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Impact of Autumn (Fall) Dormancy Rating on Growth and Development of Seedling Lucerne

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Publication details

This presentation was made at the 78th annual New Zealand Grasslands Conference held at Caroline Bay Hall, Timaru 2-4 Nov 2016.

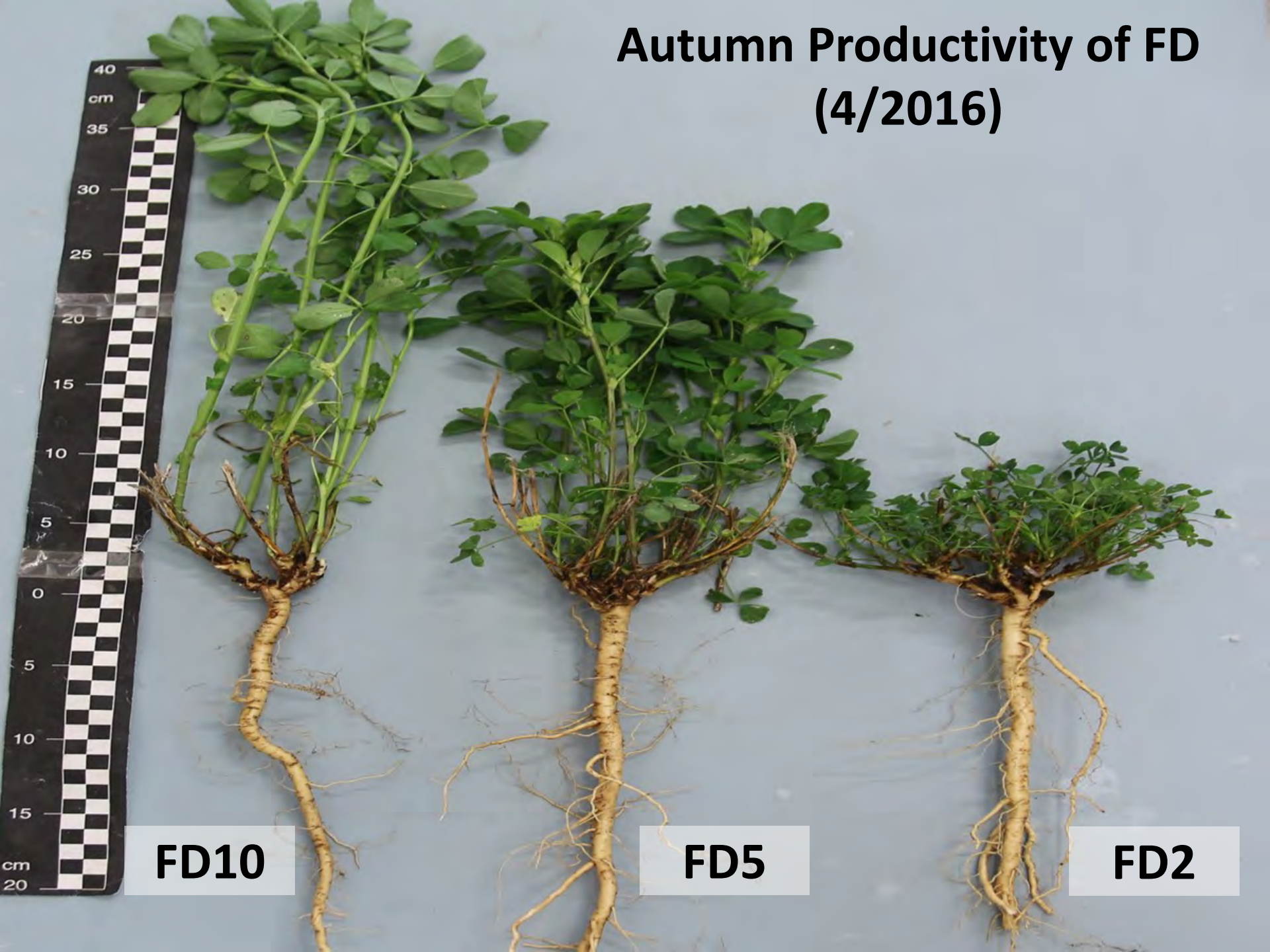
It is associated with the following publication:

Ta, H.T., Teixeira, E.I., Moot, D.J. 2015 Impact of autumn (fall) dormancy on growth and development of seedling lucerne. Journal of New Zealand Grasslands 78: 169-176.

