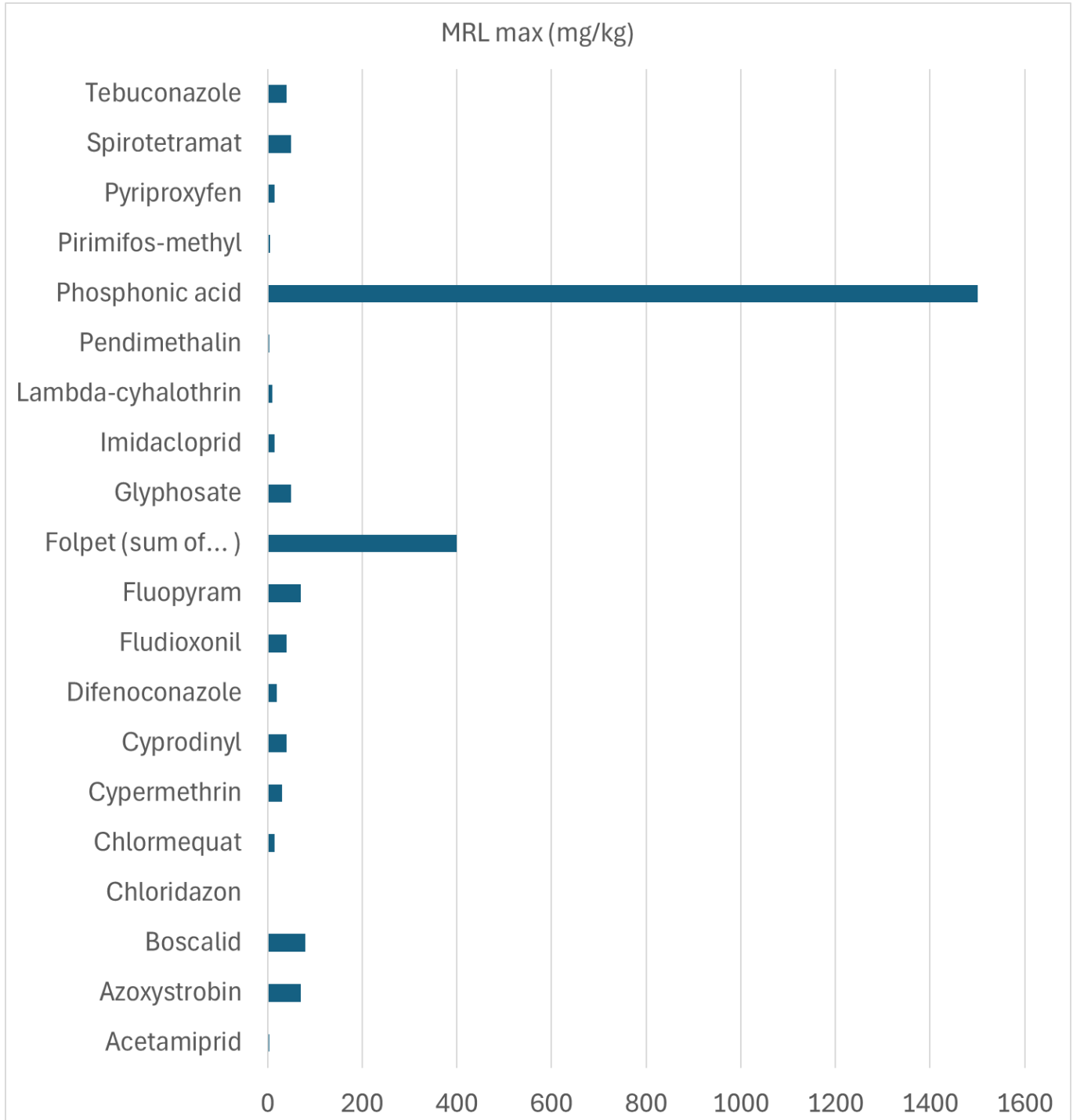
X			X + Other
F	I	H	
9	7	3	10
Boscalid	Lambda-cyhalo-thrin	Glypho-sate	F + biocide + anti fouling agent + preservative (Folpet)
Azoxystro-bin	Acetami-prid	Pendime-thalin	I + Veterinary substance + biocide + preservative (Cypermethrin)
Cyprodinil	Spirotetra mat	Chlori-dazon	I + Veterinary substance (Imidacloprid)
Difeno-conazole			F + plant growth regulator + biocide + preservative (Tebuconazole)
			I + Acaricide (pirimifos-methyl)
			Plant growth retardant (chlormequat)
			I + Veterinary substance + insect growth regulator (pyriproxifen)
			F + biocide + preservative (Fludioxonil)
			F + Nematicide (Fluopyram)
			F + Bactericide (Phosphonic acid)

