



BANYULS
11 - 12
JANV.
2023



EVALUATION DES RISQUES ENVIRONNEMENTAUX LIES AUX PLASTIQUES

Camille LARUE

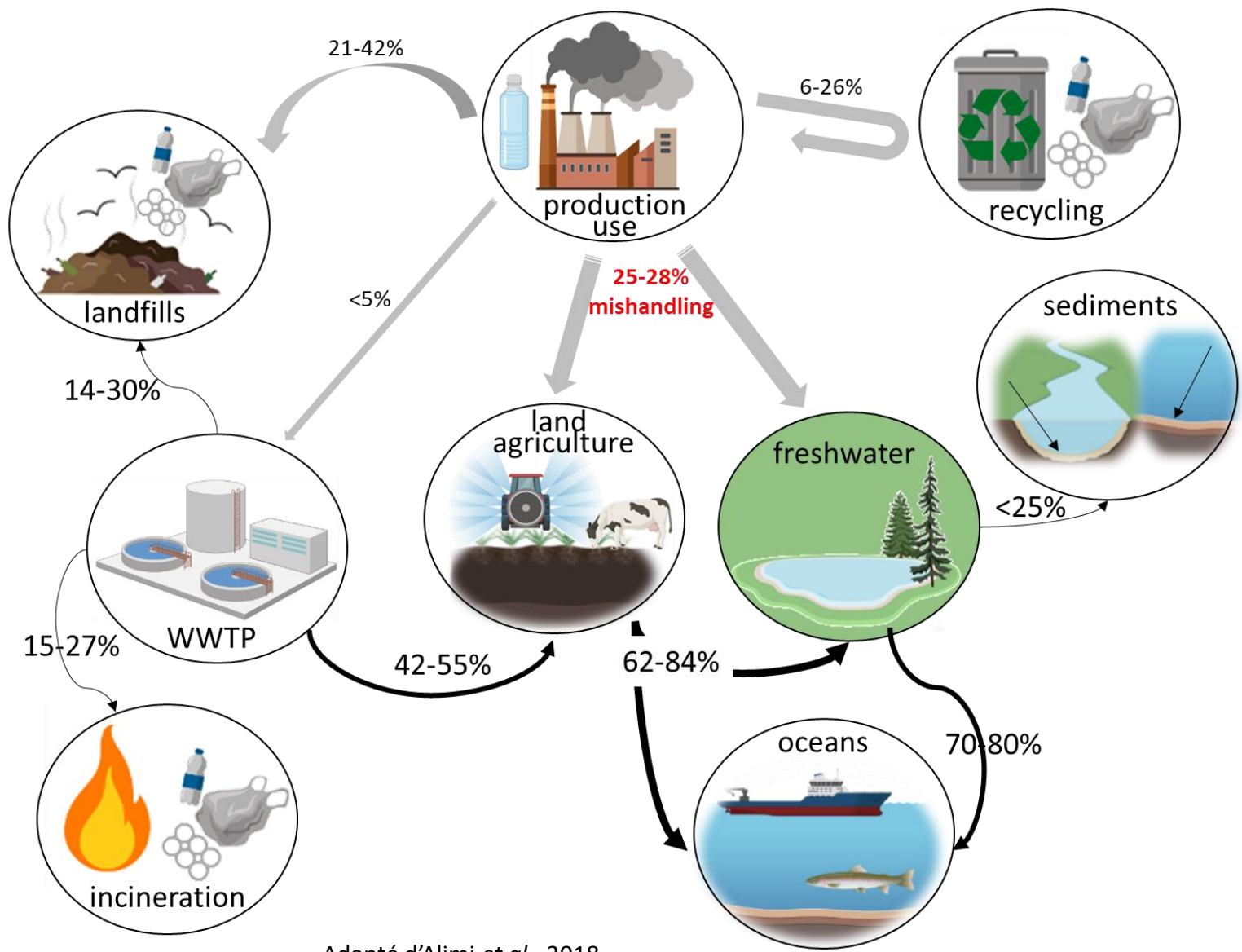
Laboratoire Ecologie Fonctionnelle et Environnement

