

**Facile deferration of commercial fertilizers containing iron chelates
for their NMR analysis**

Luca Laghi,[†] Sara Alcaniz,[‡] Mar Cerdà,[‡] Mar Gomez-Gallego,[◇] Miguel Angel Sierra,[◇]
Giuseppe Placucci[†] and Mauro Andrea Cremonini^{†*}

[†] Department of Food Science, University of Bologna, P.zza Goidanich 60, 47023
Cesena, Italy

[‡] Department of Agrochemistry and Biochemistry, Faculty of Sciences, University of
Alicante, 03080 Campus de San Vicente del Raspeig, Alicante, Spain

[◇] Departamento de Química Orgánica, Facultad de Química, Universidad Complutense,
28040, Madrid, Spain.

*Corresponding Author: Telephone: +390547338106

Fax: +390547382348

E-mail: mauro.cremonini@unibo.it

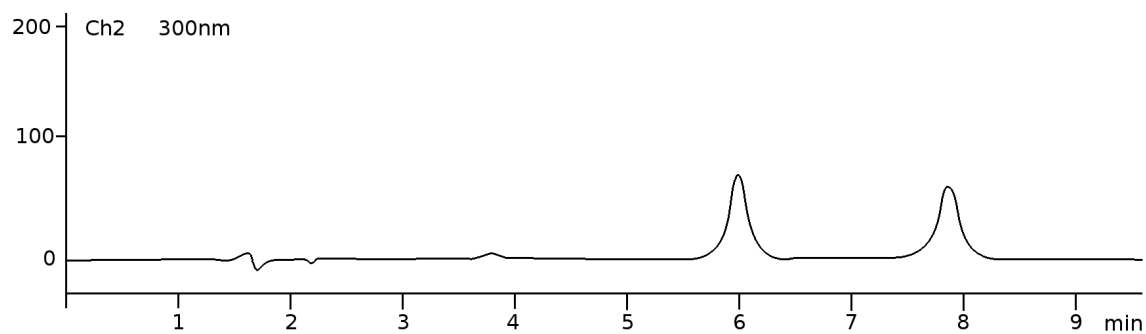


Figure 1. HPLC chromatogram of sample A.

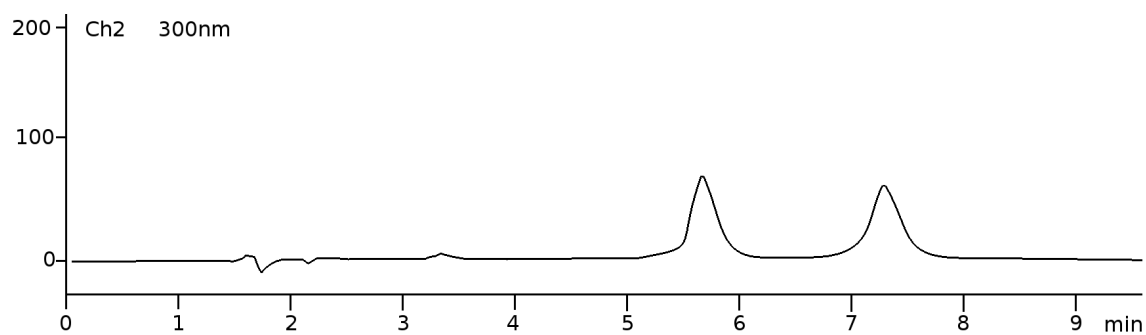


Figure 2. HPLC chromatogram of sample B.

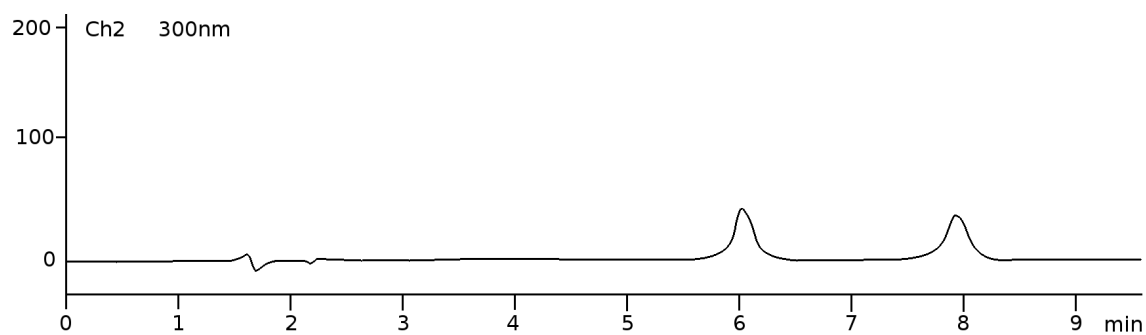


Figure 3. HPLC chromatogram of sample C.