MRLs, default MRLs and the MRL profile

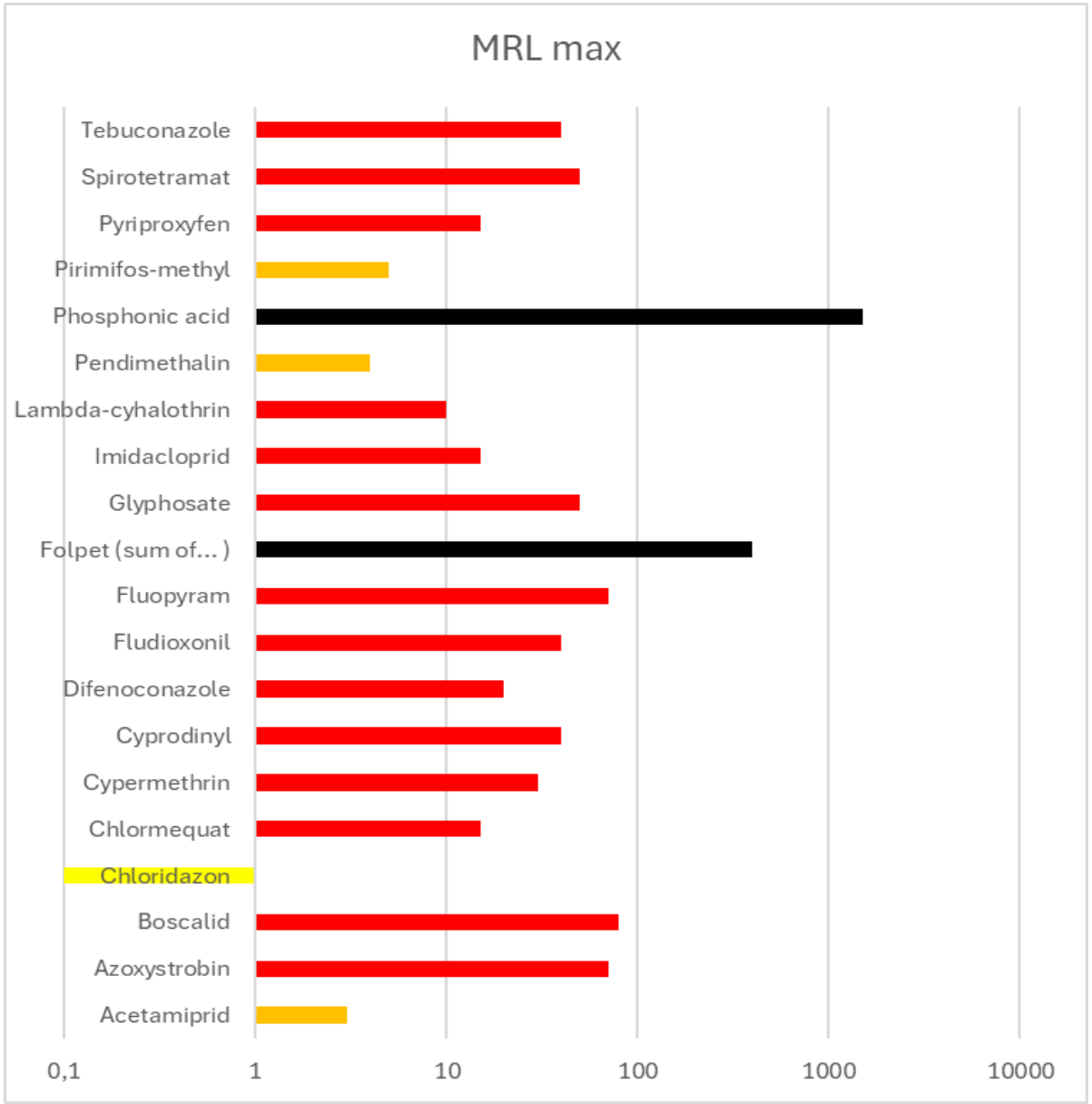


MRLs, default MRLs and the MRL profile





MRLs, default MRLs and the MRL profile



There are big differences in the applicable MRLs

1) The lowest MRL is 0,01 for chloridazon
2) The highest MRL is for phosphonic acid

A high MRL value means that good agricultural practices in conventional farming may result up to this high amount in the harvested product

Three groups may be distinguished:

- MRL_{max} > 100 mg/kg
  - ➢ Detection of **phosphonic acid** and **folpet** must be put into context of its specific MRL especially because they are reported as a sum of molecules which may have other origins than the active substance
- 1 < MRL_{max} < 100
- MRL_{max} < 1
  - ➢ Detection of chloridazon is any case a problem because it is no longer authorised for use in conventional production in the EU