Toulouse



Laboratoire écologie
fonctionnelle
et environnement

Dissémination dans l'environnement



Adapté d'Alimi *et al.*, 2018

EVALUATION DES RISQUES



=

EXPOSITION

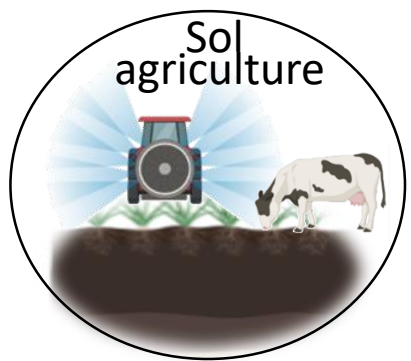


X

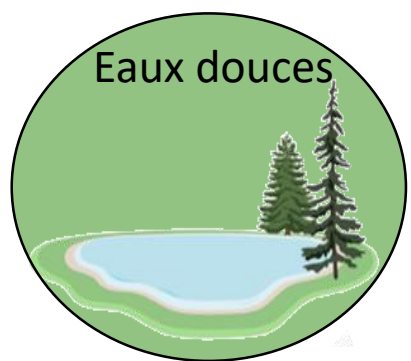
DANGER



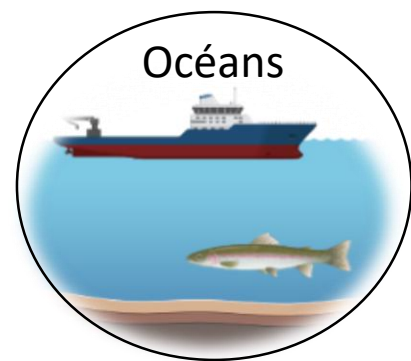
Exposition...



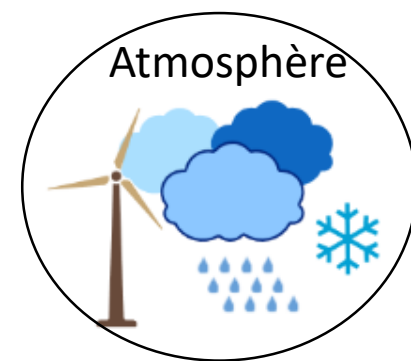
55.5 to 67500 mg/kg



1.56 mg/L



<eaux douces



300 item/m²/jr (extérieur)
>10000 item/m²/jr (intérieur)



[www.aces.edu/blog/topics/crop-production/plastic-mulch-for-vegetable-production-2/]



[www.bbc.com/news/science-environment-43823883]

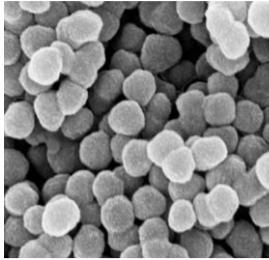


Différentes techniques d'échantillonnage
Différentes techniques de détection
Différentes unités

