

SAXMUNDHAM: MODERN P MANAGEMENT LEARNINGS

The Saxmundham Experimental Site is delivering new guidance on soil management since the introduction of the new treatments.

Soil organic matter

- Soil organic matter is ~0.8% higher in the FYM plots than in plots receiving no organic amendments (Figure 1).
- While 0.8% may seem small for over a century of manure applications, it is a 19% relative increase, improving soil structure, water holding capacity and nutrient availability/efficiency.
- Green Waste Compost (GWC), first applied in autumn 2019, has led to a ~0.4% increase in soil organic matter. Detectable increases in soil organic matter can be achieved with regular additions of organic amendments.

Yield response

Yield results are based on three cropping years (2019-2022 wheat, barley, beans). Yield comparison across seven treatments shown in Figures 2 and 3.

- No yield response was observed from mineral K fertiliser; the soils are naturally K-releasing (untreated plots remain around Index 2–).
- Only a small, non-significant yield increase was recorded from foliar-applied P suggesting limited impact of foliar P alone to meet crop needs.
- Applying mineral P to an Index 2 soil generated a 35% increase in yield over Index 0, demonstrating the importance of soil testing and maintaining P indices.
- Regular FYM applications increased yield by a further 18% over mineral P and K alone at Index 2.
- This added response from FYM comes from improved soil structure with better water-holding capacity and drainage together with increased availability of nitrogen and micronutrients.

Figure 1. Soil organic matter since 2017.

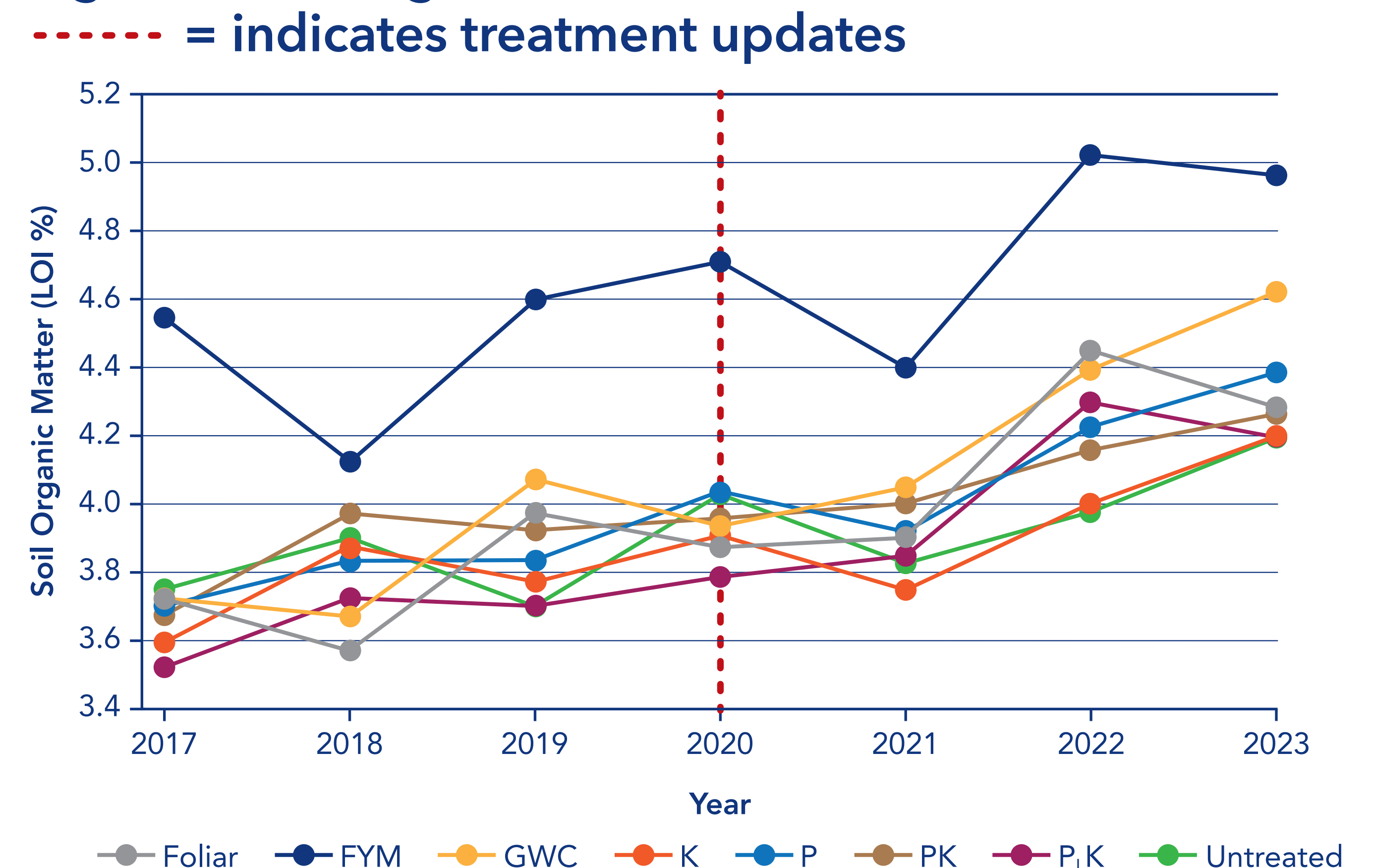


Figure 2. Yield response over untreated since treatment updates (2020-2022)

