Pesticide Reduction Programmes

UK Grower Experience

(*potato & root crops*)

Simon Bowen
Agronomist
Produce World Ltd
Key approaches (1)

• Grower understanding of genuine customer concern regarding food safety & traceability (not just radical action groups!)
• Working with key retail customers such as Waitrose & Co-op driving *actual* pesticide reduction as opposed to pesticide justification
• Working closely with grower (grower groups, programmed production, agronomic support) is essential
Key approaches (2)

1) Prohibited pesticide lists (with justification)
2) Controlled/monitored pesticide lists (with full risk assessment)
3) Agreed reduction targets (usage & dates)
4) Product substitution (using lower risk actives)
5) Working towards Environmental standards audits such as LEAF Marque to give a greater overall perspective
6) Research & development focus for pesticide alternatives:

- Non-chemical solutions (important cross-over from organic systems)
- Decision support systems
- Reduced rates of existing chemistry
- New chemistry (products with lower environmental impact)
Pesticide reduction - examples

- Camera-steered inter-row cultivation in carrots

- Reduced linuron rates in conjunction with other lower risk herbicides in potatoes, weed burning

- Improved field selection/soil sampling, green manuring/bio-fumigation (caliente mustard) – reduced aldicarb use on carrots
Pesticide reduction - examples

• Decision support systems for potato blight control (reduced fungicide application and/or product substitution esp. mancozeb)

• Potato cyst nematode reduction - trap cropping (Solanum sisymbriifolium) Use of garlic

• Sulphuric acid (haulm destruction) replacement (haulm burning, haulm pulling, desiccant alternatives)
Pesticide reduction - examples

- Rhizoctonia control – field risk assessment (new soil test) rotation & crop type (set vs. loose skin)

- Wireworm – new pheromone traps to catch adult click beetles for improved field selection

- Aphicide use – re-appraisal of threshold levels with newer varieties

- Improved cold storage facilities, use of ethylene to replace CIPC as a potato sprout suppressant.
However, both short & long term strategies are important………

- Instant pesticide bans not always effective and may force growers out of production
- Reduction programmes must be practical & economically viable. Can’t allow reduction programmes to compromise product quality
- Whatever the strategy, it must be measured & managed with growers
Pesticide Impact measurement

- Solanum Ltd use an Environmental Impact Quotient measure (Kovak et al 1992)
- Provides a crop-by-crop measure based on a 1-5 rating in 11 categories (food safety, operator safety & environmental safety)
- Based on % a.i applied
- Allows us to 1) set target values 2) identify & use lower scoring actives 3) provides a focus for research
Pesticide reduction - measured success

EIQ Values

(Solanum Potato grower group)

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<thead>
<tr>
<th></th>
<th>&lt;150</th>
<th>150-250</th>
<th>250-400</th>
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<tbody>
<tr>
<td>2003</td>
<td>22%</td>
<td>43%</td>
<td>13%</td>
<td>22%</td>
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<tr>
<td>2004</td>
<td>44%</td>
<td>36%</td>
<td>16%</td>
<td>4%</td>
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% of all crops