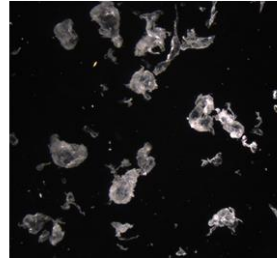


Danger : effet particule

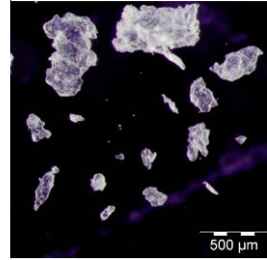
PS sphere
150 nm



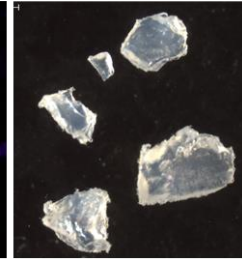
PE fragment
300 µm



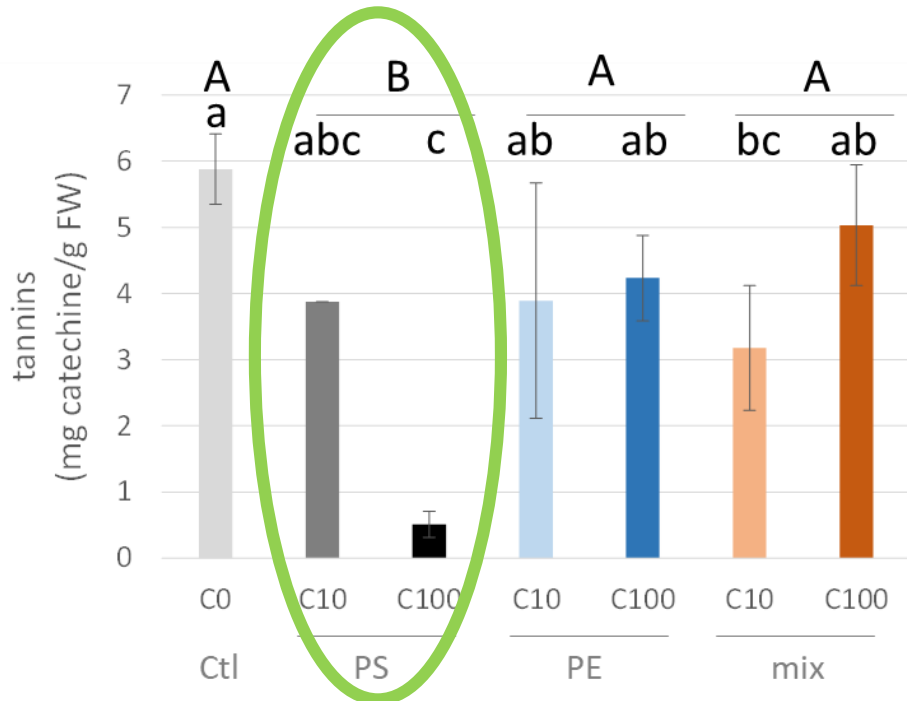
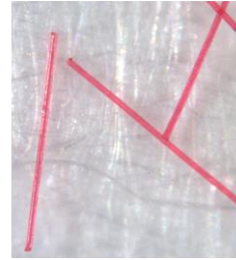
PS fragment
≈ 62 µm



PA fragment
≈ 653 µm



PA fiber
≈ 15 µm x 500 µm

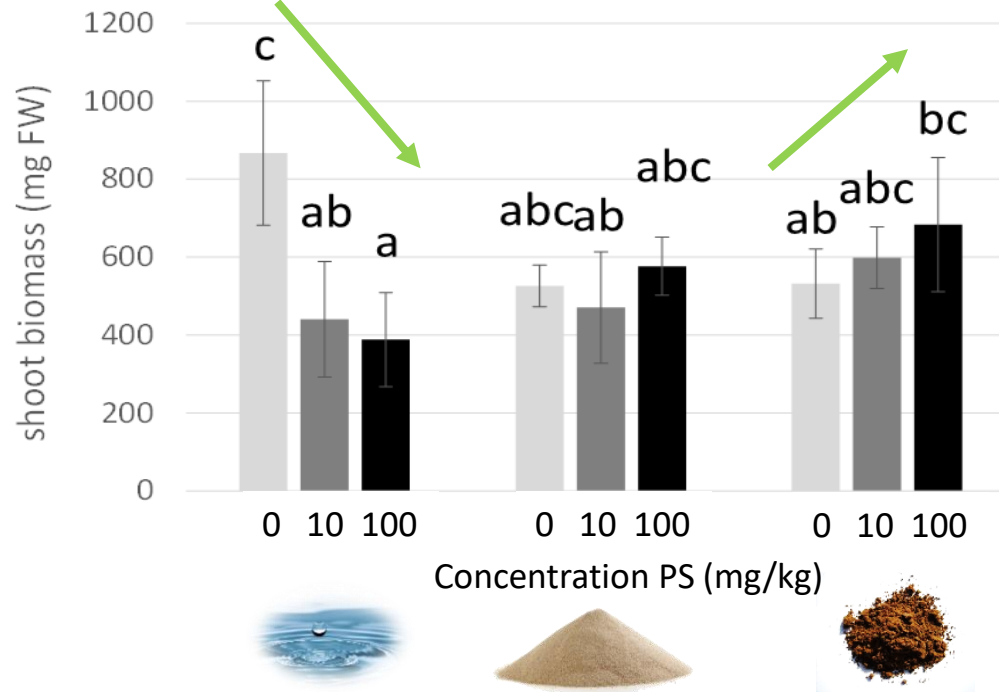
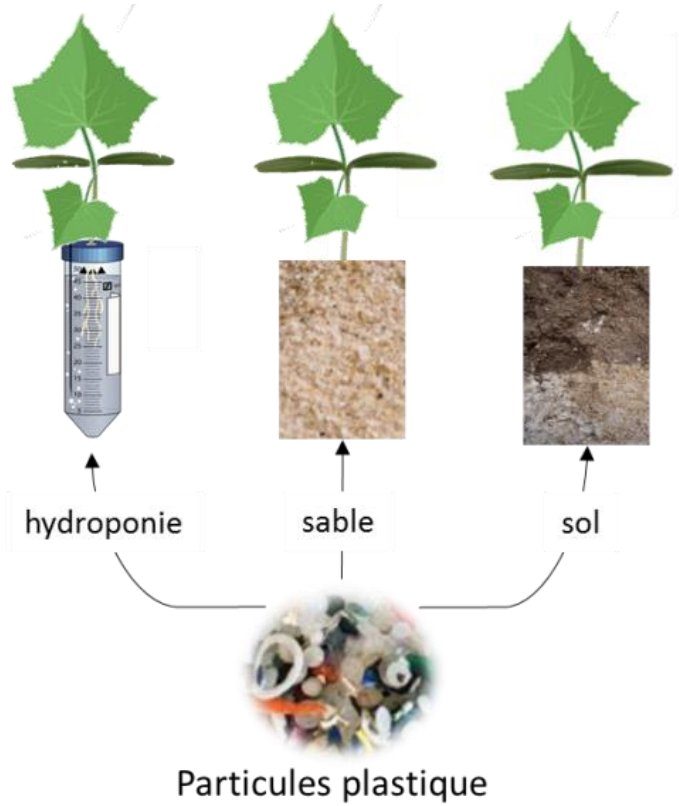