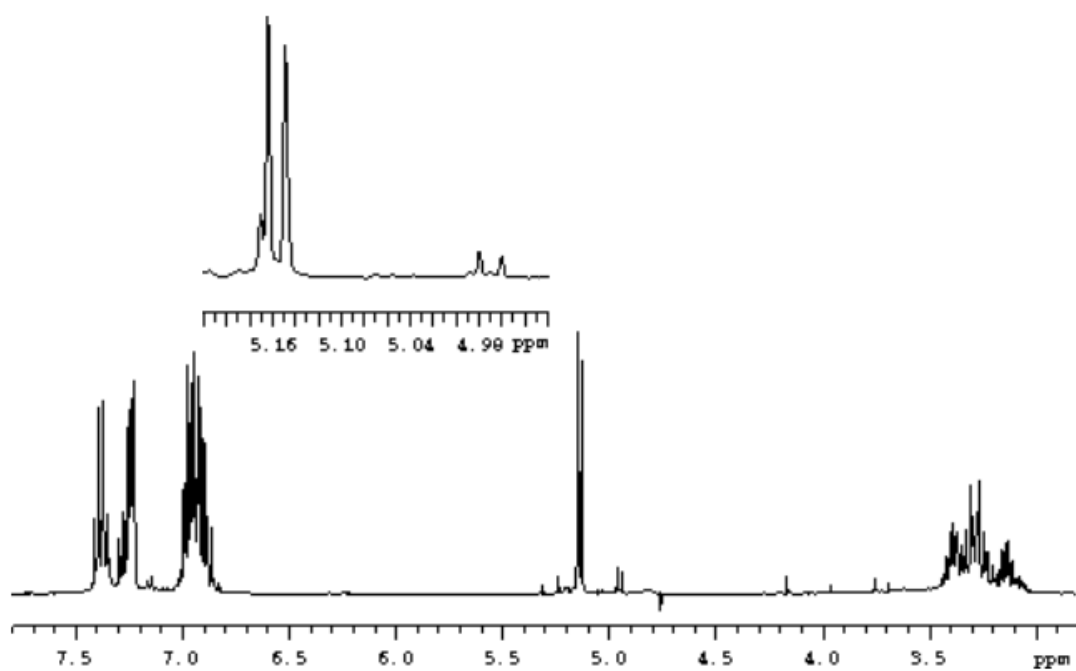


Figure 4. ^1H -NMR spectrum of sample B after deferration.

