

CONTROLLING RUSHES WITHOUT CHEMICALS

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The European Agricultural Fund
for Rural Development:
Europe investing in rural areas



The Scottish
Government



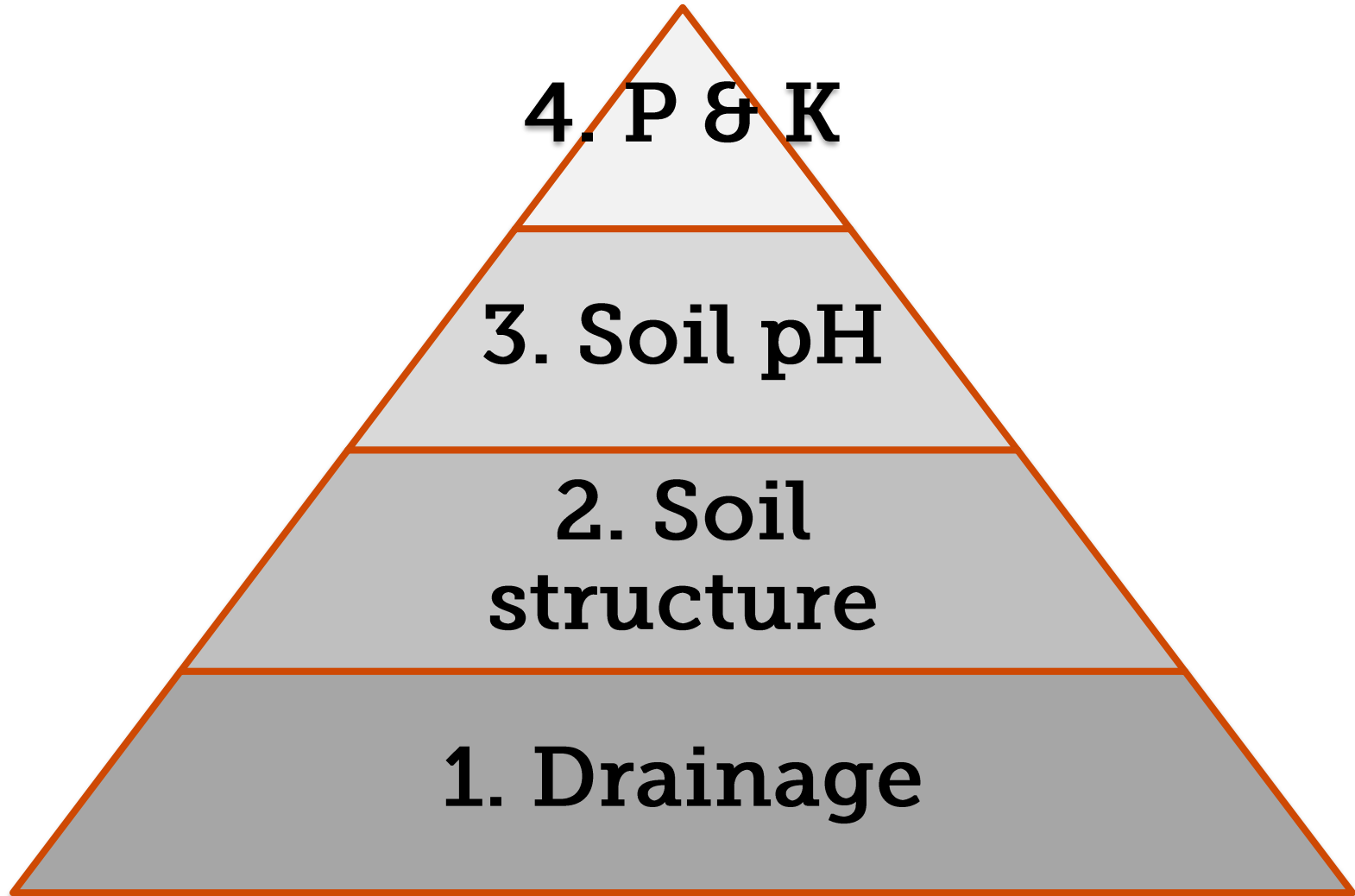
Forestry Commission
Scotland



The greater good

- Water quality
 - Pesticides
 - Phosphates
 - Nitrates
- Biodiversity
 - Funding through AECS
 - Waders
 - Wetland

