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Identification of pesticide degradation by-products using a new protocol based on QuEChERS extraction and GC-MS/MS methods

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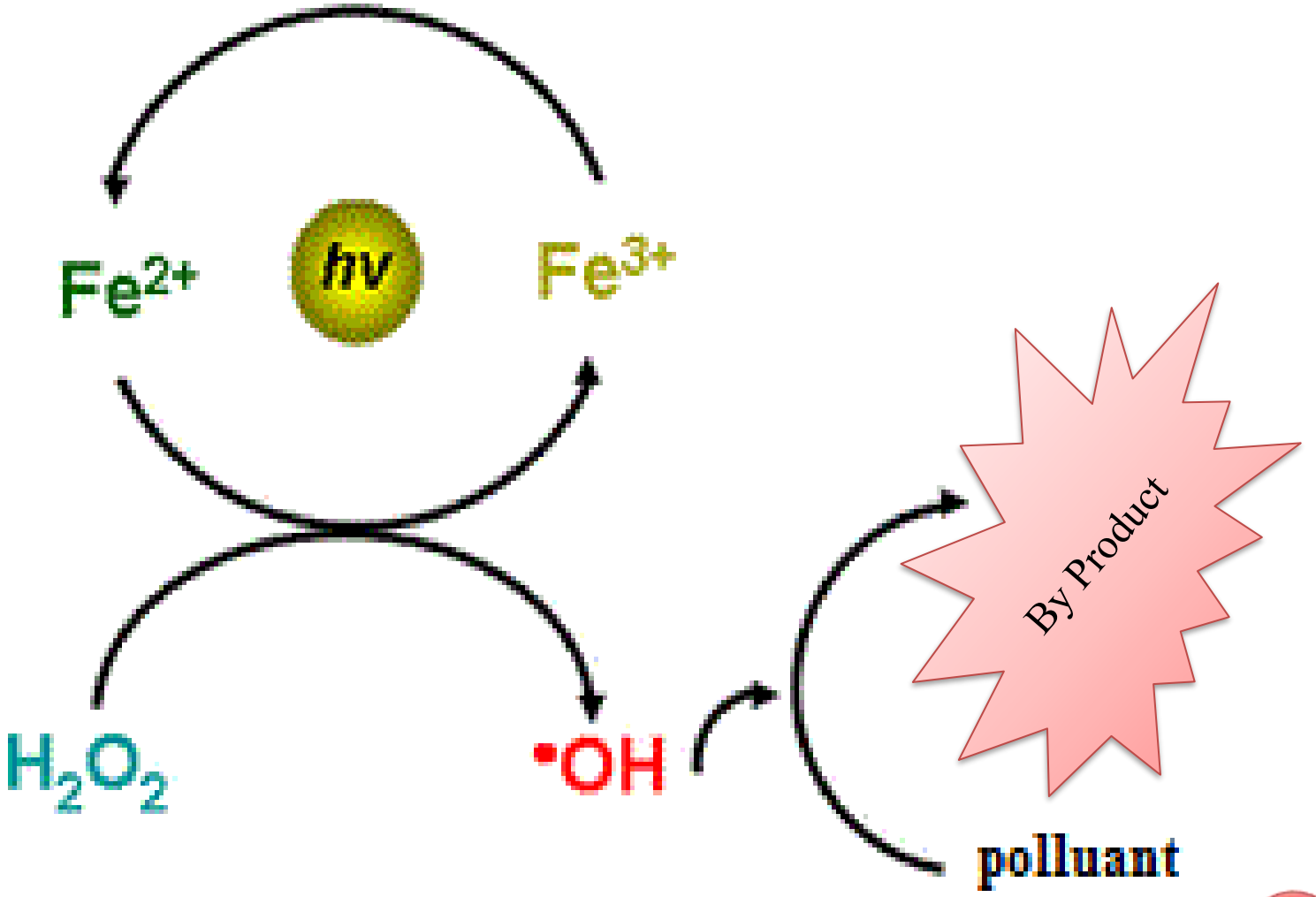
Plan

Introduction

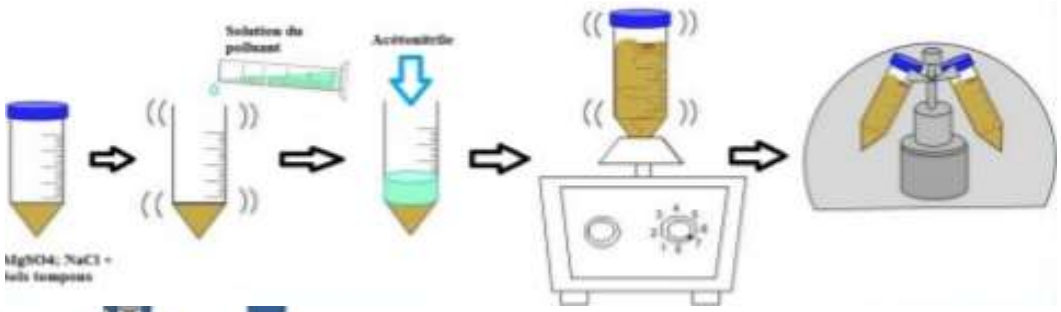


GC-MS/MS analysis

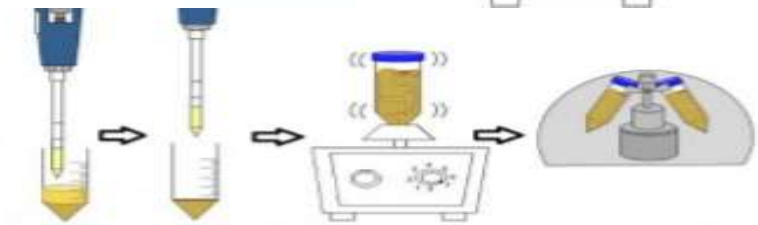
Materiels and methods

QUeCHeRS extraction

Etape 1



Etape 2



Pre concentration

Etape 3

GC-MS/MS analysis

Etape 4

	By-products	Retention time (min)	Molecular weight m/z
1	Triethyl thiophosphate	7.11	198
2	2-Isopropyl-5-ethyl-6-methylprymidine-4-ol	7.49	156
3	2-isopropyl-6-methyl- pyrimidine-4-ol (IMP)	7.77	133
4	Triethyl Phosphate	8.56	182
5	Diazoxon	9.44	137
6	hydroxydiazinon	14.23	178

Conclusion

- *The aims of this study is the identification of the by-products resulting from the degradation of an organophosphorus pesticide (Diazinon) using the photo-Fenton process*
- *Gas phase chromatography coupled with a triple quadrupole mass spectrometry was used for the identification of by -products resulting from the photo-degradation of Diazinon.*
- *QUECheRS extraction (Liq/Liq extraction technique) dispersive solid phase extraction (d-SPE) was performed. The extract was evaporated (pre-concentration method) under a high-purity nitrogen stream.*
- *The GC-MS/MS analysis method combined with the QuEChERS extraction approach and the pre-concentration method showed excellent performance in detecting by-products even at concentrations on the order of* $ng.L^{-1}$
- *Sex by-products were identifier in this work:* ***diazoxon***, ***triethyl phosphate***, ***triethyl thiophosphate***, ***2-isopropyl-5-ethyl-6-methylpyrimidine-4-ol***, ***2-isopropyl-6-methylpyrimidine-4-ol*** *(IMP) and* ***hydroxydiazinon***.

THANK YOU FOR YOUR ATTENTION