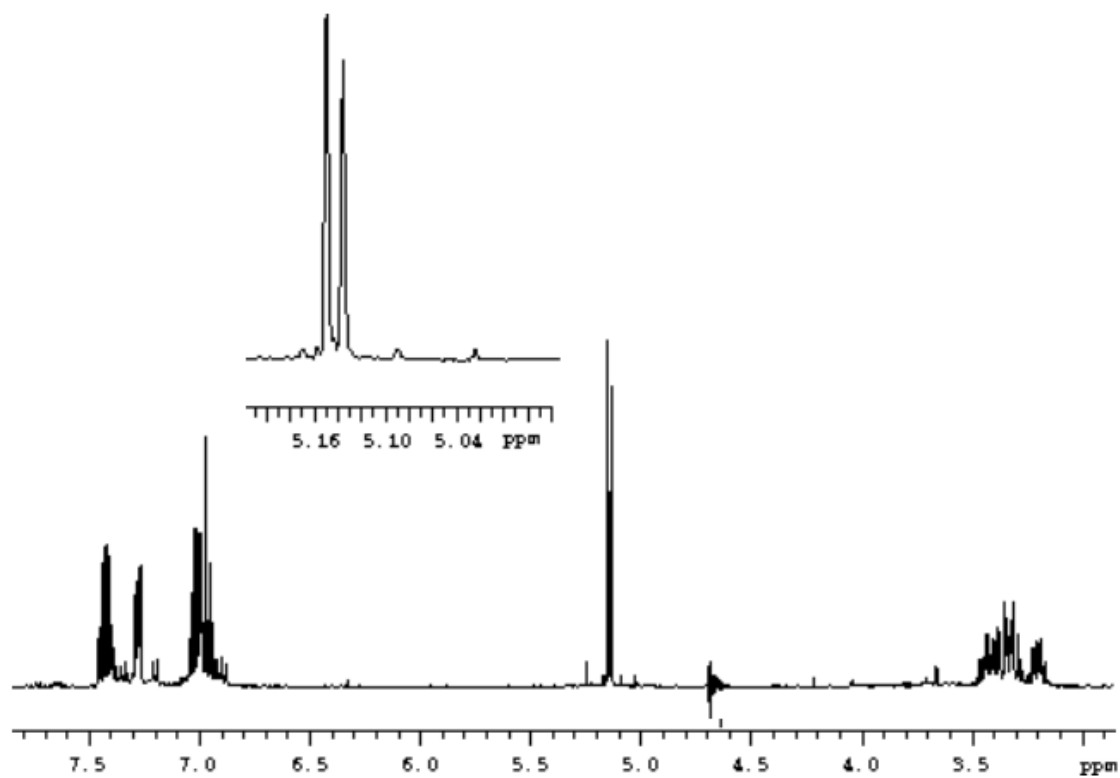


Figure 5. ^1H -NMR spectrum of sample C after deferration.

