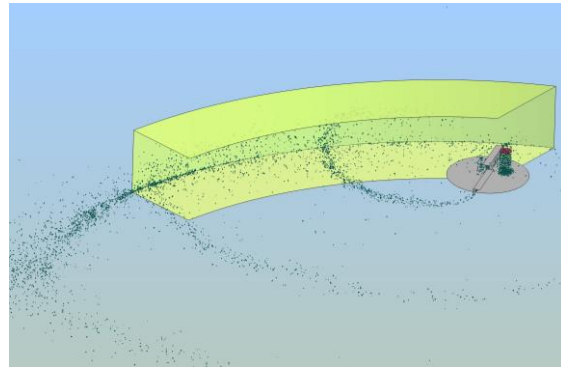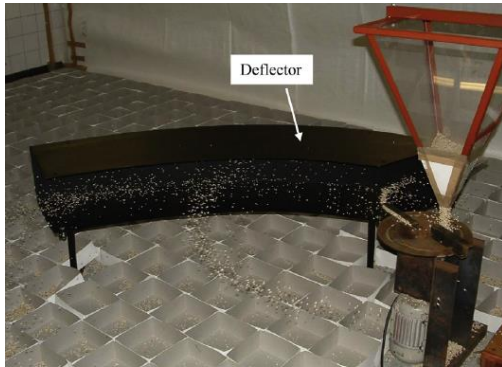# Comparison with experimental and numerical results
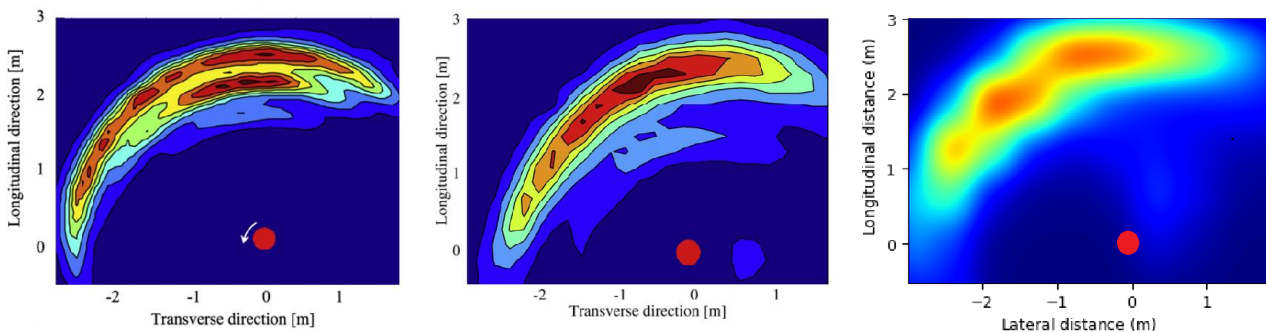
Validation Case Study 1

Experimental and numerical results obtained by Coetzee & Lombard (2011) were compared with SpreadDEM simulation.
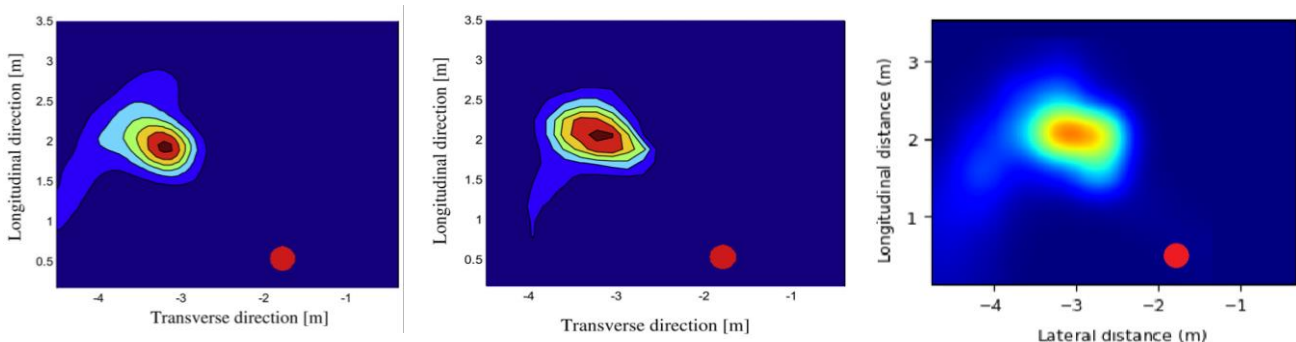

Experimental setup (left) and spreader geometry used for validation purpose (right).

Without deflector

Numerical (left) and experimental results (centre) provided by Coetzee & Lombard (2011), and fertilizer pattern obtained with SpreadDEM (right). Configuration without deflector.

