

Analysis of lime statistics

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Use of lime

Source of information

- British Survey of Fertiliser Practice (BSFP):
 - annual
 - covers England, Scotland, Wales
 - available at www.gov.uk/government/collections/fertiliser-usage

ADVISORY DEPT

Survey
of
**FERTILIZER
PRACTICE**

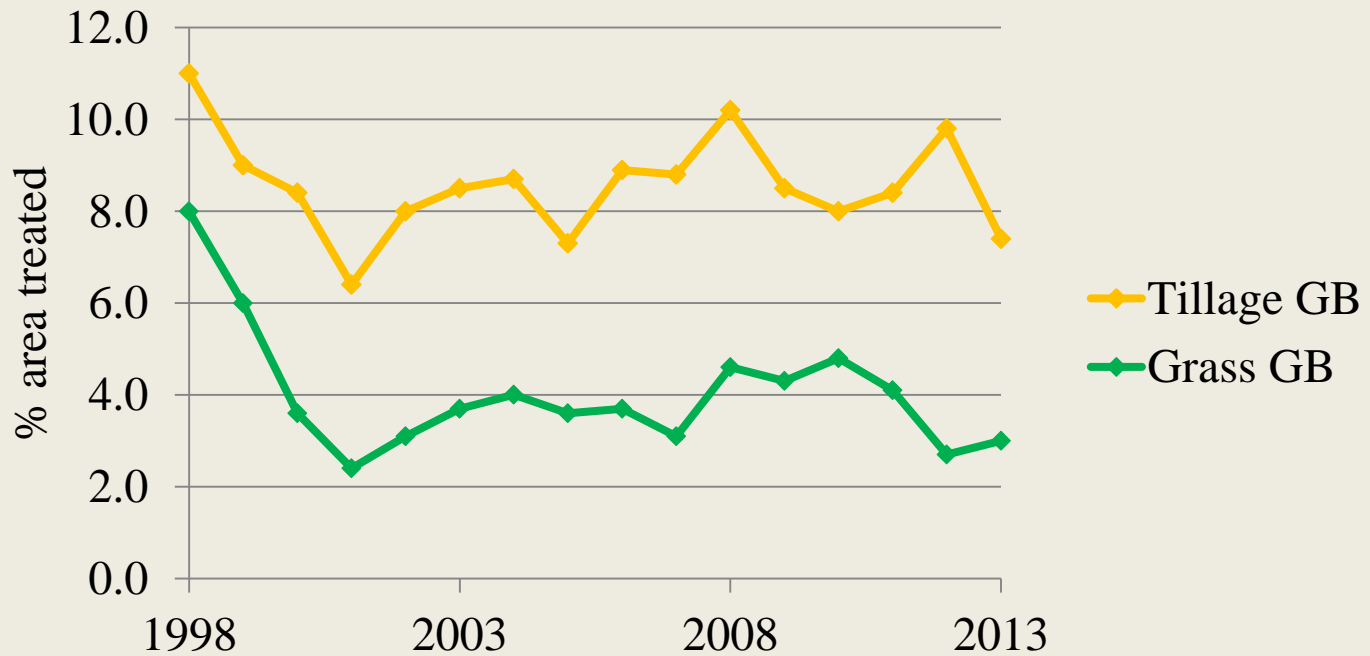
1952
(PART I)



*Carried out jointly by the Advisory
Chemists of the National Agricultural
Advisory Service and the Staff
of the
Rothamsted Experimental Station*

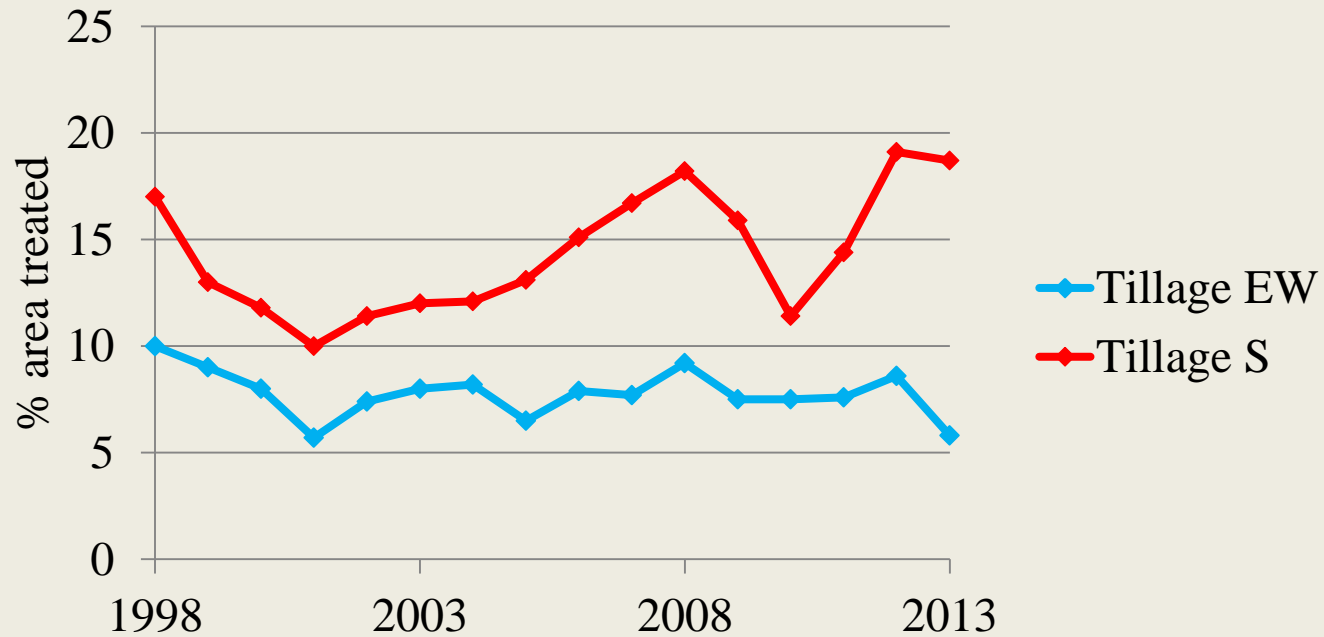
Percentage area treated

(Source: BSFP)