MRLs, **default MRLs** and the MRL profile

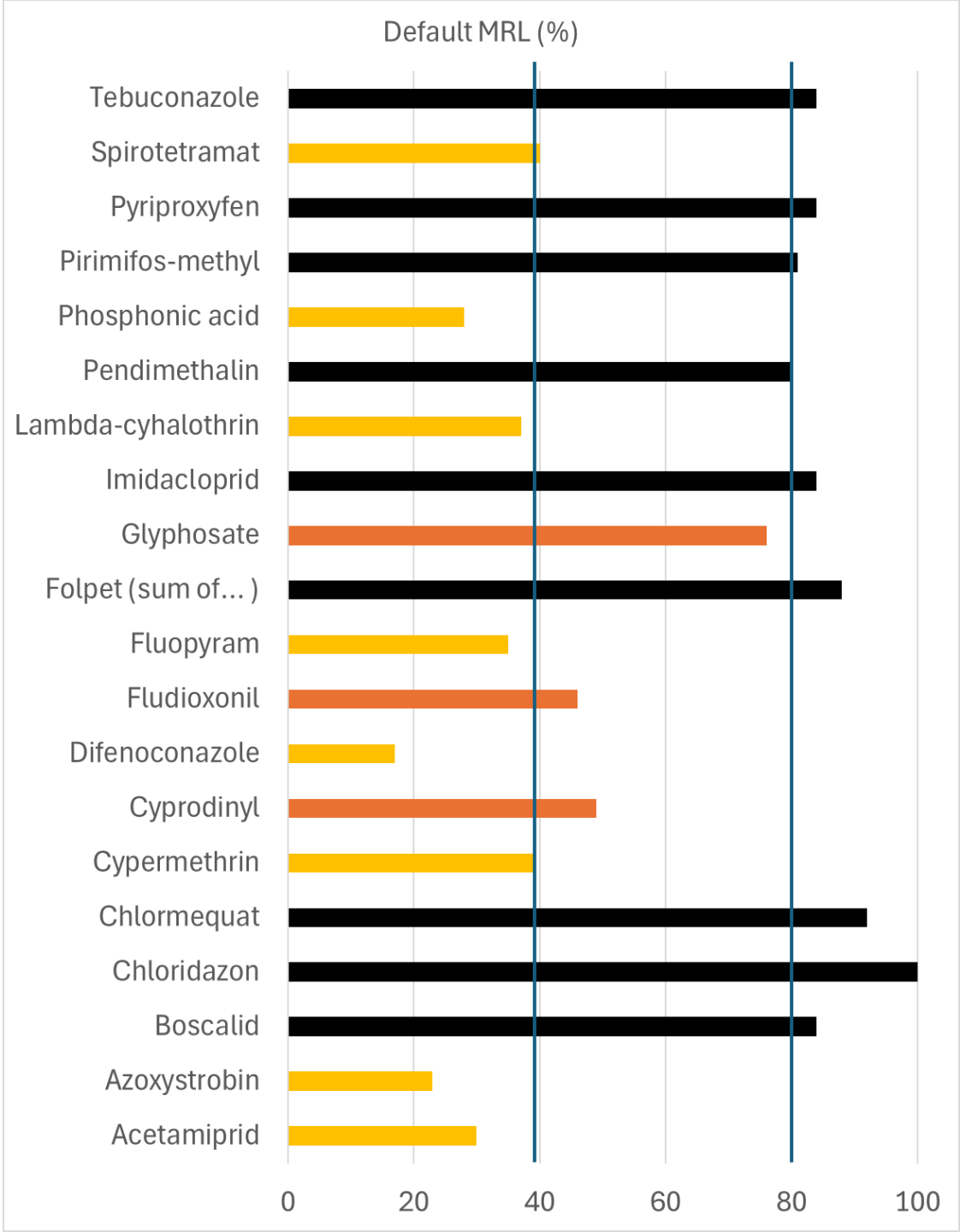
Default MRL applies when

1) There has been no request for authorisation of the active substance in a particular crop
2) The active substance has been banned and is no longer authorised for use in conventional production

The higher the % of default MRLs among all MRLs, the less it may be used in conventional organic production

Three groups may be distinguished:

- % MRL* > 80% of all MRLs (max 60 crops)
  - ➢ Detection of **these 9 substances** must be taken very seriously because their authorised use in conventional is limited
- 40 < % MRL* < 80
- % MRL* < 40
  - ➢ Detection of **these 7 substances** requires info about neighbouring crops because of the more common authorised use in conventional production