Rush management





Removal of cover
(topping / mowing)

4. P & K

3. Soil pH

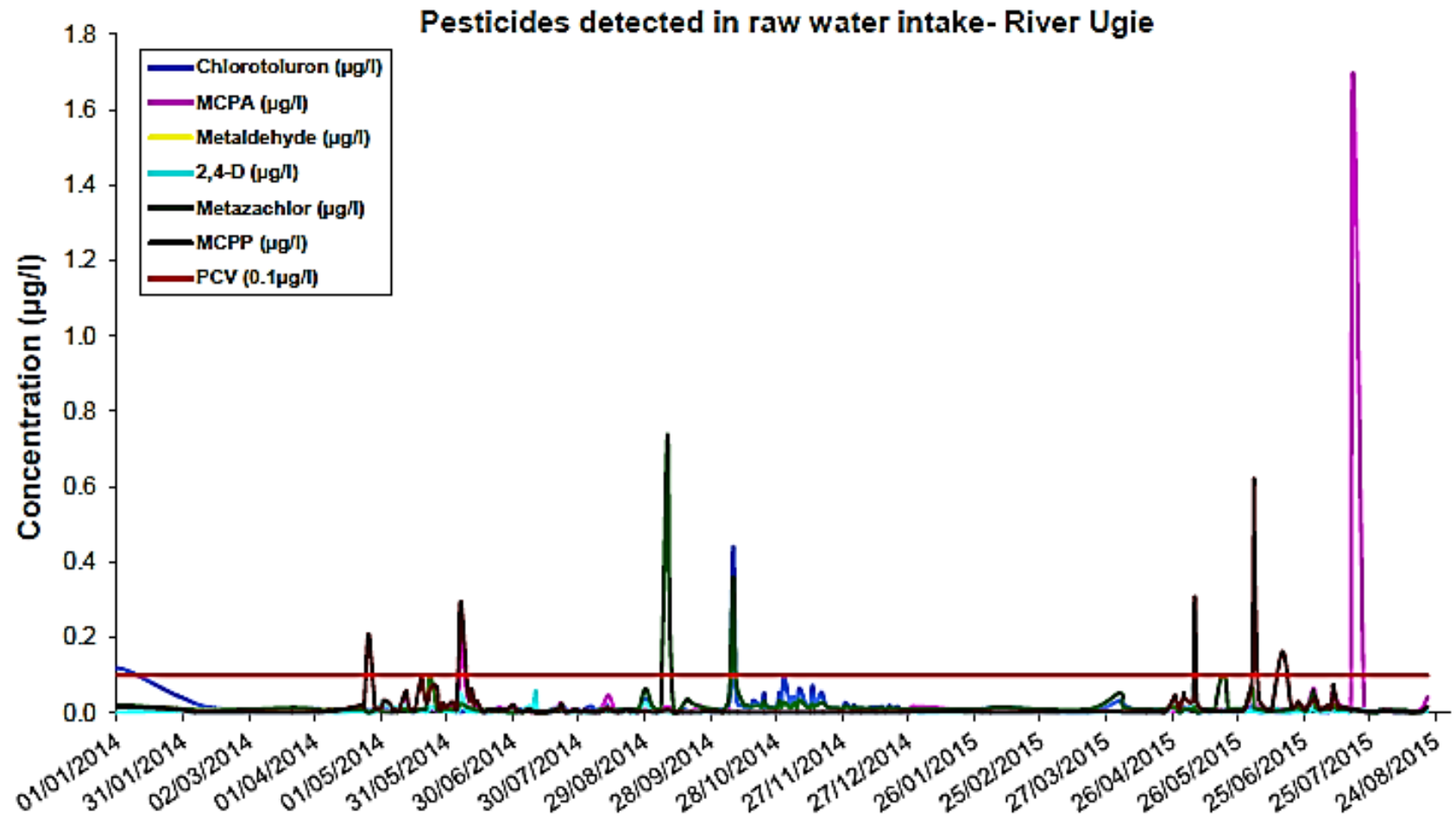
2. Soil
structure

1. Drainage

Control emerging rush
seedlings with grazing



Water quality



Water quality

Pesticides

- Scottish Water have reported high levels of MCPA in watercourses as land managers have tried to clear rushes ('ineligible land')
- Very costly to filter out of drinking water