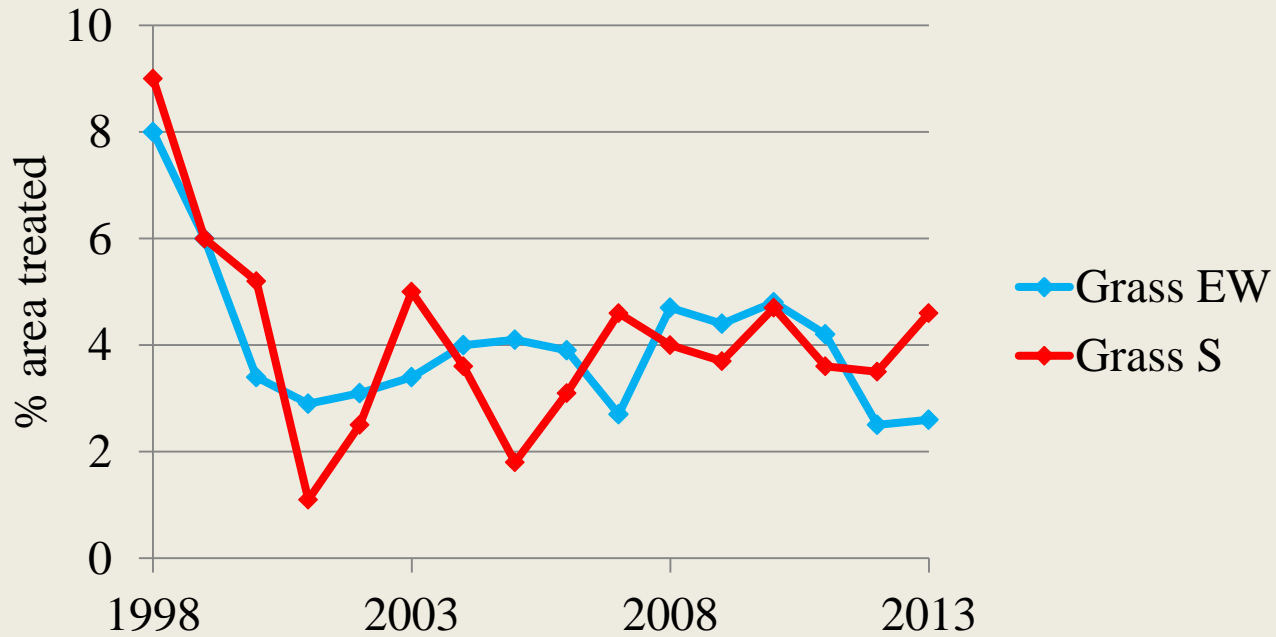
Percentage area treated

(Source: BSFP)



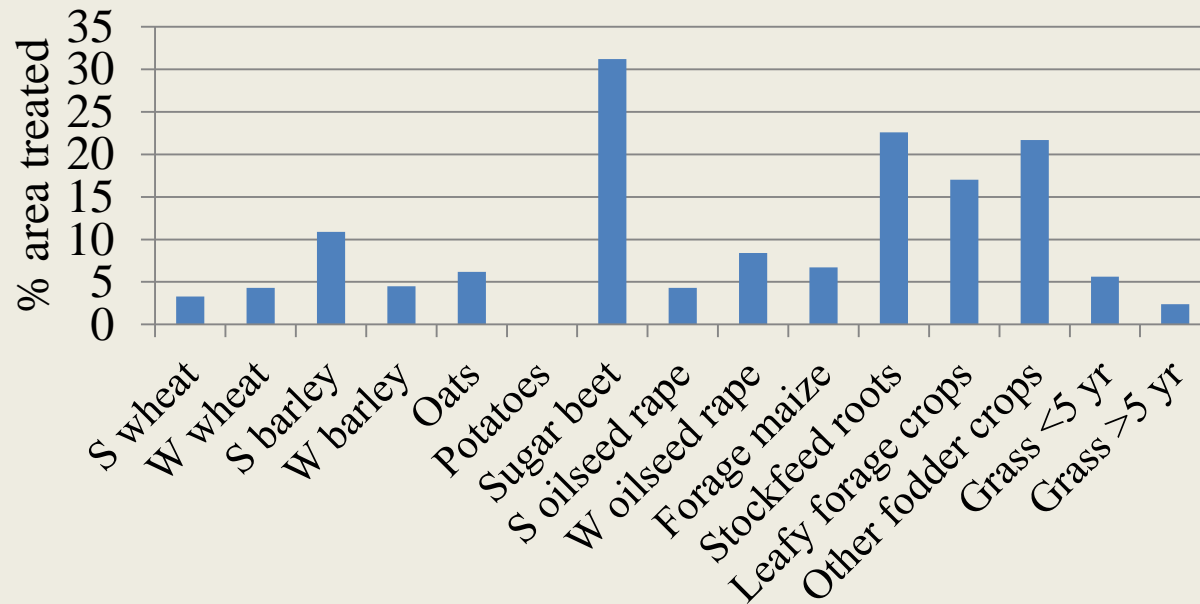
Percentage area treated

(Source: BSFP)



