

TILLAGE

January 2021

Lime and soil pH

Edited by
Ciaran Collins,
Tillage Specialist

Soil pH plays a key role in soil fertility. Maintaining the soil pH at the optimum level will increase the microbiological activity of the soil, and result in better soil nutrient recycling and release.

Soil pH is also critical for maximising the availability of nutrients (nitrogen (N), phosphorus (P) and potassium (K)) applied in organic and chemical fertilisers.

How much lime to spread?

- Test soils on a regular basis (every three to five years) to determine lime requirements.

Table 1. Optimum soil pH for a range of crops.

Crop	Optimum pH
Beet, beans, peas and oilseeds	7.0
Cereals and maize	6.5
Grassland	6.3
Potatoes	6.0



Lime gives a 6:1 return on investment.

- Only apply lime based on a recent soil test report.
- Don't exceed 7.5t/ha in a single application.
- Application rates >7.5t/ha, apply 50% now and remainder in two years.
- Apply lime to the ploughed/pressed soils and incorporate into the top 7.5 to 10cm of soil.

Lime and slurry/urea

The type of N supplied in slurry and from urea is ammonia N and is prone to loss if applied to freshly limed soils.

To avoid N loss, it is recommended to wait at least three months after liming before applying urea or slurry. Wait 10 days after slurry or urea application before applying lime.

Return on investment

Research shows maintenance lime application costing €33/ha/yr will give a cereal grain production response of at least 1.5t/ha. This is worth €225/ha of extra grain (15% DM) (assuming grain price of €150/t). At farm level every €100 investment in lime equates to approximately €675 in extra crop production annually. This represents a return on investment of 6:1 from correcting soil pH.

Spring beans

The area of spring beans increased to 12,600ha in 2020. The protein payment is available again this year and favourable forward prices are available from the trade.

This makes beans a financially attractive option for 2021 notwithstanding the additional benefits for succeeding crops.

Beans do suffer from yield variation similar to other crops but the 10-year yield average is 5.45t/ha.

There are many benefits of growing beans:

- provide a good break crop in rotations, thus allowing first-crop wheat production to be increased;
- the ability of beans to fix nitrogen decreases nitrogen requirement in the following crops;
- additional crop to fulfil the three-crop rule requirements;
- allow an alternative mode of action to control grass weeds; and,
- crop diversity which helps soil biology.

Teagasc research carried out in 2015 and 2016 indicates that planting in late February to mid-March will give the best chance of achieving a high yield and a reasonable harvest date.



Beans are an excellent break crop option.

Crows are a major pest of beans particularly in early spring. Deep planting (4-5") has proven to be successful at preventing crow damage at planting.

But crows are clever and will wait for the plants to emerge and will pull the plants from the ground to get the seed. Ideally bean emergence would coincide with good growth (mid-March on) and the 'at risk' period is short.

Lynx and Fanfare will be the main varieties and aim to establish 30-35 plants/m². Incorporation

of P and K is beneficial especially at index 1 and 2. There is no benefit to seedbed nitrogen. Pre-emergence weed control will be based around pendimethalin products with 800g/ha plus of active ingredient required for persistent control. Imazamox, clomazone and prosulfocarb are potential partners to broaden the weed spectrum especially where charlock, volunteer oilseed rape, cleavers, mayweeds and groundsel are present. For example: Nirvana 4.0L/ha, Stallion 3.0L/ha.

Table 2. Phosphorus and potassium for beans (kg/ha).

Soil index	P	K
1	50	125
2	40	60
3	20	40
4	0	0

HEALTH & SAFETY

Health is wealth

Put health at the top of your agenda for 2021. A major Irish study completed in 2020 found that 74% of farmers have four or more risk factors for cardiovascular disease (CVD), which increase the chance of having a stroke or heart attack threefold compared to those with fewer risk factors. January is the month for new year resolutions, but the challenge is to implement them over time! Select achievable goals and check in with yourself at regular



intervals to see how you are doing. Better still, work with a friend or family member to monitor goal achievement. The booklet 'Fit for Farming' on the web gives health goal pointers. Small changes over time can have a major impact on one's health. The Irish health study is available at:

<https://www.teagasc.ie/publications/2020/farmers-have-hearts-cardiovascular-health-programme.php>.



Dates for your diary

In compliance with Covid-19 regulations, the normal county seminars and the National Tillage Conference will take place virtually for 2021.

Spring Tillage Seminars by Webinar

January 19, 2021

Time: 11.30am

Venue: Online

Topics

- Spring cereal varieties
- Carbon and straw incorporation
- GLAS and biodiversity on tillage farms

January 21, 2021

Time: 11.30am

Venue: Online

Topics

- BREXIT – impact on the tillage industry
- Optimising the use of organic manures
- Beans – grower experiences



Hold your camera over the QR code to open link.

There will be a variety of contributors sharing their expertise and experience including farmers, advisors and tillage specialists. Attendees will be able to ask questions and interact with the contributors each day.

National Tillage Conference

The 2021 National Tillage Conference takes place virtually, split over two days (both Wednesdays), **February 3 and 17, 2021.**

Tillage podcast

Teagasc produces a weekly podcast, called the Tillage Edge, which discusses all the latest news and advice relevant to tillage farmers. Topics include crop agronomy, seasonal updates, grain markets, machinery, finance, etc. These podcasts can be found on the Teagasc website, Apple Podcast, Spotify or on this QR code.