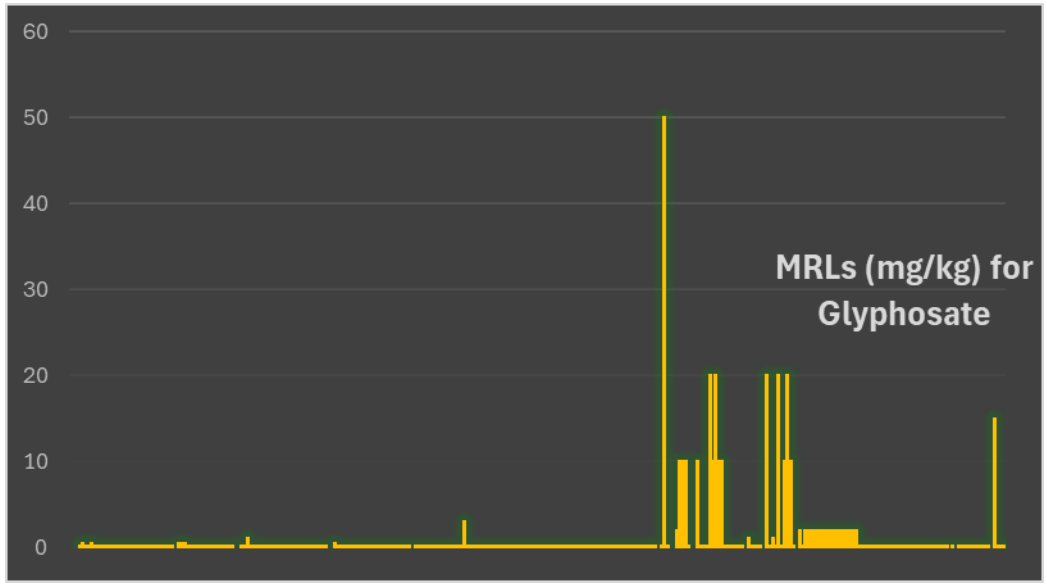


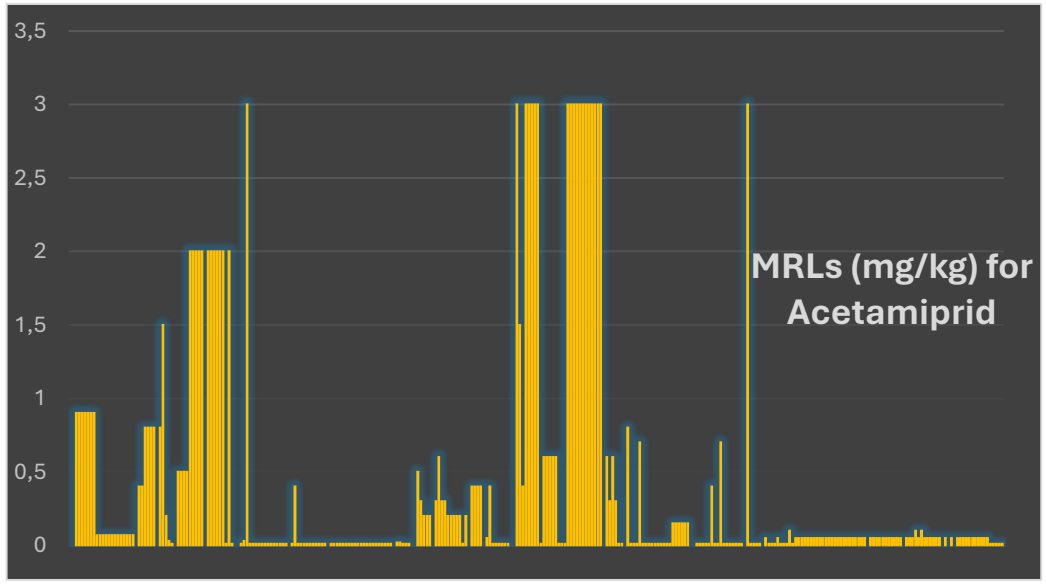
MRLs, default MRLs and the **MRL profile**

The MRL profile is interesting because it allows to identify in which crops the active substance may be used in conventional production. If it's not allowed to be used in conventional production, the MRL is labelled as Default MRL. This applies when

1) There has been no request for authorisation of the active substance in a particular crop
2) The active substance has been banned and is no longer authorised for use in conventional production

On the horizontal axe, all plant based products from the MRL database are listed according to the CN codes





Europe's most wanted pesticides in organic production…

- **Conclusion**
  - Active substances are used for certain purposes on certain crops and are subject to certain restrictions defined at EU and MS level
  - Active substances may penetrate the plant tissue or not
  - Detection methods vary
  - MRL values vary a lot and are indicators of GAP
    - Default MRL* values are indicators of prohibited use in conventional production
  - Particularities from conventional for organic:
    - **A lot still depends on the sampling**
    - **MRL exceedances do not systematically result in detection of source and cause**
    - **Lots of default MRLs are missing**
    - **Application of Processing factors is not consistent eg. Grapes/raisins PF: 1,0 (CY); 1,2 (NW) and 4,5 (SE)**
    - **Pesticide residues are omnipresent**
    - **Each detection is a unique picture that needs specific approach by competent people to unveil the story**
  - Interesting cases appear in literature, press and courts