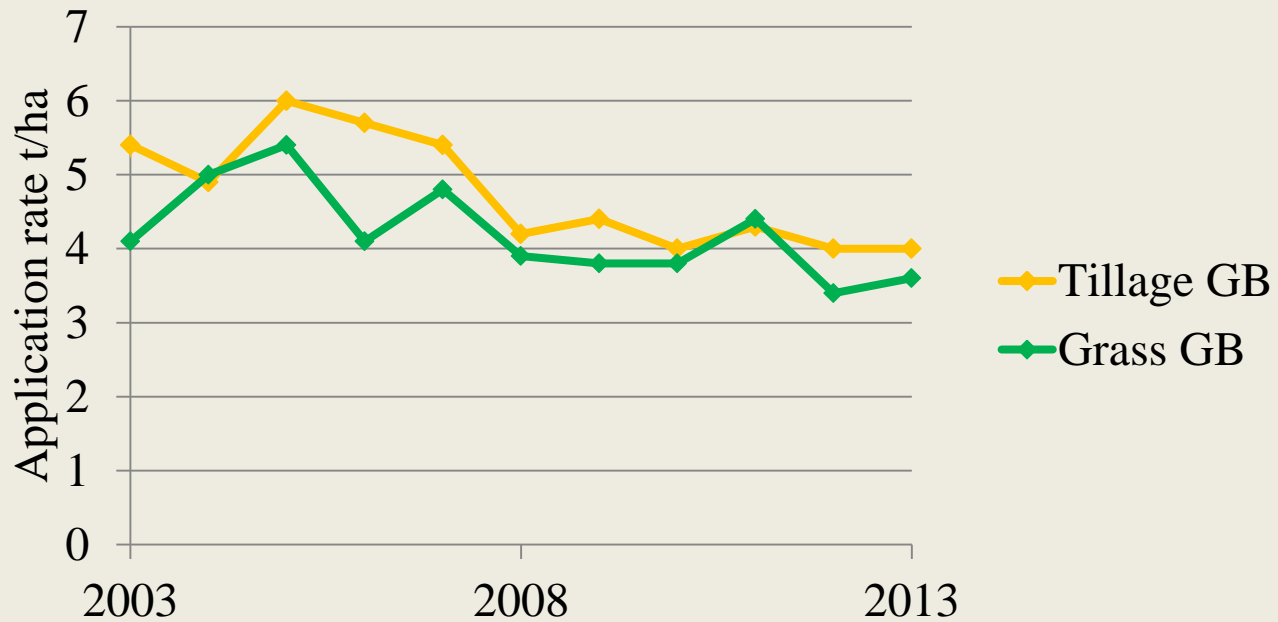
% area receiving lime

(Source: BSFP, 2013 crop year)



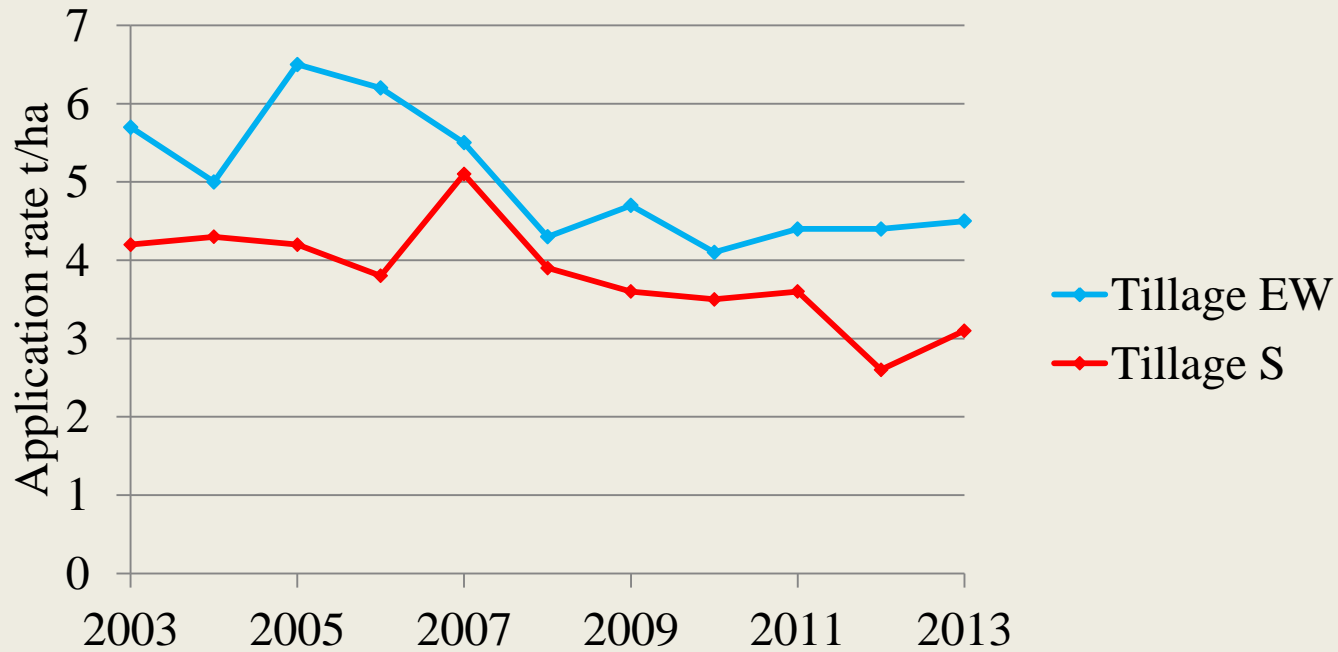
Average application rate

(Source: BSFP, 2013 crop year)



