Economic impact of changes to pesticide legislation

Sarah Wynn

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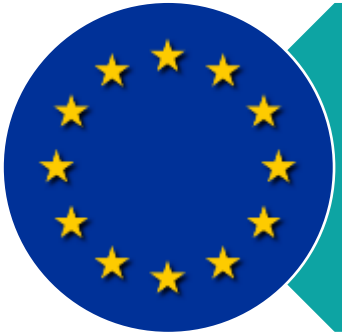

Legislation affecting pesticides

Wider economic impacts of legislation

Changes in availability – the effect on profitability & viability

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Sustainable Use Directive

The Sustainable Use Directive 2009/128/EC

Overall objective is to establish:

"*a framework to achieve a **sustainable use of pesticides** by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of **Integrated Pest Management** and of **alternative approaches** or techniques such as non-chemical alternatives to pesticides*".

Regulations under the Sustainable Use Directive

Regulation (EC) No 1185/2009 concerning statistics on pesticides

Directive 2009/127/EC with regard to machinery for pesticide application-

Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market-

EU Impacts of SUD

National Action Plan

Integrated pest management – does it cost more?

Inspection of equipment

Cost of certification

Re-approval of active substances

Training

Cost of certification

NSTS
National Sprayer Testing Scheme

City & Guilds
NPTC

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Pesticide approvals (?)

- Legislation aims to drive improve standards
  - Environmental & human health
  - Tougher acceptance criteria at renewal & registration
  - Important to understand wider implications of change
    - Impact on crop production
    - Impact on target weed/ pest/ disease populations
    - Impact on cost of control

SAY NO TO DRIFT
CHLORPYRIFOS

Impact assessment

- Developed a methodology to help…
  - The industry identify R&D priorities
  - Identify critical areas for government intervention - funding
  - Assess the impact of mitigation
    - Can product be applied differently to reduce particular risk –e.g. low drift nozzles – Say no to drift
  - Provide evidence of value of active substance
    - Support industry in maintaining crucial active substances
    - Support to registration or reregistration of active substances

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Identify research priorities

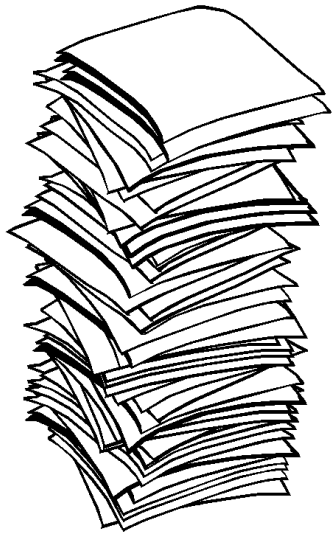
- Cereals and oilseeds: published
- Potatoes: published
- Grass and forage: published
- Peas and beans: completed
- Fruit and vegetables: published
- Non-edibles (plants and flowers): published
- Overall assessment of gaps and priorities: published

Identify research priorities

	Main source of loss	Crops affected	% reduction in margin	% reduction in production
1	Downy mildew	Onions	209%	46%
2	Weed control	Alliums	51%-86%	12%-31%
3	Volunteer potatoes	Vining peas	49%	35%
4	Downy mildew	Lettuce (outdoor)	46%	30%
5	BLW	Carrots	33%	17%
6	Black-grass	Cereals	28%	9%
7	Raspberry Beetle	Raspberry	25%	20%

Research priorities across all sectors based on total impact on gross margin - 2010

Approvals legislation - costs



- More detailed dossier's for active substances
  - Cost more to provide evidence for approval / reregistration
- Increased cost of pesticide products to farmer (?)
  - To cover registration costs
- Reduced availability / range of actives

Support industry

Demonstrating value of active

1. Change cost of production
   - Can target pest still be controlled?
   - How much does it cost?
2. Yield impacts
   - Can the pest still be controlled as well as it was?
3. Impacts on resistance management
   - Is it a key active in resistance management programme?
   - Are there alternative modes of action?
4. Use of alternative products /control options
   - What are the risks?

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1. Change cost of production

- Production can be **more expensive**
  - Switch to alternative, sometimes more costly products
  - Use increased cultural control
  - Barriers – e.g. insect mesh
- Withdrawal can be associated with **yield loss**
- Can make growing a particular crop on some land **unprofitable**

2. Yield impacts

- Availability of alternatives
  - Are they as effective?
  - Are they as affordable?