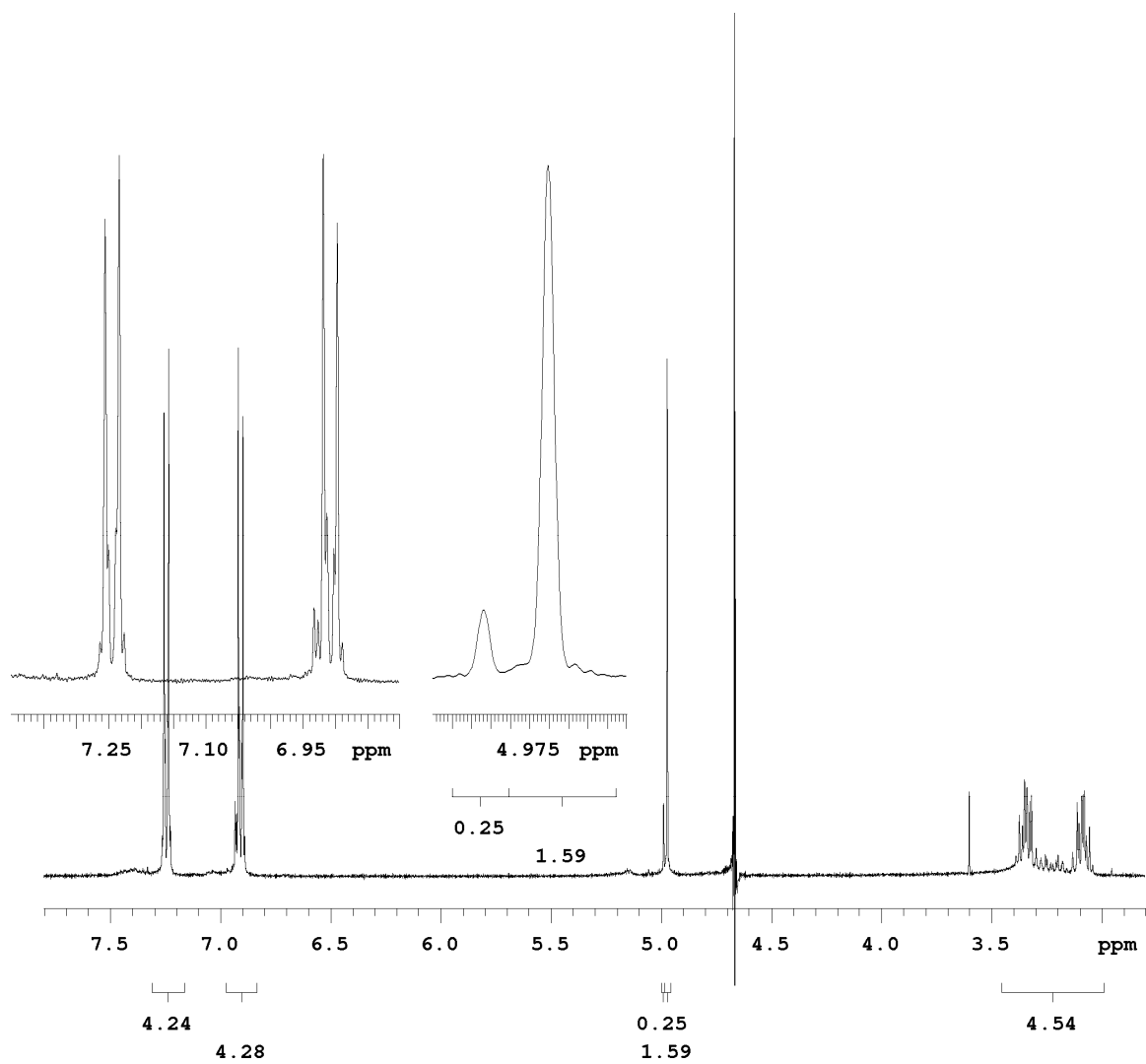


Figure 6. ^1H -NMR spectrum of *p,p*-EDDHA.