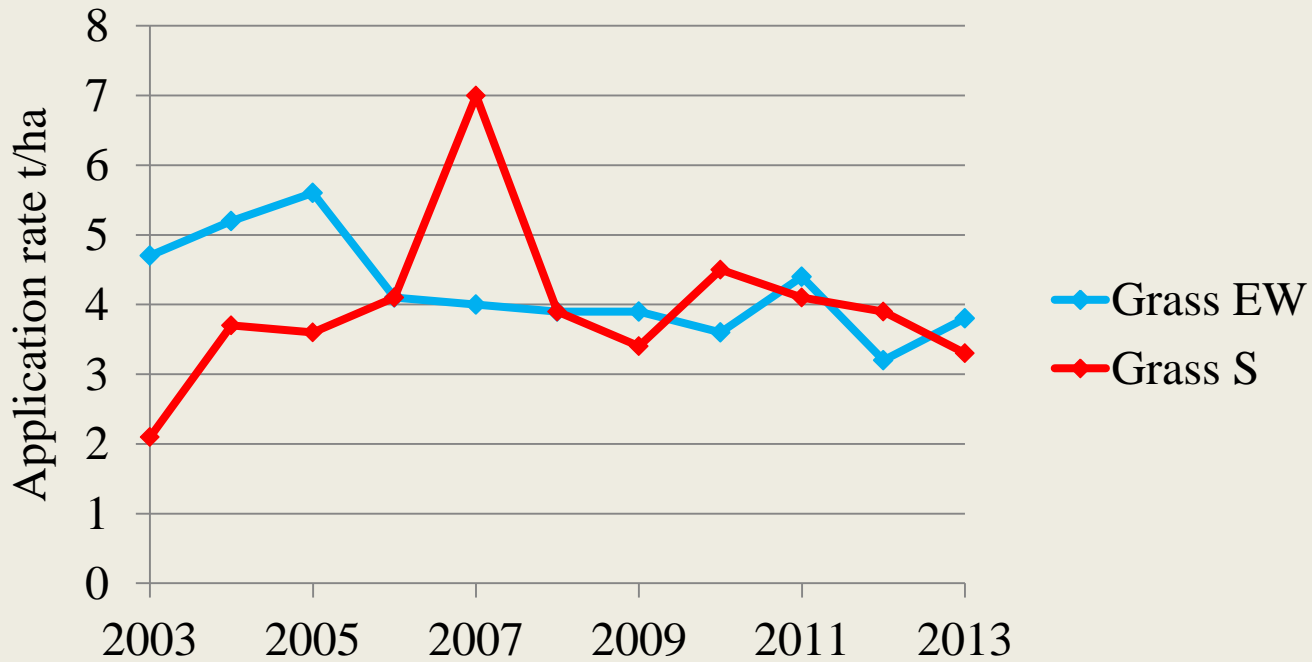
Average application rate

(Source: BSFP, 2013 crop year)



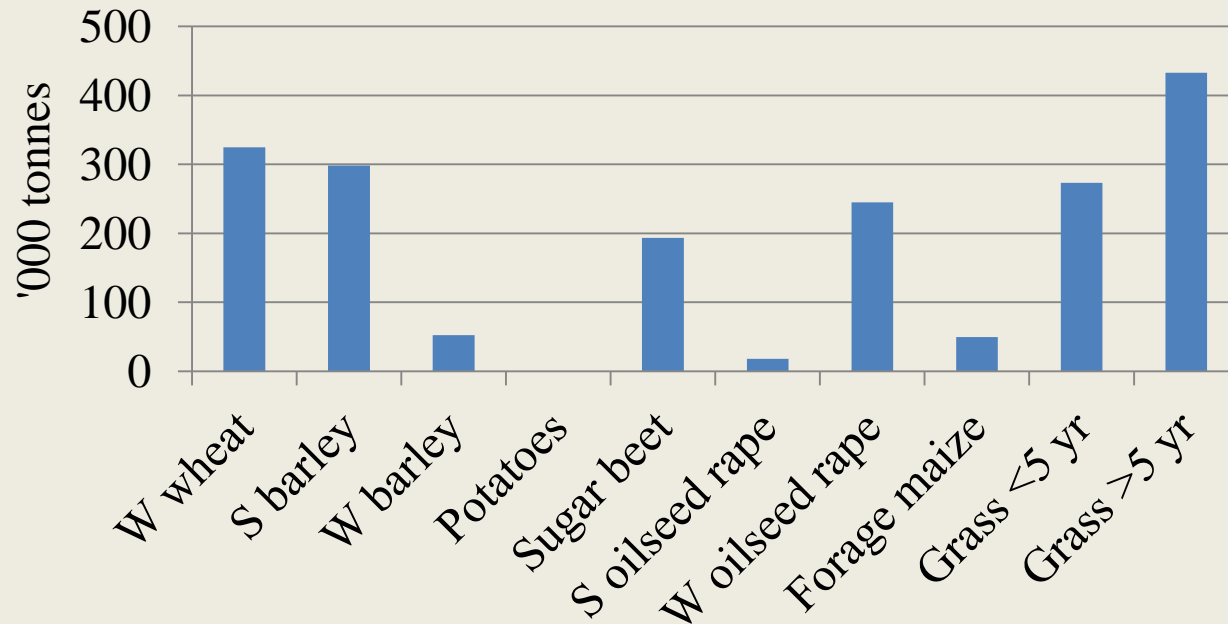
Average application rate t/ha

(Source: BSFP, 2013 crop year)