- Reduced level of weed, pest or disease control
  - depends on season
  - high vs low disease pressure

- Can businesses remain viable?

2. Yield impacts- Examples

Horticulture

- *Allium* – Loss of mancozeb
  - 19% reduction in yield
  - £22M cost implication
- *Soft fruit*- Loss of iprodione (botrytis)
  - 6% reduction in production
  - £22M cost implication

Arable

- *Wheat*- loss of azole fungicides
  - 4% reduction in yield
  - £174M cost implication
- *Oilseeds*- loss metconazole & tebuconazole
  - 1% reduction in yield
  - £4M cost implication

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3. Impacts on resistance management

Loss of active can:

- **Reduce the range** of **modes of action**
- **Shorten** the time to resistance development
- **Increase the cost** of control programmes

- Increase focus on **other aspects of disease management**
  - varietal control
  - good hygiene

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4. Use of alternative controls

- Can be **more expensive** and/or **less effective** than withdrawn product
  - Use of higher rates of more expansive active substances
  - Are the alternative active substances as effective?
  - Focus on **non-cultural methods of control-** varietal resistance, crop rotation, delay drilling, improving timeliness of pesticide applications

Support registration / reregistration

- Understanding benefits or potential benefits
- Provide additional support to dossier
- Especially valuable where;
  - active is only one available for particular purpose or
  - strong component of resistance management strategy
- http://www.upleurope.com/press/Socio-economic_value_of_mancozeb_UK_-FINAL_10-08-15.pdf

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Endocrine disruptors

- Significant uncertainty over how they are defined
- Therefore unclear how many actives are affected
- Impact report collated for AHDB end last year
  - Actives categorised in 3 ways

Category	Level of risk
Likely to be lost	High - clear evidence for ED activity
Might be lost	Medium - some evidence for ED activity depends on definition
Unknown	? - Evidence is unclear – may be an ED

Implications of loss- ED example

Active	Risk	Crop	Impact
Epoxiconazole	High	Cereals	Reduced **rust control**
Prothioconazole	??	Cereals & oilseeds	Reduced **disease control** – increased reliance on fewer modes of action
Metconazole & tebuconazole	High	Oilseeds	Loss **PGR control**
Carbetamide & propoyzamide	Medium	Oilseeds	Loss **black-grass control**
Cyproconazole & tebuconazole	High	Pulses	Reduced **disease control** & increased **resistance risk**
Linuron	High	Pulses	Reduction in **weed control**
Chlorothalonil	??	Cereals & pulses	**Loss of multisite active** – increased resistance risk

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ED Likely to be lost - horticulture

Largest losses

Thiacloprid – Soft fruit (£58M), Field veg (£57M), Tree fruit (£27M)