Compréhension
des mécanismes d'action

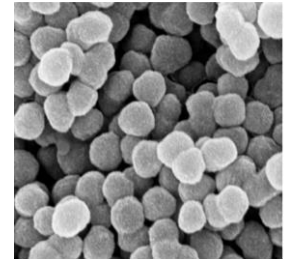


Stage M1 - 2021
Héroïse Chouteau,
Univ Reims

Danger : effet milieu



PS sphere
150 nm



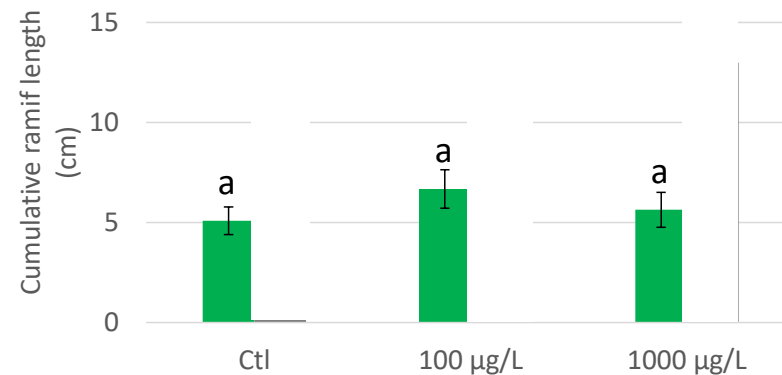
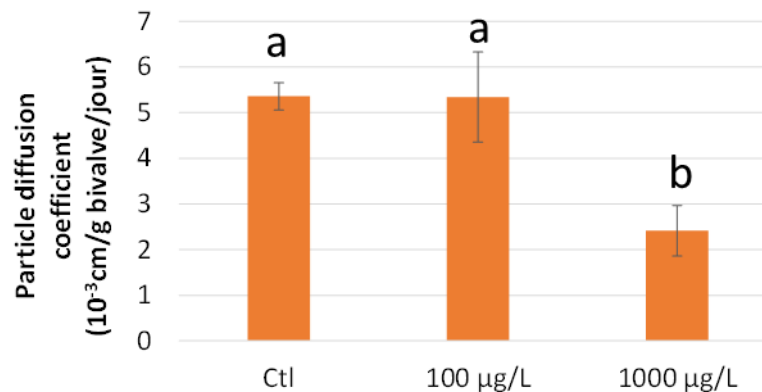
Stage M1 - 2021
Héroïse Chouteau,
Univ Reims