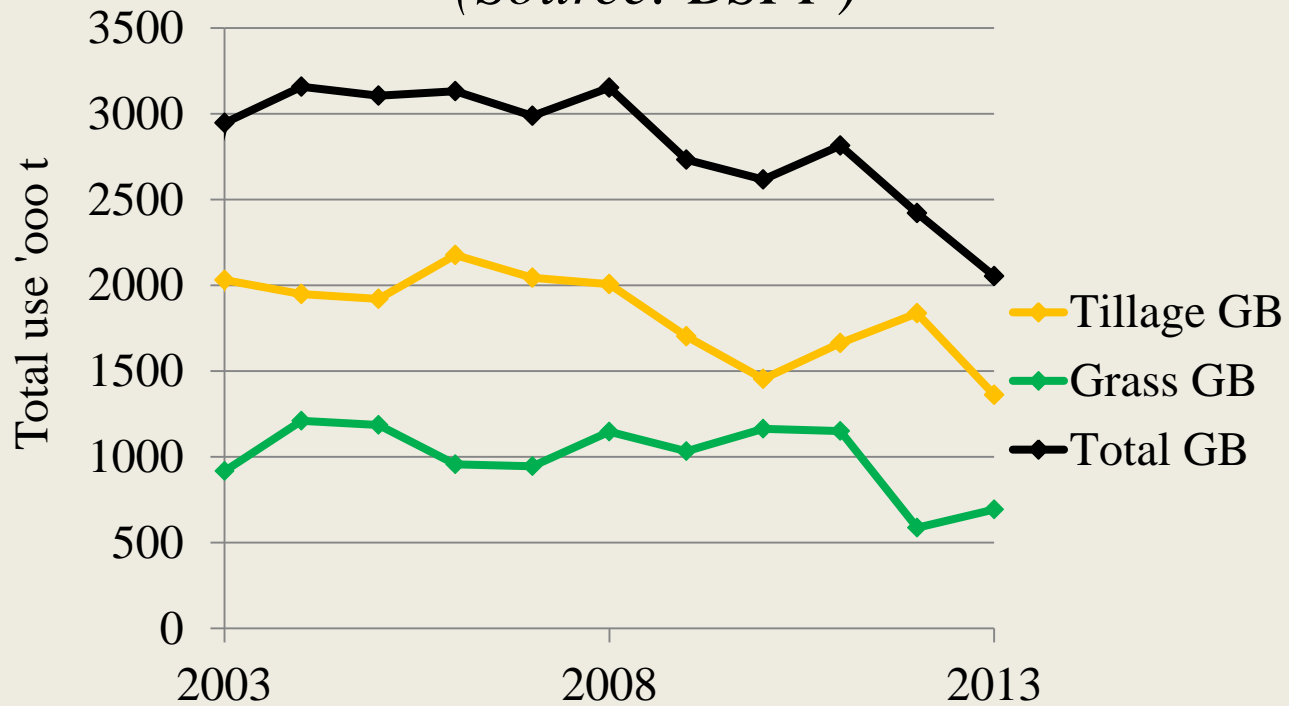
Lime applied by crop

(Source: BSFP, 21013 crop year)



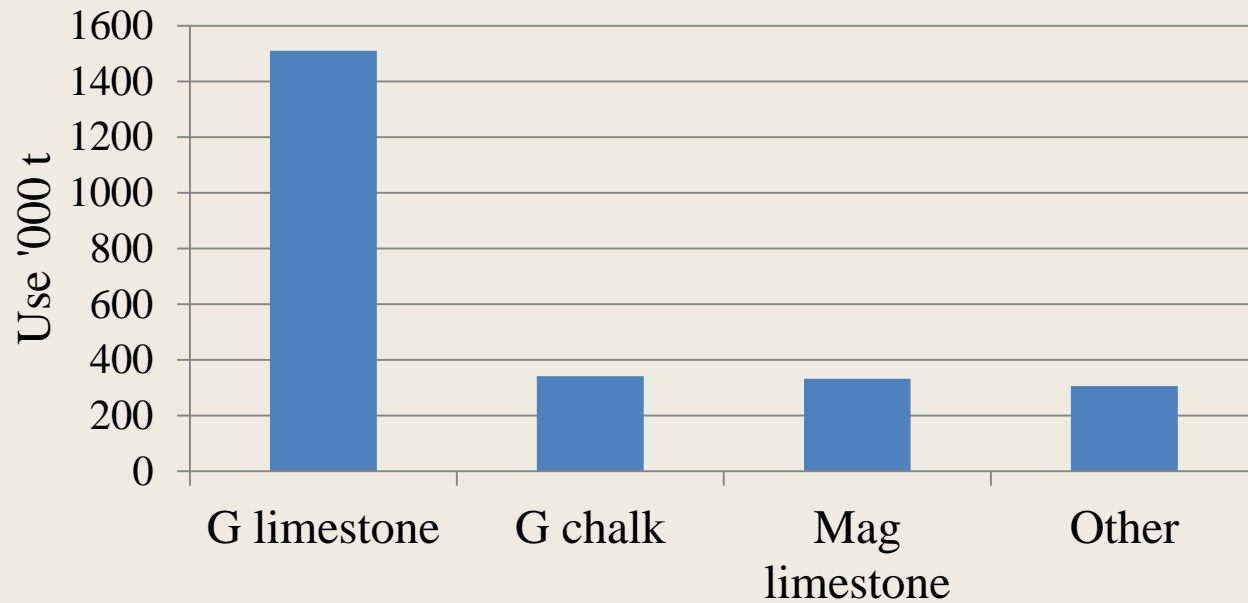
Use of liming materials

(Source: BSFP)



Use of materials

(Source: BSFP, average 2011-2013)



Soil pH

Source of information

- Professional Agricultural Analysis Group (PAAG):
 - main UK laboratories that conduct routine soil analysis (pH, P, K, Mg)
 - all participate in WEPAL (Wageningen) ring test
 - reports summarize pooled data from routine soil samples
 - annual reports since 2009 (regional breakdown in 2009)
 - available at www.nutrientmanagement.org

Statistical analysis of PAAG data

- Data from around 250,000 routine soil samples every year.
- Farm details removed before statistical analysis but crop and previous crop information retained.
- Post code data retained in 2009 for regional breakdown.