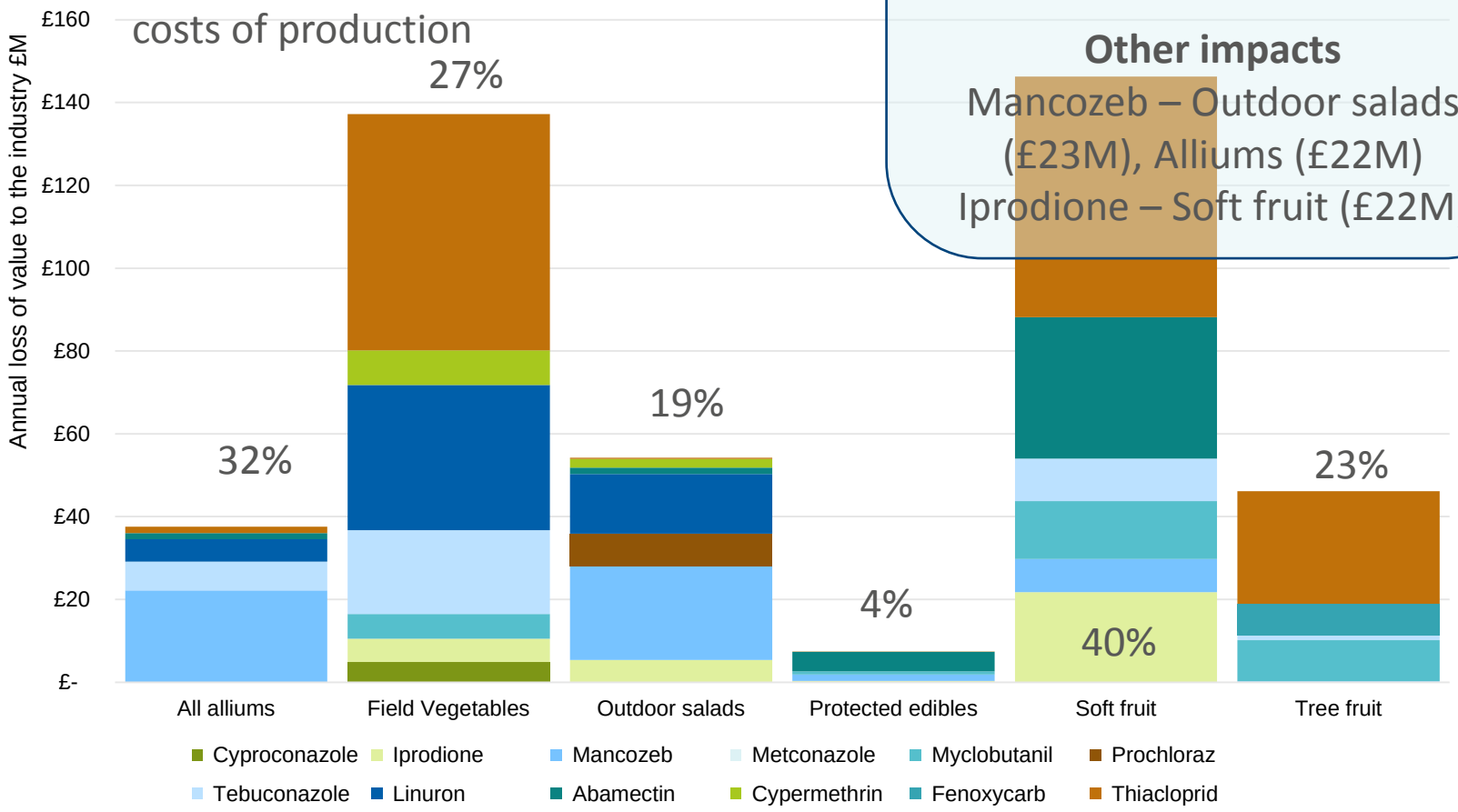
Linuron – Field veg (£35M)

Other impacts

Mancozeb – Outdoor salads (£23M), Alliums (£22M)

Iprodione – Soft fruit (£22M)

Cost of yield loss only – no additional costs of production



% shows the percentage of the total value of the sector that is lost

Note not all assessed actives are shown – those with small impacts have been removed