Research Objective

Describe the influence of FD on DM production and phenological development during the seedling phase.

Autumn Productivity of FD (4/2016)

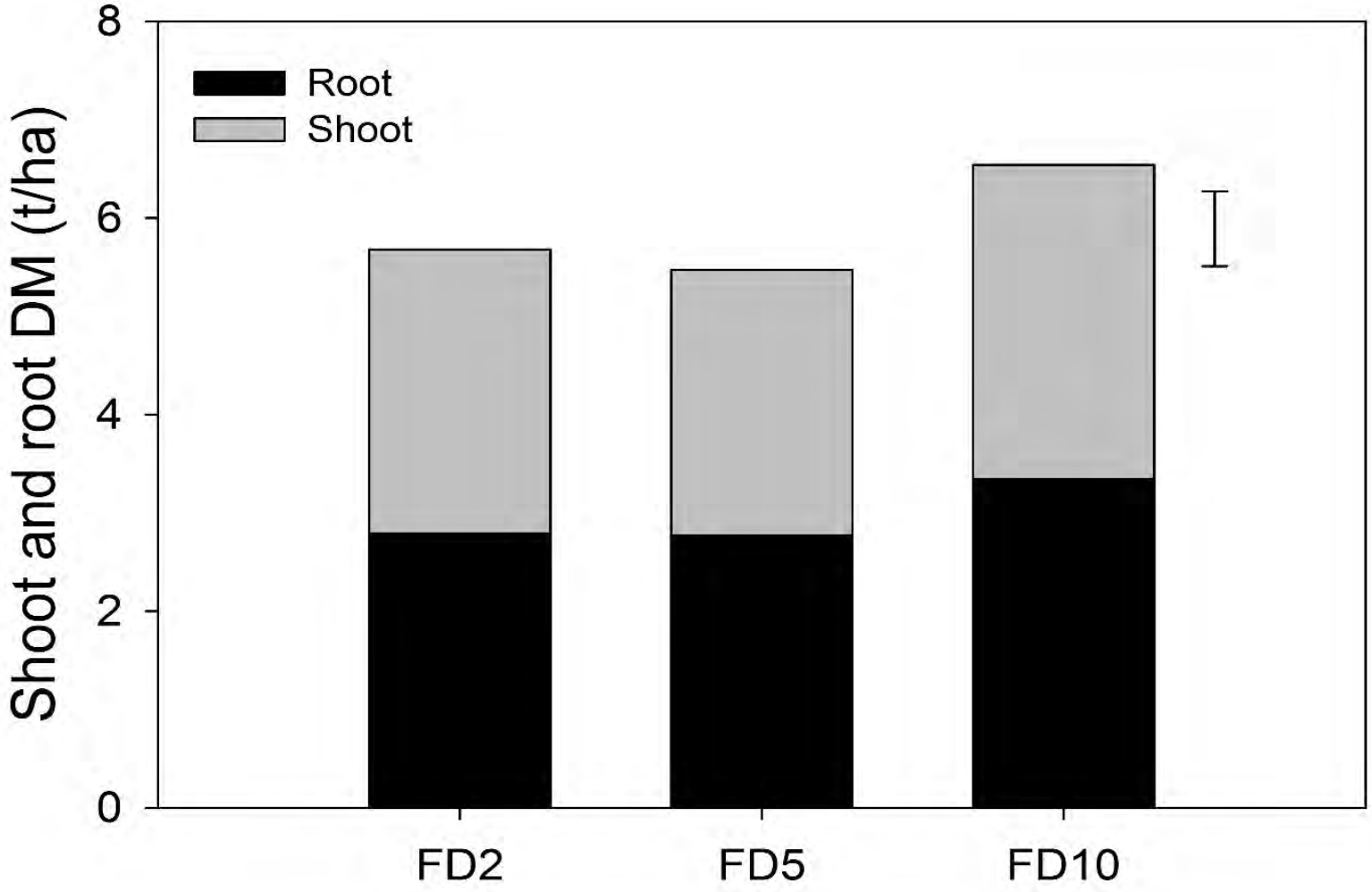


Treatment and Design

- Three genotypes with contrasting FD
    - FD2; a dormant genotype
    - FD5; a semi-dormant genotype
    - FD10; a non-dormant genotype
- RCB with 4 replicates
- Irrigated after establishment

