Health and Safety
Executive

HSE

Setting the Scene – a Regulator's Perspective

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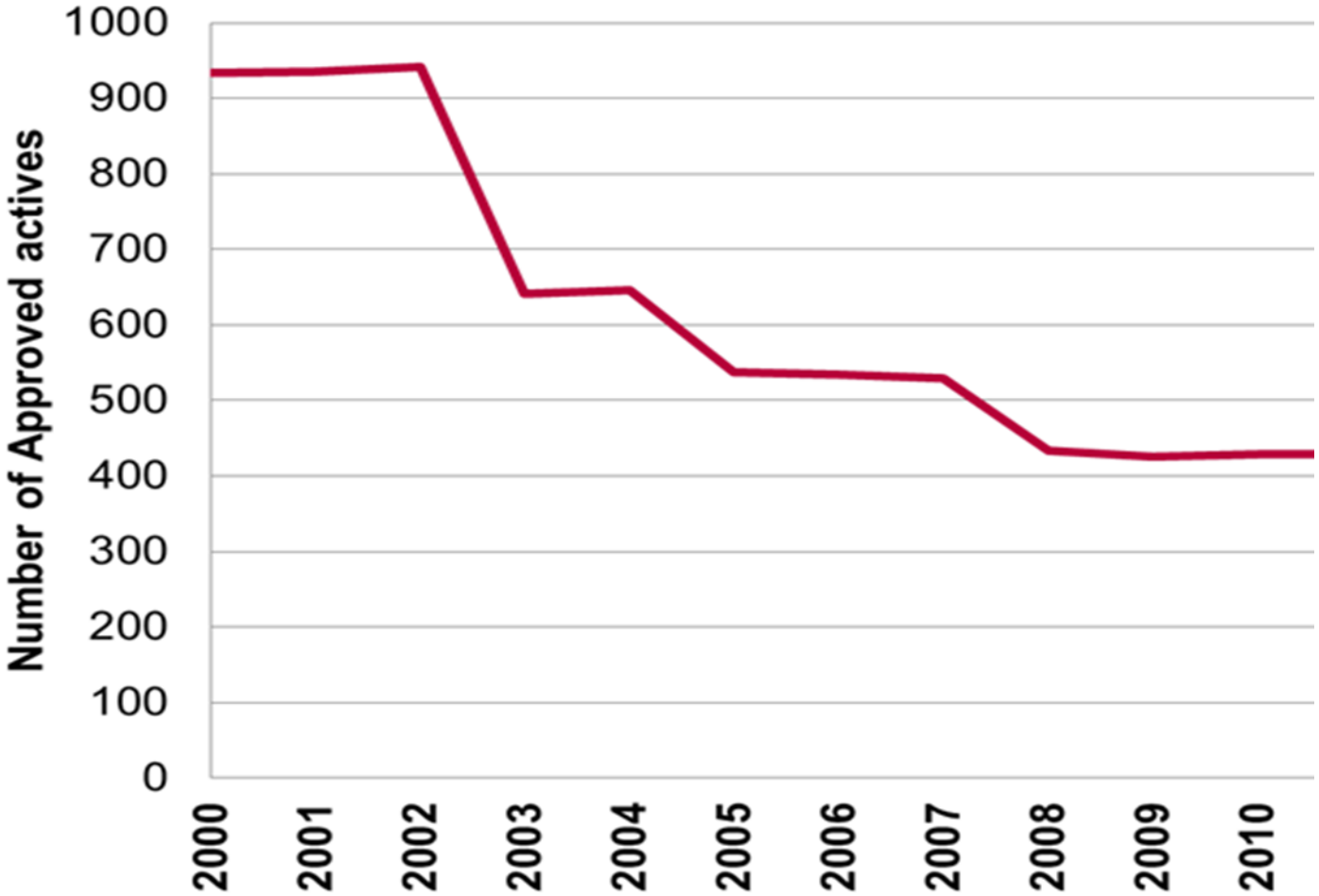
Why do we need alternatives?



UK active availability

- January 2009 283 actives
- October 2017 296 actives
  - 59 new actives to the UK
  - 49 not supported/not approved
- 493 Actives approved in EU
- 823 non-approved actives on EU list
- 27 new actives ‘pending’ on EU list

Update on 2011 Weeds Review

- CRD analysis of active substances most vulnerable to hazard criteria
  - Amitrole
  - Flumioxazin
  - Glufosinate
  - Ioxynil
  - Linuron
  - Pendimethalin
  - Tralkoxydim

Recent herbicide losses

- Hazard criteria - toxic for reproduction category and/or carcinogenic category but often other areas highlighted in risk assessment.
  - **Amitrole**
  - **Flumioxazin**
  - Isoproturon
  - **Ioxynil**
  - **Linuron**
  - Flupyrsulfuron-methyl
- Pendimethalin renewed approval

In some cases..