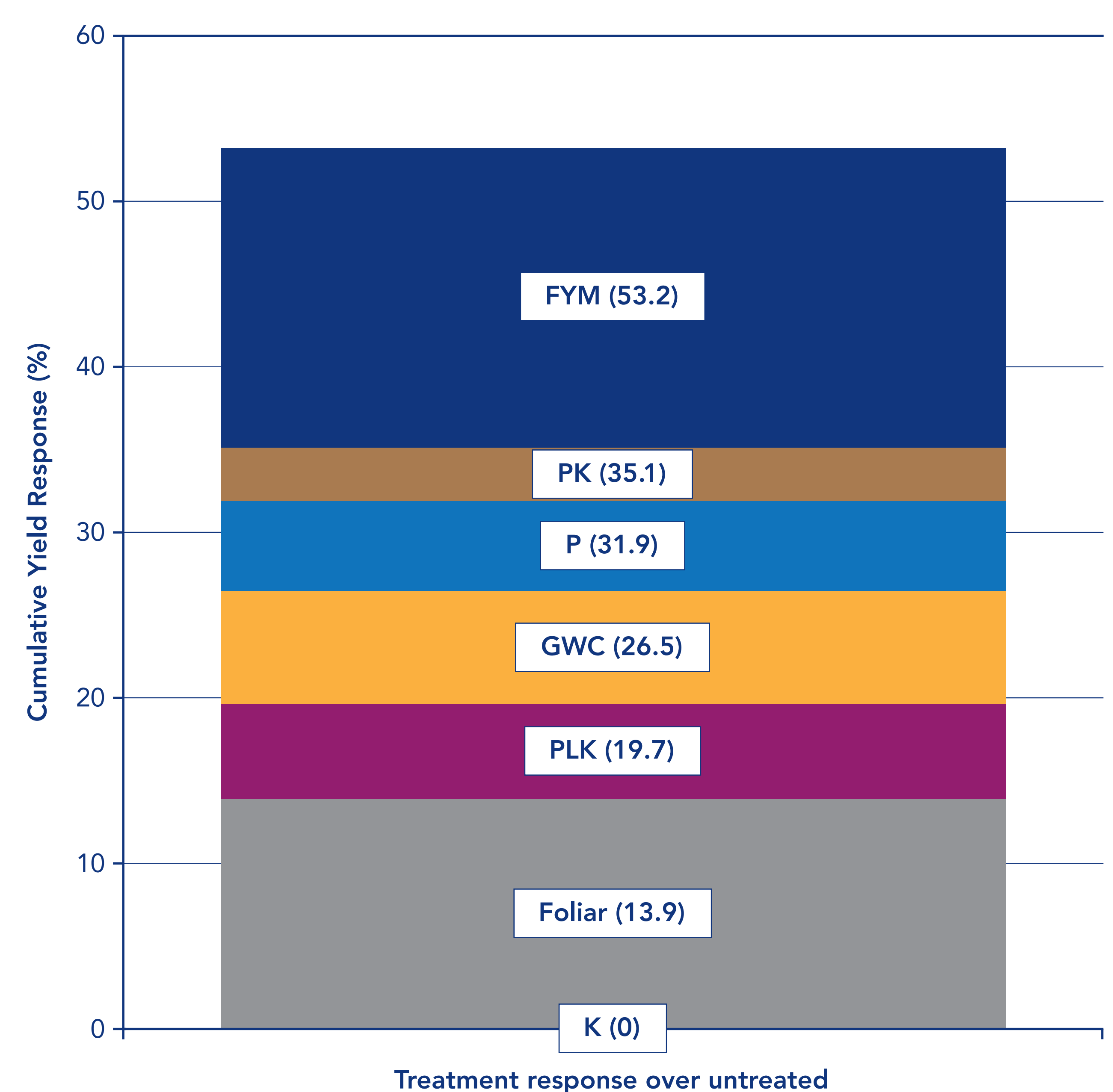


Figure 3. Yield response to various P treatments (2004-2022). ----- = indicates treatment updates