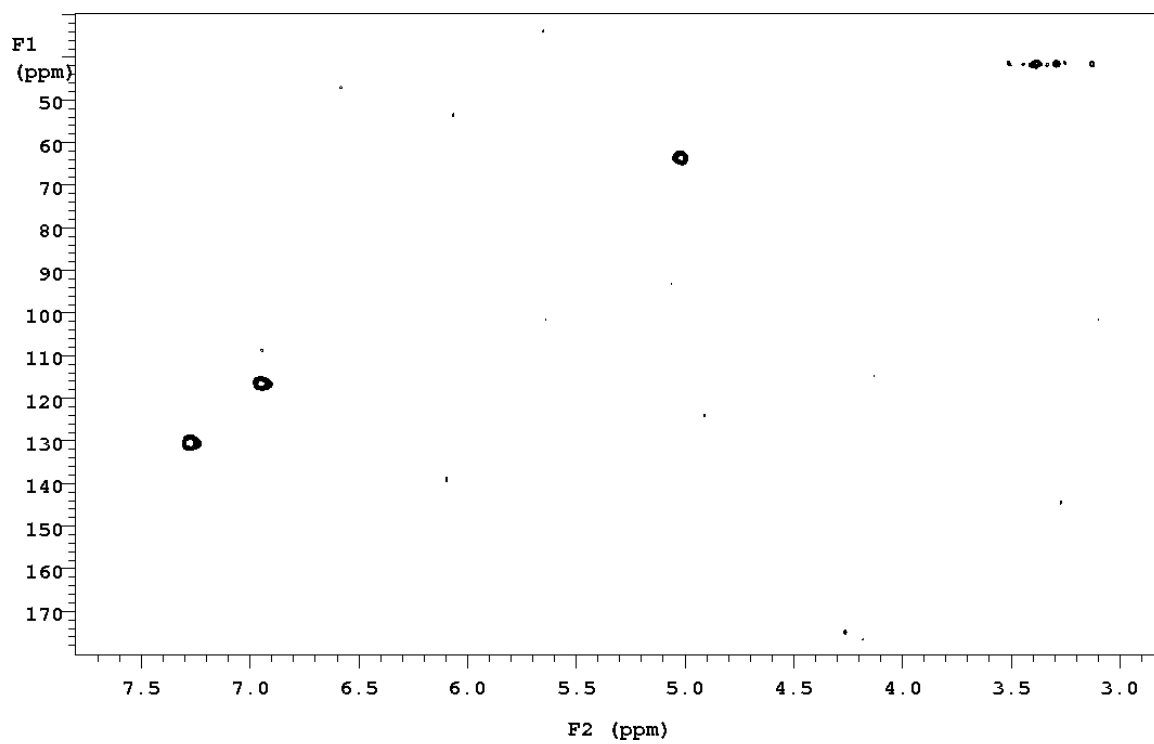


Figure 7. gHSQC spectrum of *p,p*-EDDHA

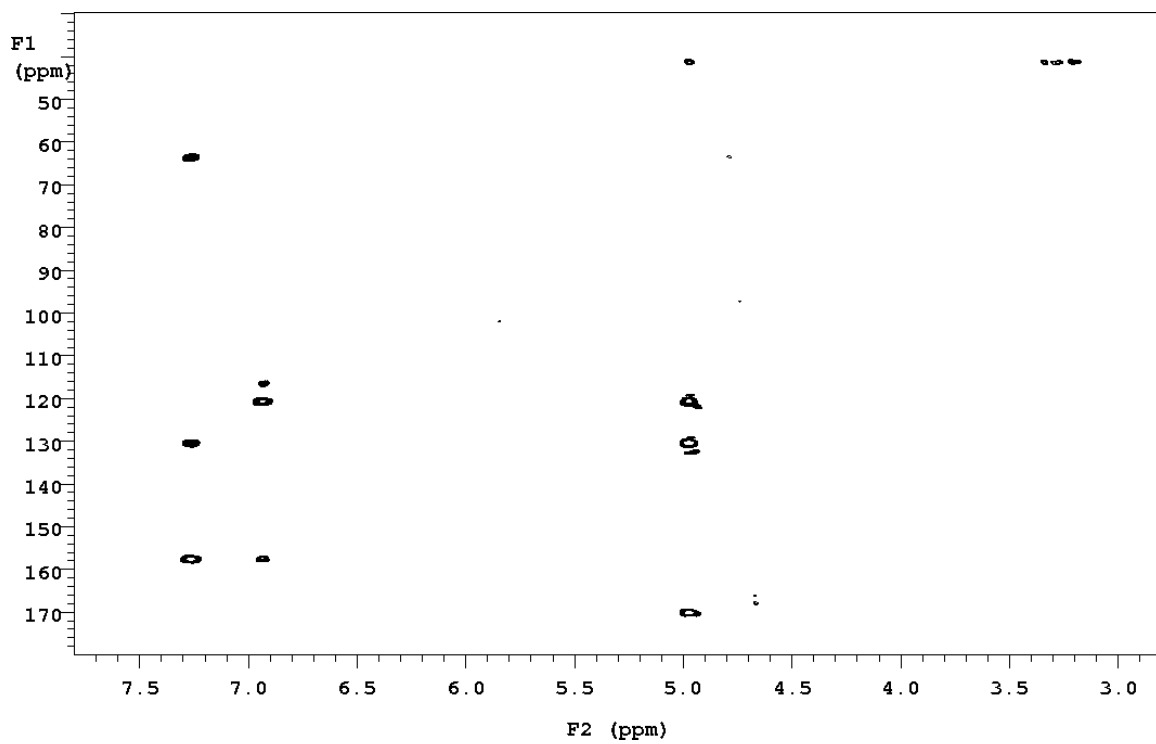


Figure 8. gHMBC spectrum of *p,p*-EDDHA.