Evaluation des risques en conditions environnementalement pertinentes

Danger : effet organisme et interactions

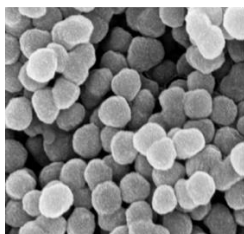


■ seul
■ en interaction



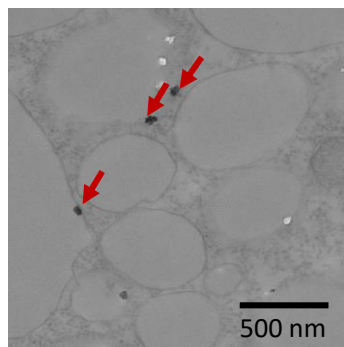
Stage M2
Bastien Cheminade,
2020, Sorbonne Univ

PS sphere
150 nm

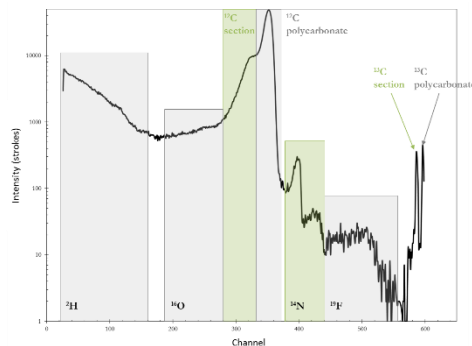


Importance de prendre en compte les interactions trophiques

Verrou: caractérisation matrices complexes

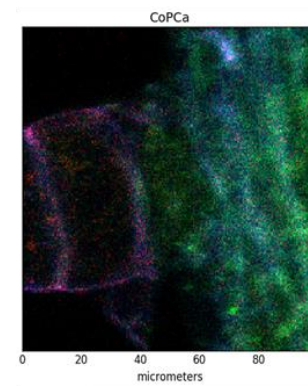


Microscope
(CLSM, TEM)



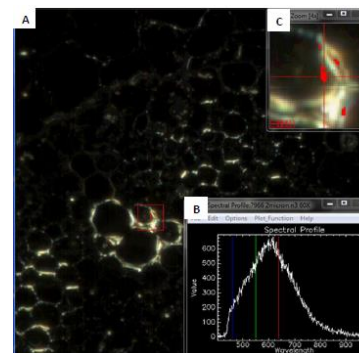
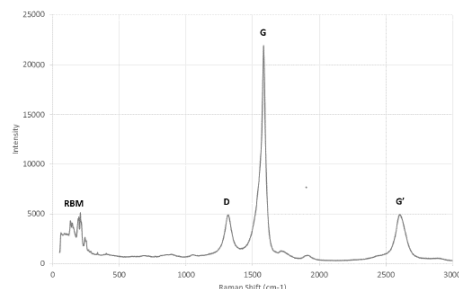
Détection
isotopique
(IRMS, μNRA)

Particules « dopées »
(μX-ray fluorescence, ICP)



Microscopie hyperspectrale

Spectroscopie
vibrationnelle
(μRaman, μFTIR)



Thèse Clarisse Liné
2016-2019



Clarisse Liné
(PhD 2016-2019)



Bastien Cheminade
(2020 – Univ. Sorbonne)



Franck Gilbert
DR CNRS



Alexandra Ter Halle
Magali Albignac



Héloïse Chouteau
(2021 – Univ. Reims)



Jordi Pous Miralles
(2021 – Univ. Oviedo)



Arthur Compin
IR CNRS



Mohammad Wazne
Florian Mermillot-Blondin
Laurent Simon



Caroline Lise
(2021 – Univ. Toulouse)



Meïssa Jellibi
(2021 – Univ. Toulouse)



Maialen Barret
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Denise Mitrano