Postdispersal seed predation ranged between 19 to 84% per week following a species preference rank

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Postdispersal seed predation may have strong impacts on the demography of annual plants[1]. If this phenomenon is well-known in tropical and woody systems, there is no information about weed seed predation in French agroecosystems.

Material & Methods

To quantify seed loss due to predation, seeds of 7 contrasted weed species + plastic globules were glued on sandpaper cards[2] and pinned on the soil surface of an organic winter wheat.

7 weed + 1 artificial species = 36 unique species pairs
* 15 reps. + 2 controls = 612 cards (2*25 seeds each)

Double control for accidental seed losses:
1) Seed cards placed under a narrow wire mesh
2) Presentation of dummy seeds (plastic globules)

Results

Seed predation was significantly higher than removals of plastic globules and seed losses under the wire mesh.
Seed predation differed among the tested species (Wilcoxon \( \chi^2 = 381; df = 7; p < 0.0001 \)).
("species preference rank", Figure)

High seeds removal rates (19-84%) suggest that:
1) Weed seeds may constitute an important food resource for animals in the agro-ecosystem.
2) Seed predation may be an important factor shaping weed population dynamics and community composition of arable weeds.

So, to make optimal use of seed predation for reducing weed infestation in arable farming, research should focus on the mechanisms causing variability in predation.