affinisep

Picolinic

Application Note

Determination of Aminopyralid, Clopyralid and Picloram in compost and water

Water analysis

Introduction

Aminopyralid, Clopyralid and Picloram are herbicides that belong to picolinic acid or pyridine carboxylic acid family herbicides.
They are highly soluble in water and have slow degradation processes. In addition, they are very mobile in soils and have a high potential to leach to ground water. So, the main environmental risks for these molecules are the contamination of surface and ground waters and the damage of non target plants.
In the compost, the persistence of these molecules can affect compost quality and it might not meet the needs of consumers.
This application note shows the use of **AFFINIMIP®SPE Picolinic herbicides** to clean-up compost and water samples prior to analysis by UV.

Protocol of purification

Sample preparation

5g of compost sample and 100mL water are shaked during 60 minutes. Centrifuge at 3000g for 10 min and then filter the solution with a 4-7µm filter. This solution is used as the loading solution.

Purification with a 3mL/60mg AFFINIMIP® SPE Picolinic Herbicides cartridge

EQUILIBRATION
1. **2mL Acetonitrile**
2. **1mL Water**

LOADING
3mL of loading solution

WASHING OF INTERFERENTS (W1)
1mL Water

DRYING BY APPLYING VACUUM 1 MIN

WASHING OF INTERFERENTS (W2)
1mL Acetonitrile

ELUTION
3mL 98/2 Ethyl acetate / Trifluoroacetic acid

The elution fraction was then evaporated and dissolved in the mobile phase before HPLC analysis.

Results

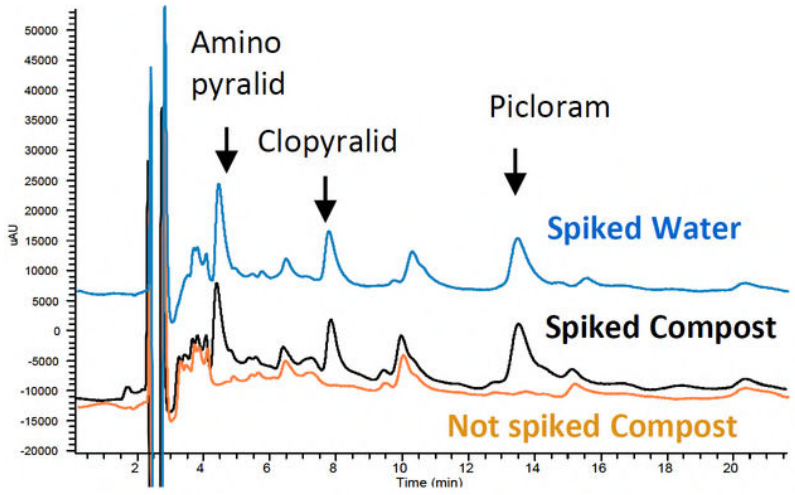

Figure 1. UV chromatogram of compost or water spiked with Aminopyralid, Picloram and Clopyralid after **AFFINIMIP®SPE Picolinic Herbicides** clean-up

Analytes	Recoveries % for Water	Recoveries % for Compost	% RSDr compost
Aminopyralid	95	84	3
Clopyralid	109	120	4
Picloram	88	89	3

Table 1. Recovery and repeatability of Picloram, Aminopyralid and Clopyralid in compost (n=3) and after **AFFINIMIP® SPE Picolinic Herbicides** Clean-up.

Conclusion

A very easy protocol for the determination of aminopyralid, clopyralid and picloram has been evaluated and described with recovery yields higher than 80% in water and composts. The method shows an excellent repeatability and can easily be implemented in any laboratory with HPLC – UV or MS equipment.

- **Very easy protocol**
- **Good Recovery (>80%)**
- **Good repeatability (RSDr <5%)**

Product references

- **AFFINIMIP® SPE Picolonic herbicides**

Catalog number: **FS115-03** for 50 cartridges 3mL

Catalog number: **FS115-03B** for 50 cartridges 6mL