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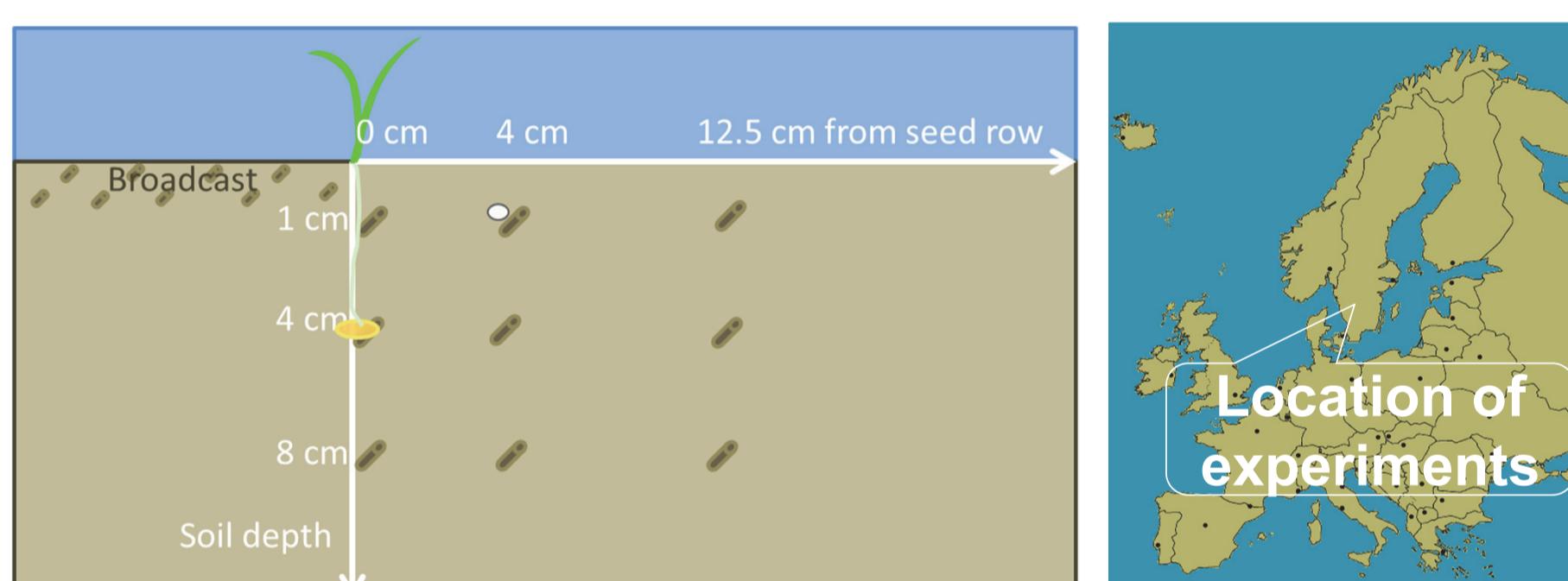
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# Optimal placement of pelleted organic fertilizer in spring oat

**Placement of organic fertilizer close to the crop row and incorporation deeper in the soil can improve yield and reduce weed biomass compared to broadcasting and fertilizing shallowly between rows.**

## Materials and methods

The effects on crop nitrogen uptake, grain yield and weed abundance of placing pelleted meat bone meal (MBM) at different soil depths and at different distances from the seed row was tested in two field experiments in Sweden.



Nine different placements of pellet (●) from seed (○) were compared with broadcasting, no fertilization and mineral N fertilizer (○).



Seeds and pellets were placed at certain depths by knocking down iron plates.



The treatments were performed in 0.7 m<sup>2</sup> plots randomised within four blocks.



Weeds were counted twice and harvested at ear emergence.