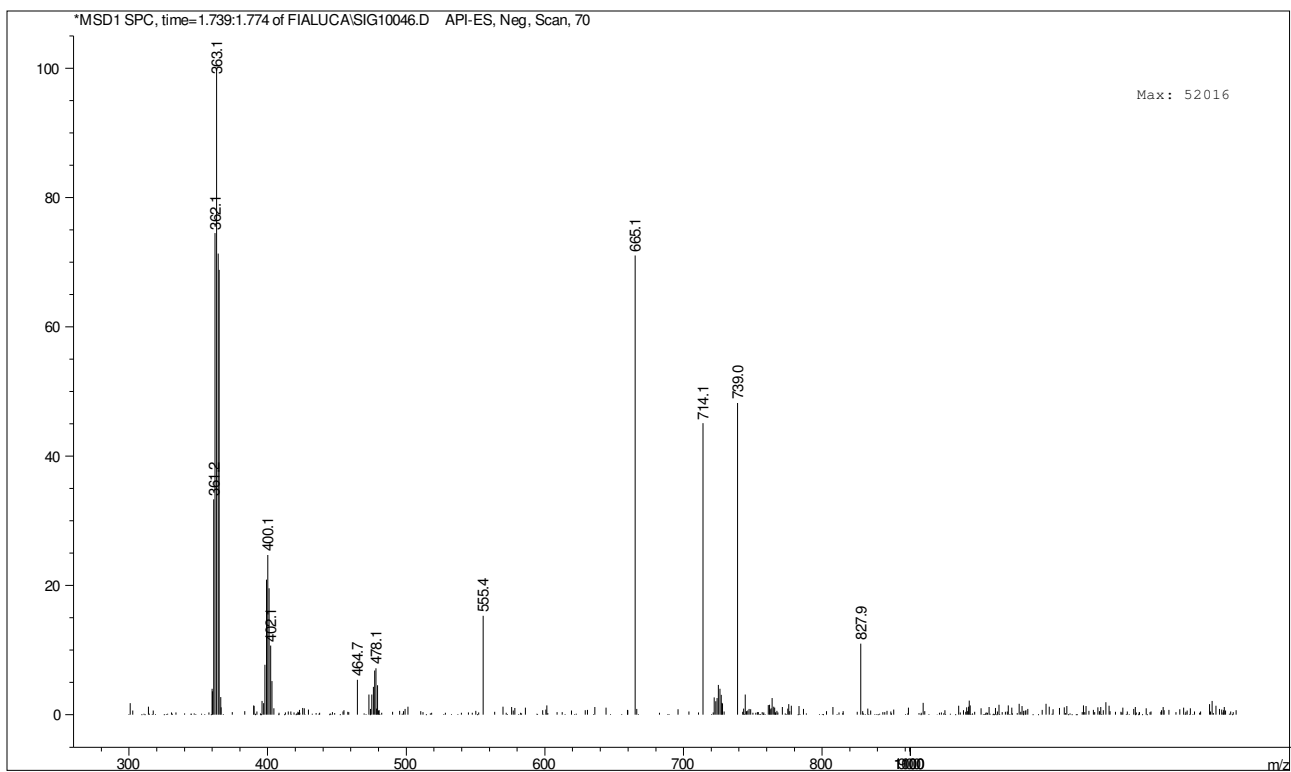


Figure 9. MS of *p,p*-EDDHA.

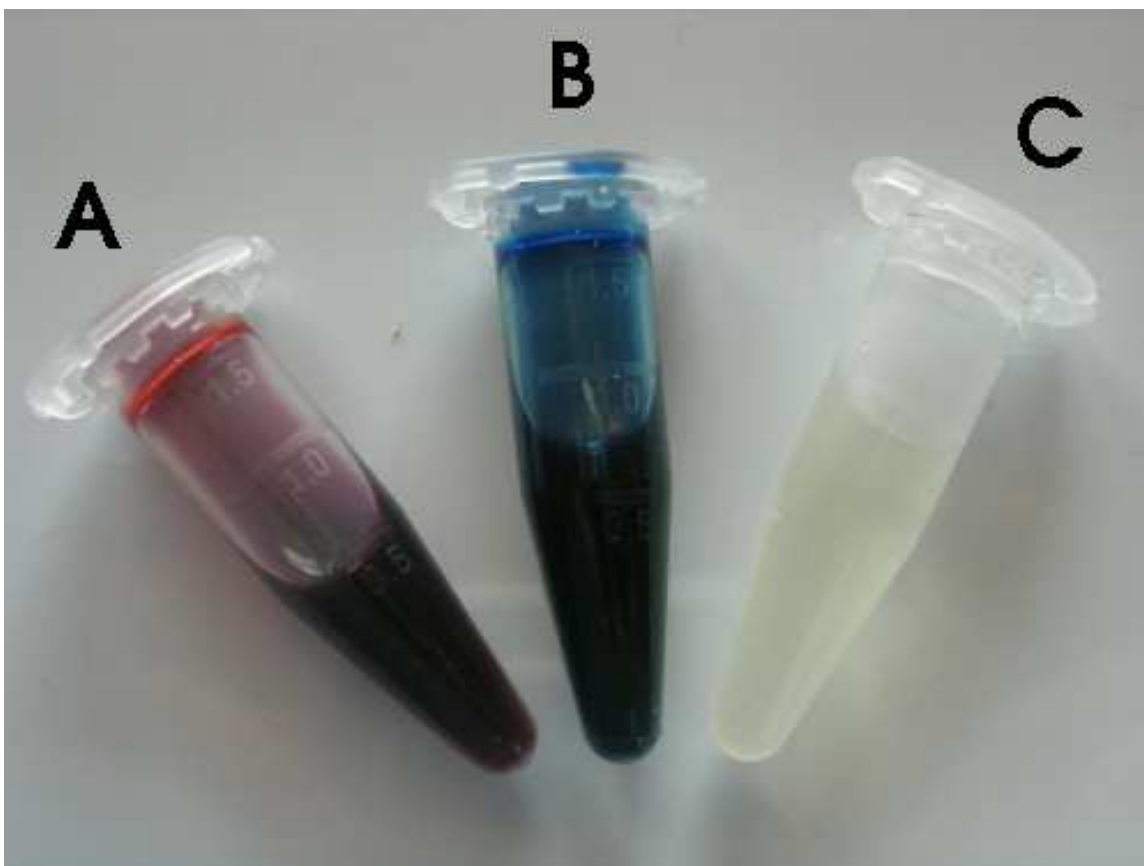


Figure 10. How the color of the solution changes along the deferration procedure: (A) D_2O solution of a fertilizer containing the EDDHA- Fe^{3+} chelate; (B) same as A after addition of a solution of potassium ferrocyanide; (C) same as (B) at the end of the deferration procedure and ready to be analyzed by NMR.