- Derogation if there is a serious danger to plant health and no chemical/non-chemical alternatives are available
  - Approval only valid for 5 years
  - Must be approved by other MS and COM
  - But not appropriate for all
  - Flupyrsulfuron-methyl & flumioxazin derogations

Changes to authorisations

- Reductions in dose
- Limits on rotational use
- Restrictions on timing
- Increase in use of risk mitigation e.g. buffer zones

Main crops affected…

- Carrots and parsnips
- Minor cereal crops
- Onions
- Potatoes (but metobromuron authorised)
- Brassica crops, including oilseed rape

Risks to renewal of approval

Specific risk	Nature of risk	Risk Factor
Category 1 carcinogen or reproductive toxicant	Exclusion criteria	1
Very persistent and very bio accumulative (vPvB)	Exclusion criteria	1
Persistent, bio accumulative and toxic (PBT)	Exclusion criteria	1
Priority, Water Framework Directive	Priority substance for which environmental quality standard must not be exceeded	1
Listed, Water Framework Directive	Environmental quality standard must not be exceeded	0.8
Provisional endocrine disruptor (ED)	Exclusion criteria with some scope for interpretation	0.8
Neonicotinoid	Associated with serious risk to bees. Restrictions on use or adverse retailer response could lead to commercial withdrawal	0.8
Category 2 carcinogen, mutagen or reproductive toxicant	Further classification could meet exclusion criteria	0.8
Candidate for substitution	Partly meets exclusion criteria. Adverse retailer response could lead to commercial withdrawal	0.4
Persistent, Bio accumulative or Toxic	Contribution to candidate for substitution (2 of 3) and PBT exclusion criteria (3 of 3)	0.4
Low use (estimated less than 1 million Ha/yr treated in EU)	Limited market increases chance of poor support by applicant for renewal of approval	0.4
None of the above	No significant risks identified, but possible unidentified technical and commercial risk factors	0.2

Risk factor database

Category	Resistance class	RAC MoA	UK Authorised	Approval status	Date of approval/renewal	Date of expiry/revokation	Highest RF	C or R Cat 1 (1.0)	vPvB (1.0)	All 3 PBT (1.0)	ED (0.8)	Neonic (0.8)	CFS (0.6)	C2 (0.6)	M2 (0.6)	R2 (0.6)	P (0.4)	B (0.4)	T (0.4)	Scale of use (0.2 or 0.4)
RE				Not Approved			0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN			YES	Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN, HB				Not Approved		2004	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN	I	3A	YES	Approved	2011	2024	0.4	0	0	0	0	0	0	0	0	0	0	0	0.4	0.2
HB			YES	Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
FU				Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
FU	F	3	YES	Approved	2009	2019	0.8	0	0	0	0.8	0	0.4	0	0	0.8	0.4	0	0.4	0.2
IN	I	18		Approved	2011	2024	0.4	0	0	0	0	0	0	0	0	0	0.4	0	0	0.2
AC	I	21A	YES	Approved	2009	2022	0.4	0	0	0	0	0	0.4	0	0	0	0.4	0	0.4	0.4
HB	H	K1		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
HB				Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
FU, PG	F	14	YES	Not Approved		2000	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0.4
IN	I	15		Approved	2009	2019	0.4	0	0	0	0	0	0	0	0	0	0	0	0.4	0.2
IN	I	3A	YES	Approved	2012	2024	0.4	0	0	0	0	0	0	0	0	0	0	0	0.4	0.2
HB			YES	Approved	2014	2024	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN	I	1B		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
HB	H	A	YES	Not Approved	2005	2015	0.8	0	0	0	0.8	0	0.4	0.8	0	0.8	0.4	0	0.4	0.2
HB				Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN	I	1B	YES	Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
HB				Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
HB			YES	Approved	2012	2024	0.8	0	0	0	0.8	0	0	0	0	0	0	0	0.4	0.2
HB	H	C1		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
AC, IN			YES	Approved	2015	2025	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN	I	1B		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
FU	F	3	YES	Approved	2010	2021	0.8	0	0	0	0.8	0	0	0	0	0	0.4	0	0	0.2
AT				Approved	2009	2019	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
AC, IN	I	12D		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
IN				Never Notified			0	0	0	0	0	0	0	0	0	0	0	0	0	0
IN	I	3A		Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
AC	I	3A	YES	Not Approved		2002	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
RO			YES	Not Approved		2004	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.2
FU	F	1	YES	Approved	2002	2017	0.4	0	0	0	0	0	0	0	0	0	0.4	0	0	0.4

Factors determining importance

- Amount of substance used annually
- Economic value of the crop
- Potential effect of pest on crop yield
- Potential effect of pest on crop quality
- Availability of alternative treatments

Scale of agronomic importance

1	The only effective option for control of important threat to plant health.
2	Best option with few alternatives.
3	Popular option but effective alternatives available.
4	Not first choice option or not authorised.

35 actives of high agronomic importance to the UK

Possible interventions	No. actives
Influence on vote for renewal	28
Full participation in EFSA peer review	23
Pre-submission communication with applicants	7
Early assessment of cut-off criteria	11
UK impact assessment	11
Research into non pesticide alternatives	11

Challenges

- Endocrine disruptors
- Classification – hazard assessment
- Water Framework Directive
- Candidates for Substitution
- New guidance
- Products/uses lost at renewal stage
- Resistance

New technologies.

- Low risk active substances

- Alternative approaches
  - Laser
  - Electricity
  - Thermal – flame, hot water, steam
  - Infrared radiation (IR), microwave radiation

- Application technology
  - Low drift nozzles
  - Autonomous ground based equipment
  - Unmanned aerial vehicles (UAVs)

Regulatory implications (I)

- Low risk active substances
  - Within scope but ongoing work on regulatory requirements
- Low drift nozzles
  - 75% drift reduction technology but scope for 90%
  - Ongoing review of buffer zones
- UAVs
  - Certification
  - Quantifying risk

Regulatory implications (II)

- Targeted application
  - Regulatory framework
  - Compliance
- Fully autonomous vehicles & alternative methods of application
  - Any product used within scope of regulation
  - Other health & safety legislation

Regulatory implications (III)

- And of course not so new technologies;
  - Rotation
  - Physical weed control – mechanical, brush weeders
  - Cover crops
  - Crop hygiene
  - Crop competition
  - Mulches

Future

- Further loss of actives
- Regulation 1107 under review
- Importance of IWM
- Stakeholder engagement vital
- EU Exit