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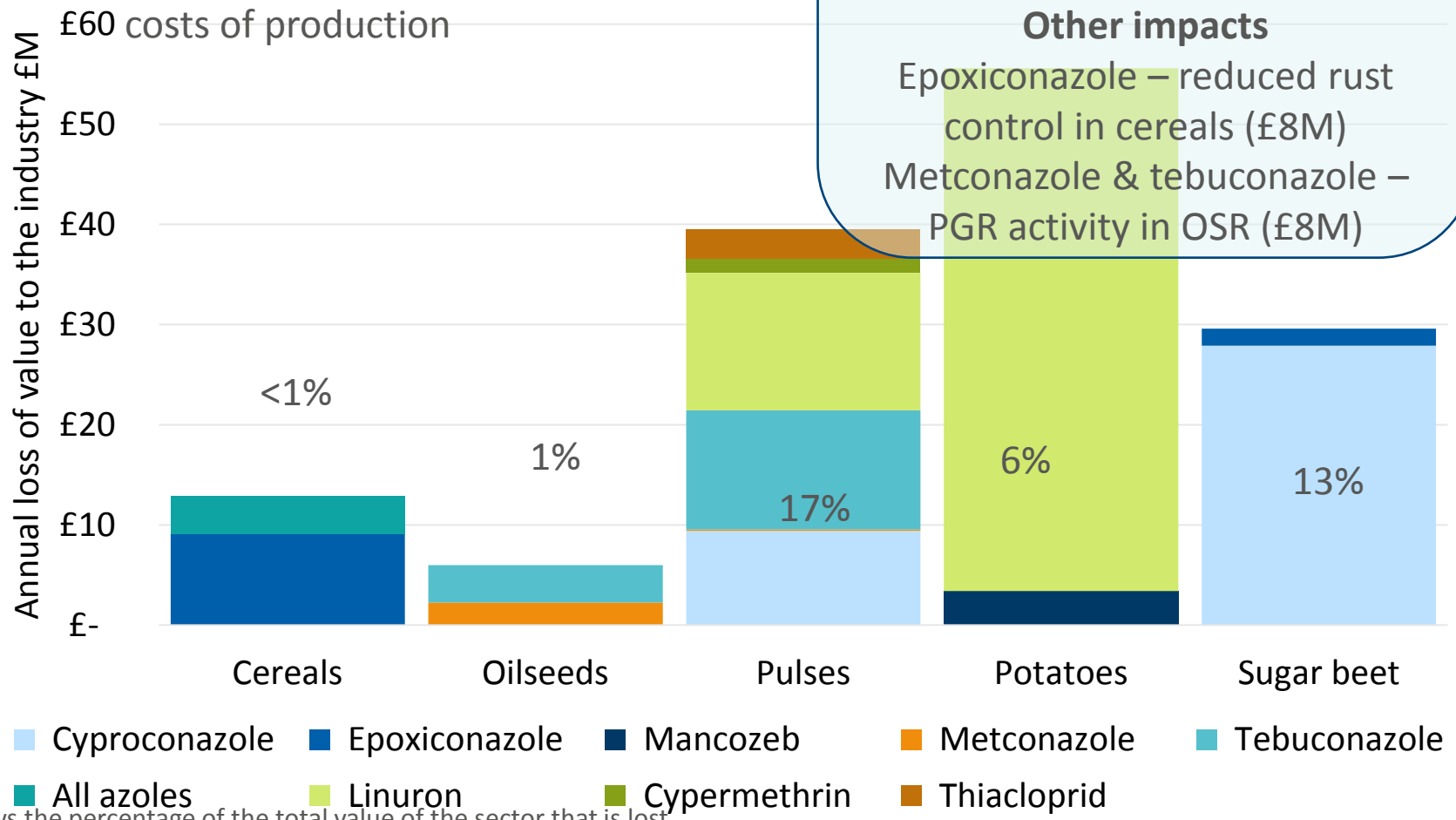
ED Likely to be lost - arable / other

Cost of yield loss only – no additional costs of production



Largest losses

Linuron – Potatoes (£52M), Pulses (£14M)

Cyproconazole – Pulses (£9M) & Beet (£28M)

Other impacts

Epoxiconazole – reduced rust control in cereals (£8M)

Metconazole & tebuconazole – PGR activity in OSR (£8M)

% shows the percentage of the total value of the sector that is lost

Note not all assessed actives are shown – those with small impacts have been removed

Cost of pesticide legislation

- Definition of EDs least strict
  - Cost the arable & hortic industry £905M
  - 10% reduction in production
  - Plus additional cost of alternative controls

- At its most strict
  - Cost the arable & hortic industry £3,003M
  - 33% reduction in production
  - Business restructure, other cost changes for alternatives

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Other influences are taking effect too…

Europe

TTIP controversy: EU drops pesticide laws because US says it should

European Commission denies that the TTIP had any bearing on the decision

Zachary Davies Boren | @zdboren | Friday 22 May 2015 15:10 BST | 55 comments

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EU dropped pesticide laws due to US pressure over TTIP, documents reveal

US trade officials pushed EU to shelve action on endocrine-disrupting chemicals linked to cancer and male infertility to facilitate TTIP free trade deal

Chief EU negotiator Ignacio Garcia-Bercero (R) and chief US negotiator Dan Mullaney hold a press conference in Washington, DC after a new round of talks on creating a transatlantic free trade zone, 19 May. Photograph: Nicholas Kamm/AFP/Getty Images

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Opportunities

- Pressure on pesticide actives
  - Need to identify alternative control strategies
  - Need to look at resistance management
  - Need to improve best practice

  - Affects wide range of crops
    - Arable, horticulture (edible & ornamental)

- Uncertain…

Summary

- Pesticide legislation driving improved standards for environmental and human health protection.
- This is resulting in tougher standards for existing pesticides at renewal and for new registrations.
- Need to consider the impacts of any changes and potential mitigation actions.
  - Cost of production
  - Yield
  - Business viability
  - Jobs

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Thank you

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