Water quality

Nitrates and phosphates

- Poor soil structure and drainage could increase soil erosion and run-off
 - Phosphates
 - Nitrates
- Negative impact on water quality

Biodiversity

Wading bird species

- Boggy areas can be managed as a wader habitat
 - Good nesting sites and source of food
- Rushes are important for waders, and should not be allowed to become too thick
 - Shouldn't make up more than $\sim 1/3$ of the area
- Ideally areas are greater than 3 ha, vary in height, and are not next to trees or hedges

Biodiversity

Wading bird species

- Restrictions on livestock and mechanical operations during the breeding season
- The sward should be well grazed outwith the breeding season

Biodiversity

Wetlands

- Areas where the soil is saturated (permanently or seasonally)
- Supports plants, insects, amphibians, reptiles, mammals and birds
- Slow water flow, act as natural water storage zones, helping reduce impacts of flooding downstream

Does it matter?

- Future agricultural policy support could well relate to public goods
- Important that farmers show that food production in Scotland is good value to the tax payer

Acknowledgements

Ian Cairns



The logo for Soil Association Scotland features the word "Soil" in large, white, sans-serif capital letters. Behind the letters are three horizontal brushstrokes: a blue one at the top, a green one in the middle, and a brown one at the bottom. To the right of "Soil" is a blue, stylized, swirling graphic. Below "Soil" is the word "Association" in a black, cursive script font, and below that is the word "SCOTLAND" in bold, black, sans-serif capital letters.

Soil

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TACKLING PARASITOLOGICAL CHALLENGES IN RUMINANTS (SHEEP)

Spiridoula Athanasiadou

**Reader in gastrointestinal health,
SRUC**



Basket of options

- Worm control with reduced reliance on wormers

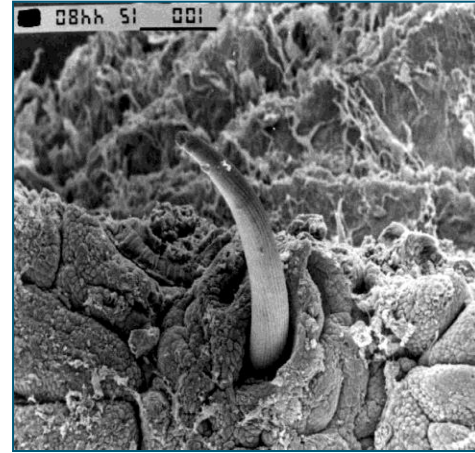


Worm damage & lamb growth

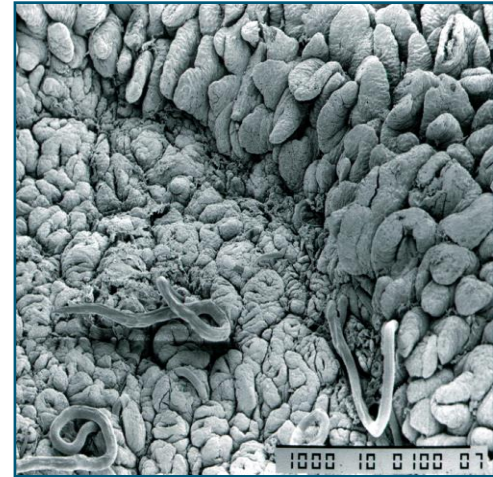
Worm infections reduce performance

- reduced food intake
- impaired food digestion
- protein leakage (needs replenishment)
- gut damage (needs repair)

Less nutrients are left for the animal to grow



Disrupted stomach function



Gut damage in small intestine

Worm monitoring trial 2015

- Organic sheep farmers trialed from the basket of options
- Managed a small number of sheep with an option from the basket
 - Remaining sheep managed as usual (control)
- FEC and cultures by researchers
- Questionnaire and economic analysis

Please help

- There is more information gathering to be done
 - Questionnaires
 - Small focus group meetings
- Mainly aimed at organic farmers, but all farmers can be a part of it
- If you are interested in helping, then we can get you in touch with the researcher
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SRUC