With deflector

Numerical (left) and experimental results (centre) provided by Coetzee & Lombard (2011), and fertilizer pattern obtained with SpreadDEM (right). Configuration with deflector.

Coetzee C.J., Lombard S.G., (2011). Discrete element method modelling of a centrifugal fertiliser spreader. Biosystems Engineering, 109 (4), 308-325.

Verification and validation procedures (V&V). Verifying that our software meets specifications and that it fulfils its intended purpose.

Comparison with experimental results

Validation Case Study 2

In collaboration with IRSTEA (National Research Institute of Science and Technology for Environment and Agriculture) two different standard fertilizers were tested using SpreadDEM for a given spreading disk.
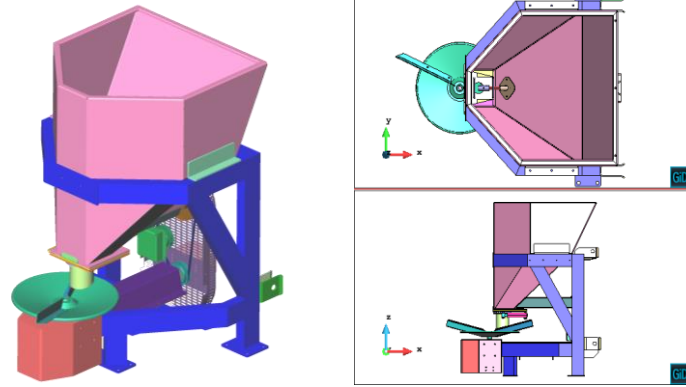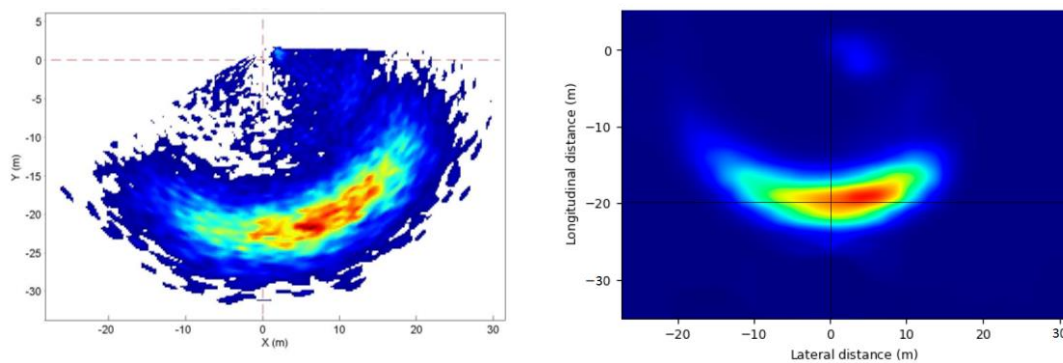

Centrifugal spreader geometry used for validation purpose. Provided by IRSTEA.

KornKali fertilizer
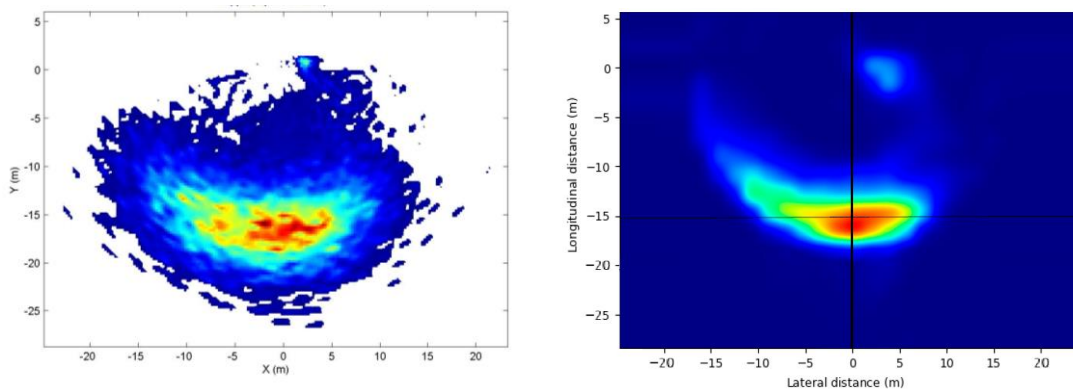
Experimental results provided by IRSTEA (left) and fertilizer pattern obtained with SpreadDEM (right).

Calcium ammonitrate 27% (CAN)

Experimental results provided by IRSTEA (right) and fertilizer pattern obtained with SpreadDEM (left).

Verification and validation procedures (V&V). Verifying that our software meets specifications and that it fulfils its intended purpose.