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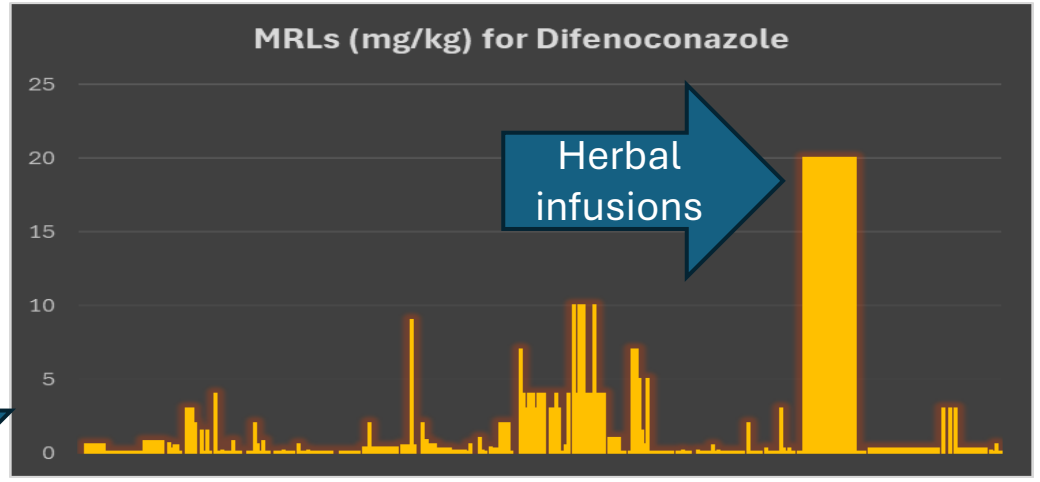
F	I	H	B	N	Other
X					

Brown rust on wheat (source)



# MRL exceedances	GAP	Misuse	Unknown	Other
	2		1	2 non-EU

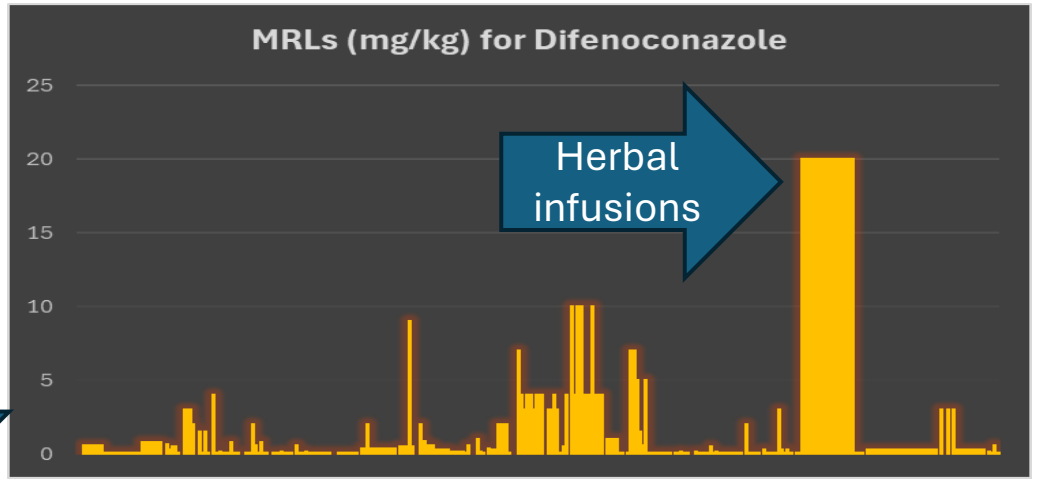
Europe's most wanted pesticides in organic production…

Thank you for your attention

EFSA Report 2023

F	I	H	B	N	Other
X					

Brown rust on wheat (source)



# MRL exceedances	GAP	Misuse	Unknown	Other
	2		1	2 non-EU