PAAG pH classes

<5.00

5.00-5.49

5.50-5.99

6.00-6.49

6.50-6.99

7.00-7.49

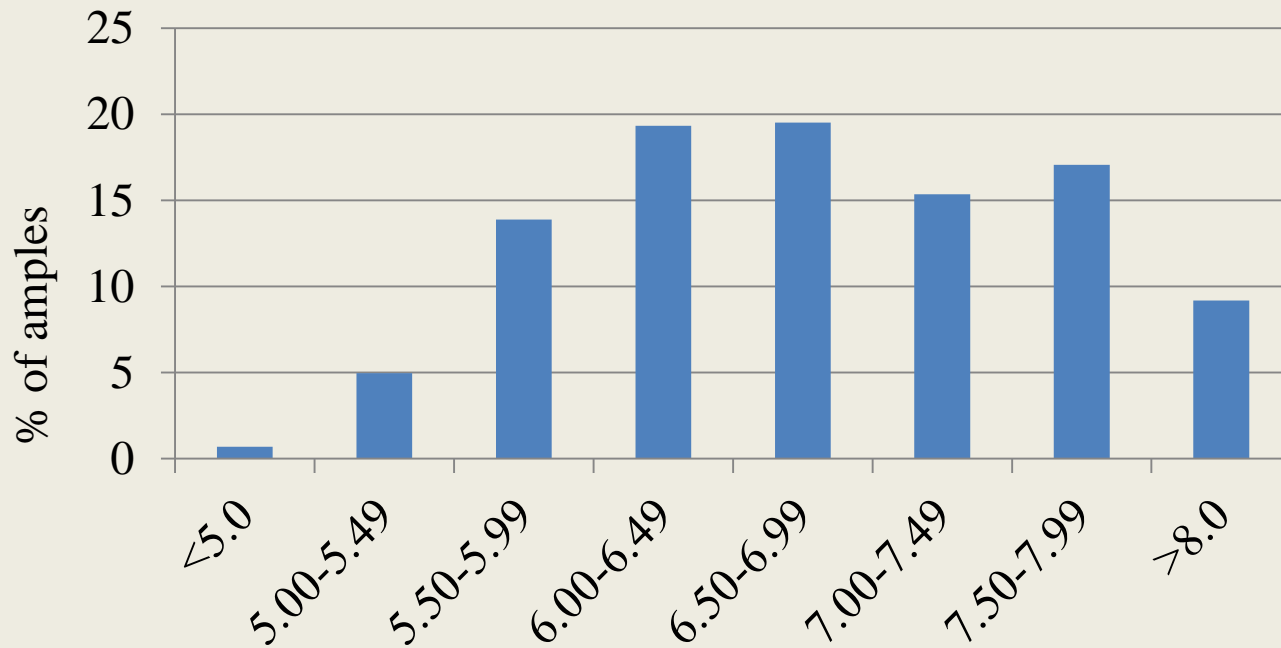
7.50-7.99

>7.99

Separate statistics for grassland and arable samples

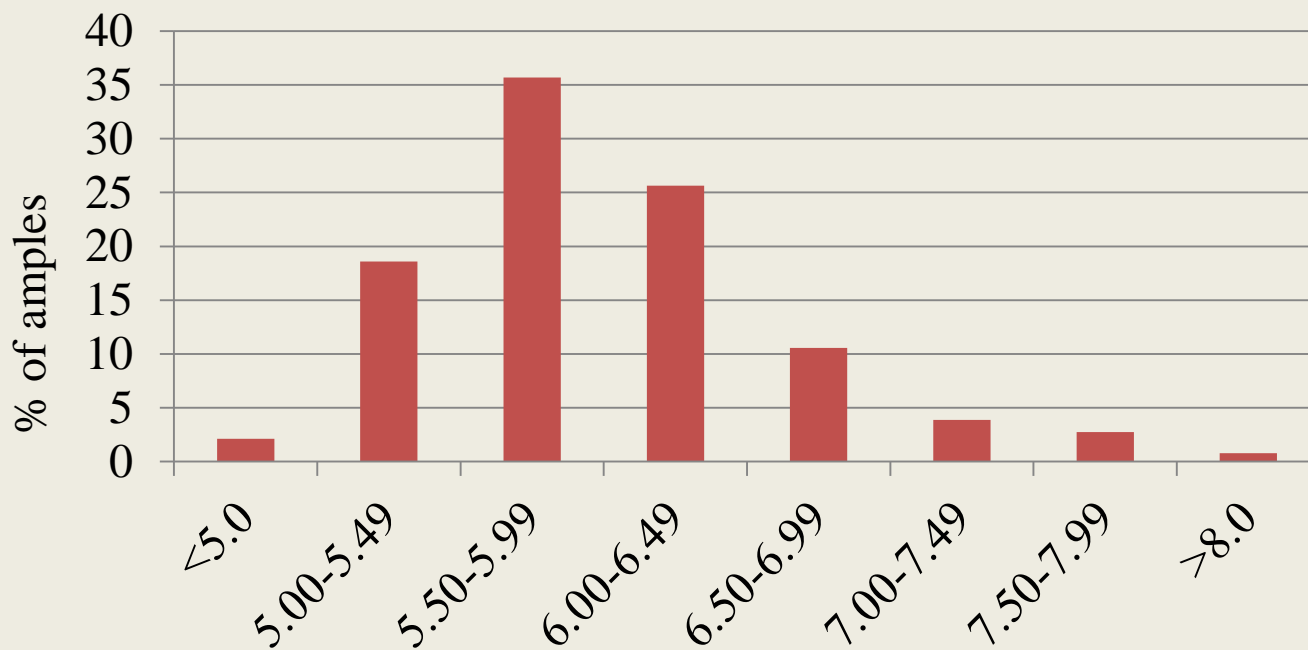
Soil pH - arable samples

(Source: PAAG, 2013/14)