250 plants/m^2

Total DM Yield



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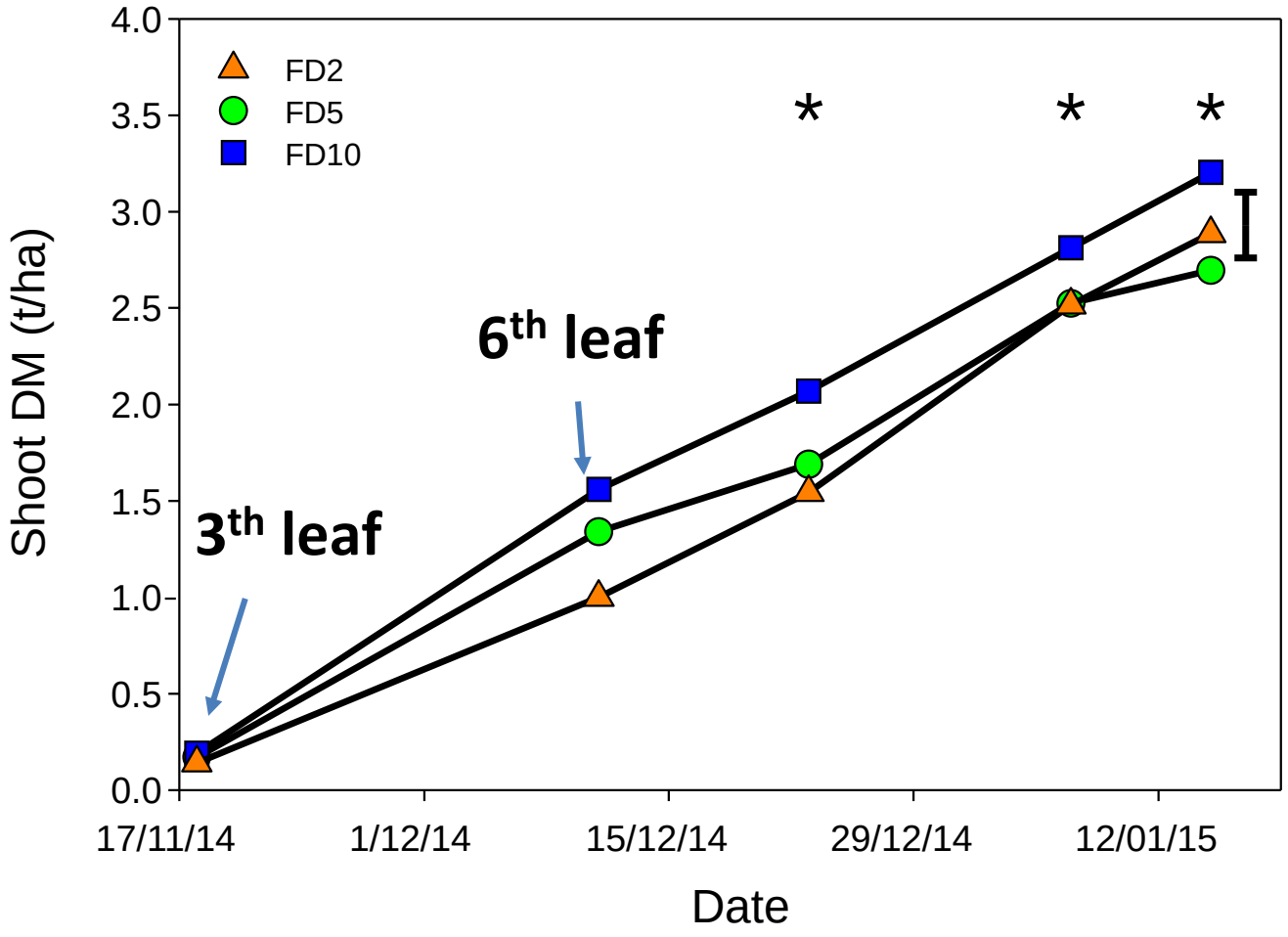
Shoot DM accumulation