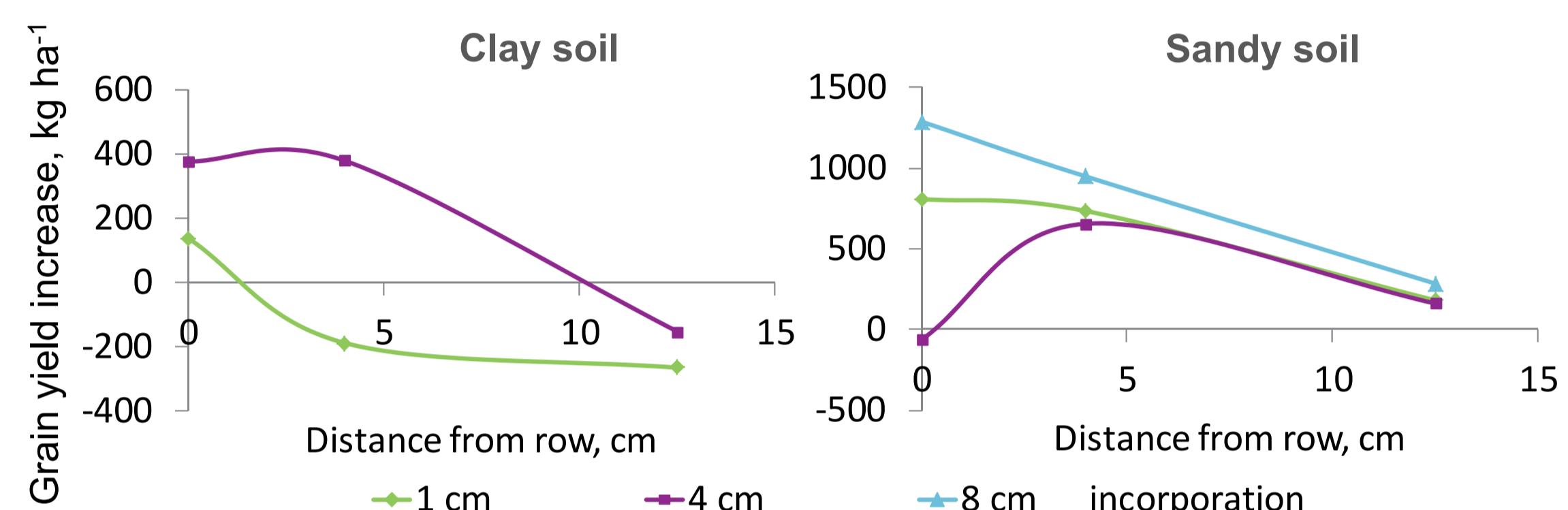
The two middle rows were cut at ripening and N in straw and grains measured.

## Results

### Grain yield

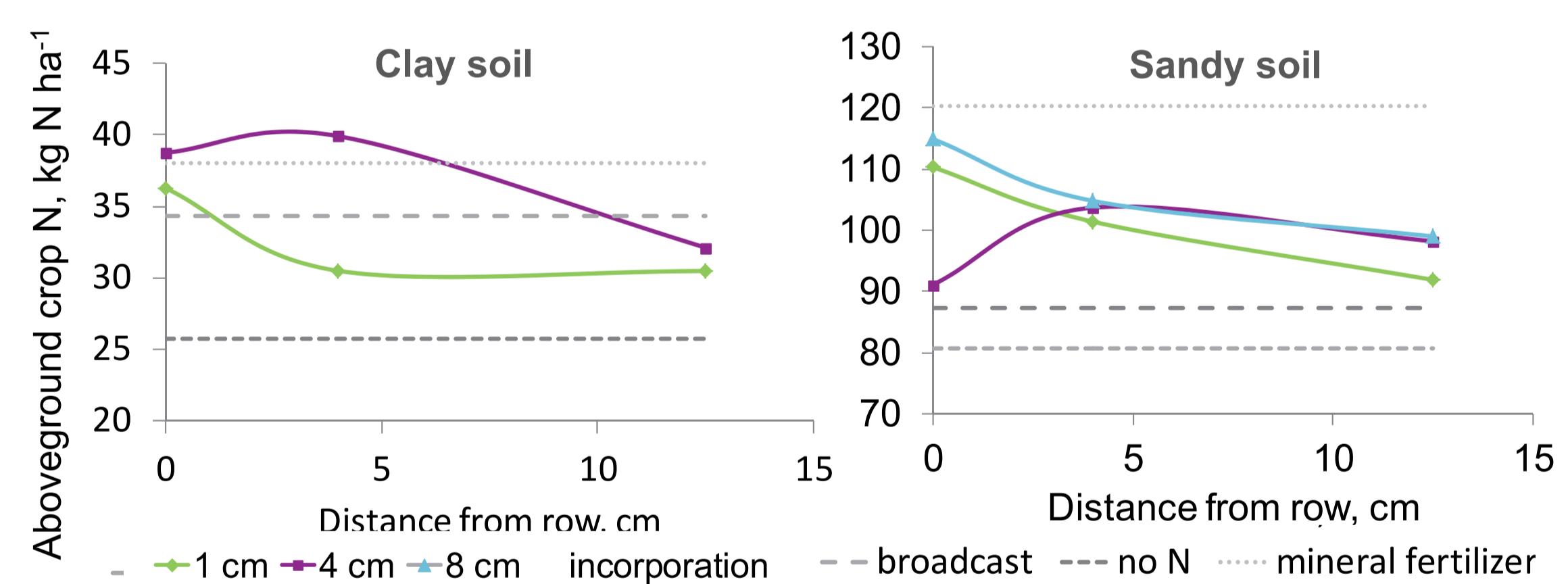
Increase with different placement compared to broadcast.

Both on the clay soil and the sandy soil, there was a tendency for higher grain yield the closer to crop row ( $p=0.06$ ) and the deeper in the soil ( $p=0.06-0.07$ ) the pellets was placed.



### Aboveground crop nitrogen

Aboveground nitrogen was much higher on the sandy soil than on the clay soil. The differences between treatments were similar as for grain yield.



### Weeds

On the clay soil, the weed biomass was significantly higher in two treatments, one with broadcasting and one with placement far from the crop row. On the sandy soil, there were no significant differences between treatments in weed biomass.