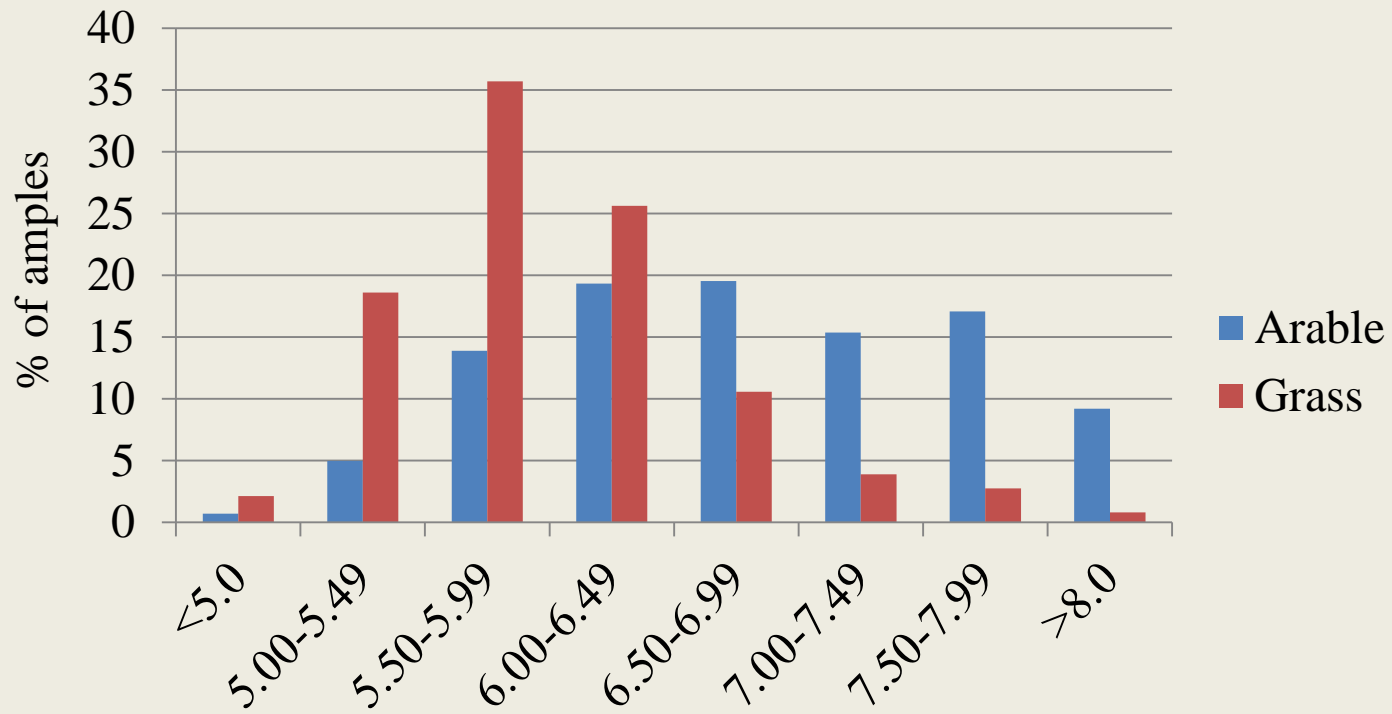
Soil pH - grass samples

(Source: PAAG, 2013/14)



Soil pH distribution

(Source: PAAG 2013/14)



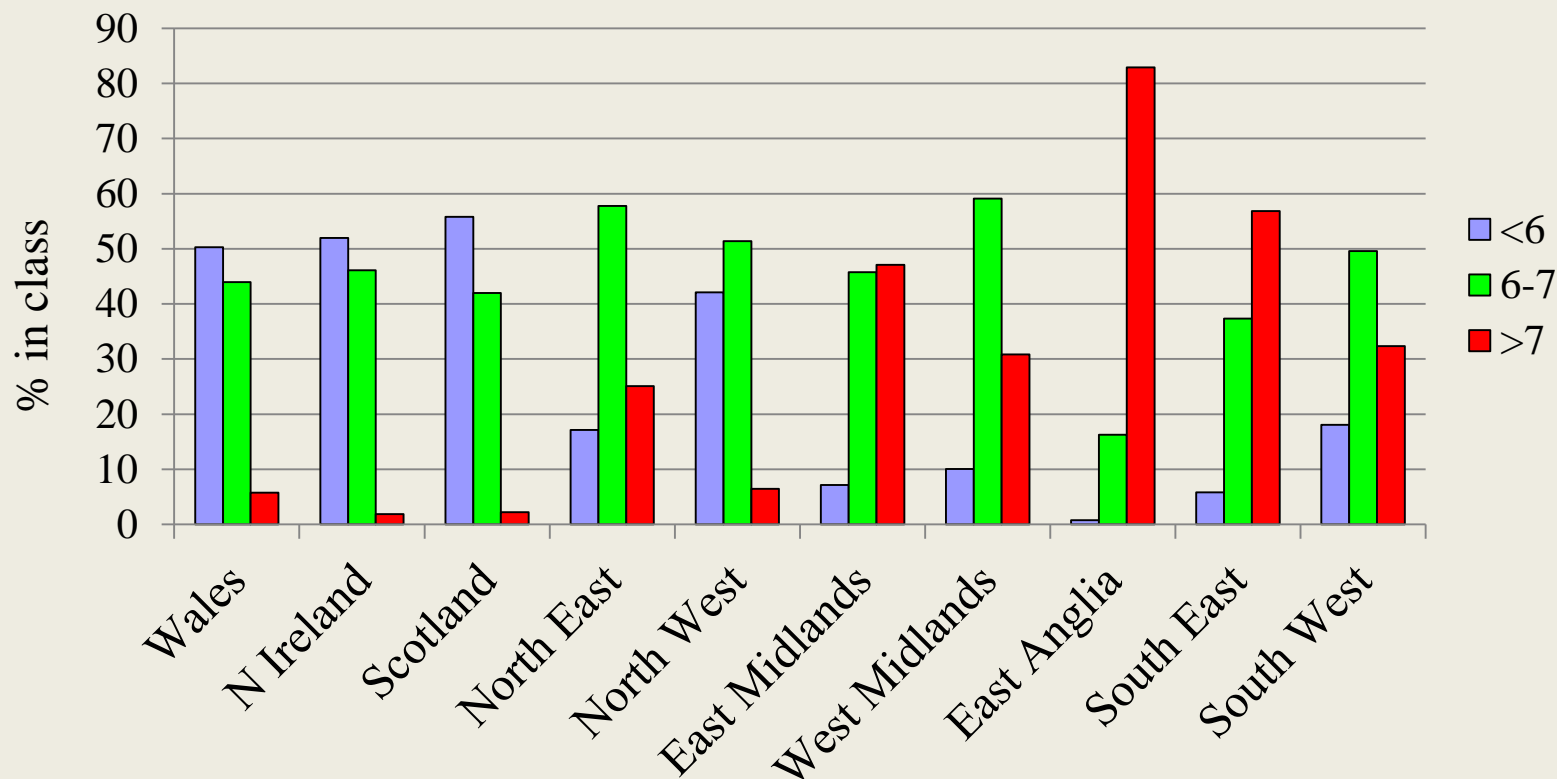
Percentage of samples at low pH

(Source: PAAG, 2013/14)

| | <5.5 | <6.0 | <6.5 |
|-------------|----------------|----------------|----------------|
| Arable | 6 | 20 | 39 |
| Grass | 21 | 57 | 81 |
| All samples | 10 | 31 | 52 |

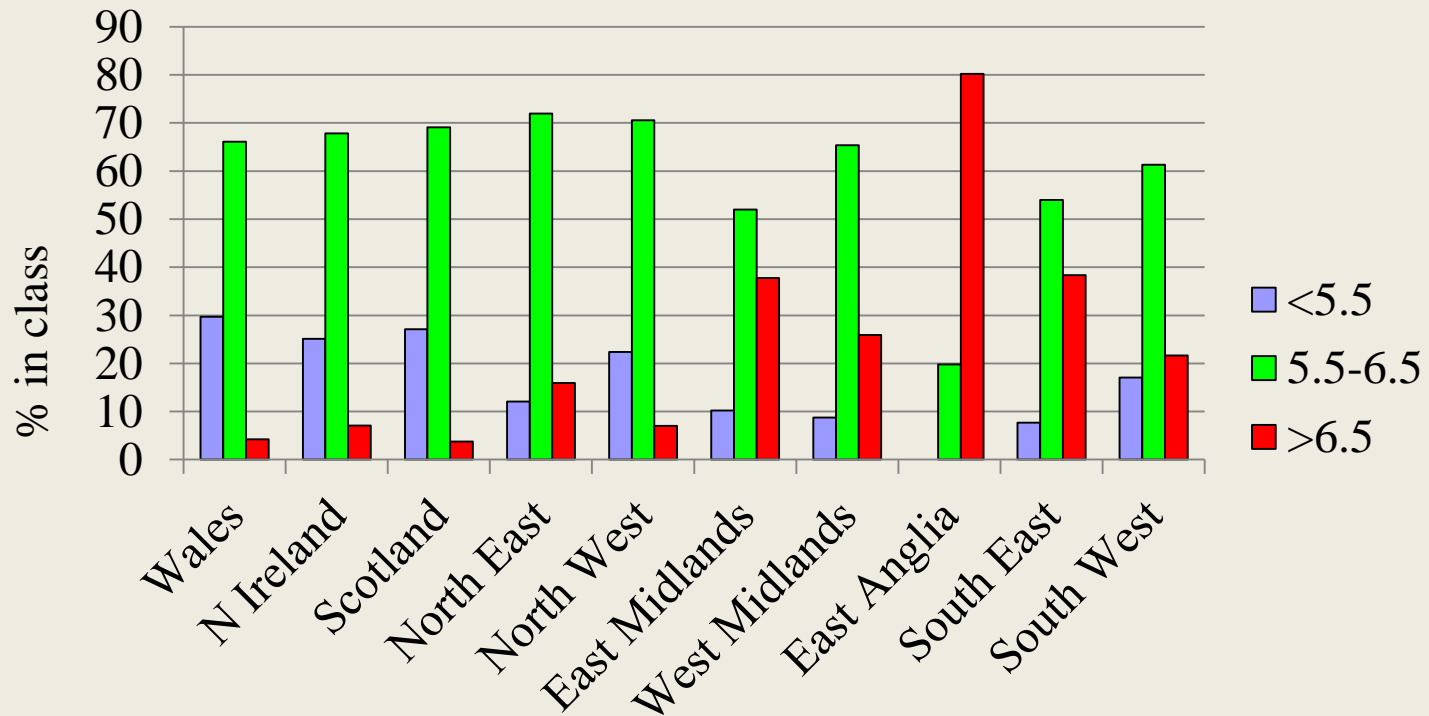
Soil pH by region

(Source: PAAG, arable samples, 2009)



Soil pH by region

(Source: PAAG, grass samples, 2009)





Soil pH affects or is affected by:

- Availability of nutrients
- Crop yield
- Availability of some potentially toxic elements
- Rates of nitrification and denitrification
- $\text{N}_2\text{O}/\text{N}_2$ ratio in denitrification
- Application of nitrogen fertilizers
- Soil microbial populations
- Nitrogen fixation in legumes
- Populations of some pathogens

Important aspects of lime

- Value
 - Improved nutrient use efficiency
 - Crop yield maintenance/increase
 - Control of GHG emission
 - Enhanced soil microbial populations
- Quality
 - Neutralizing Value
 - Reactivity
 - Effective Neutralizing Value