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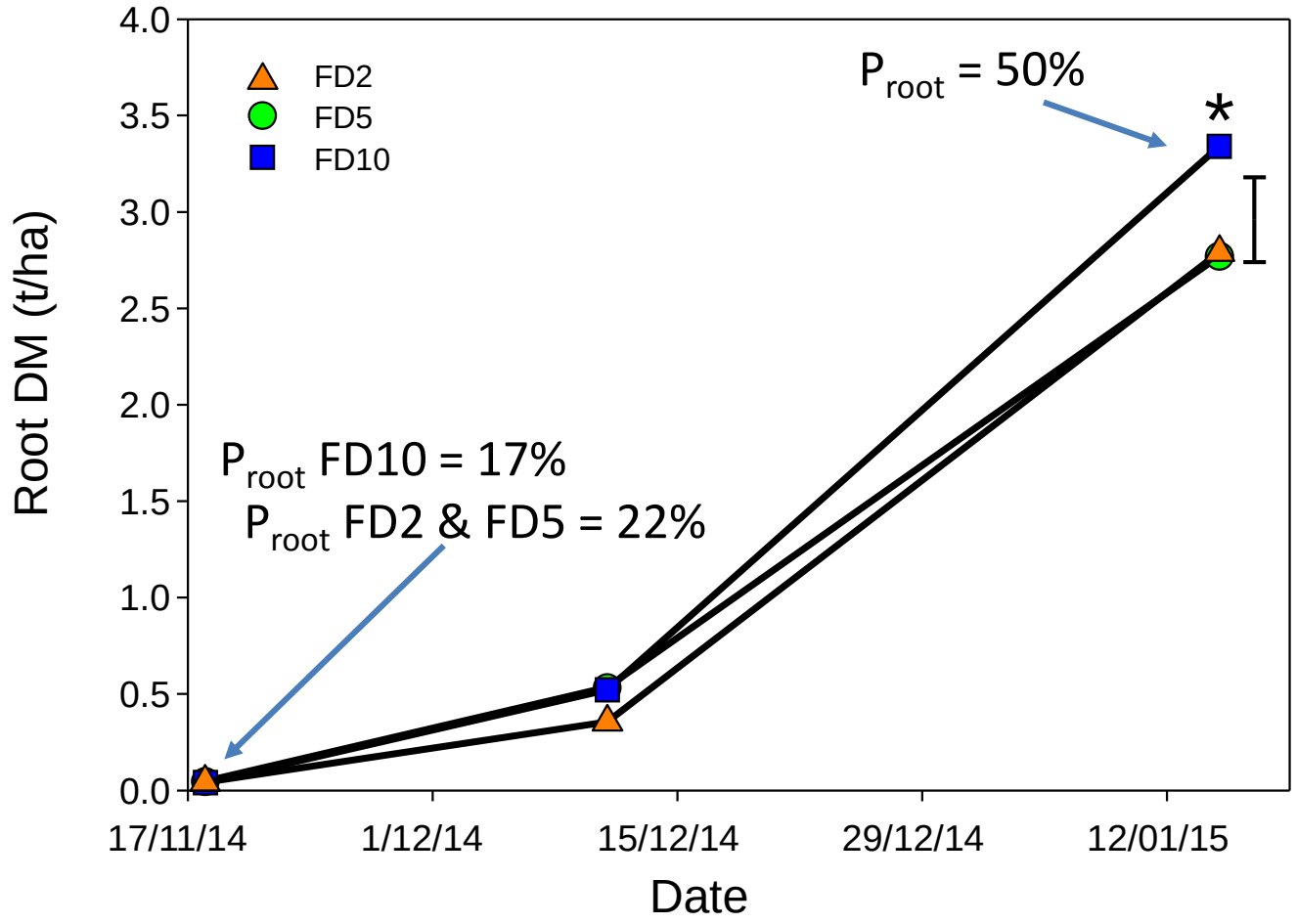
Root DM



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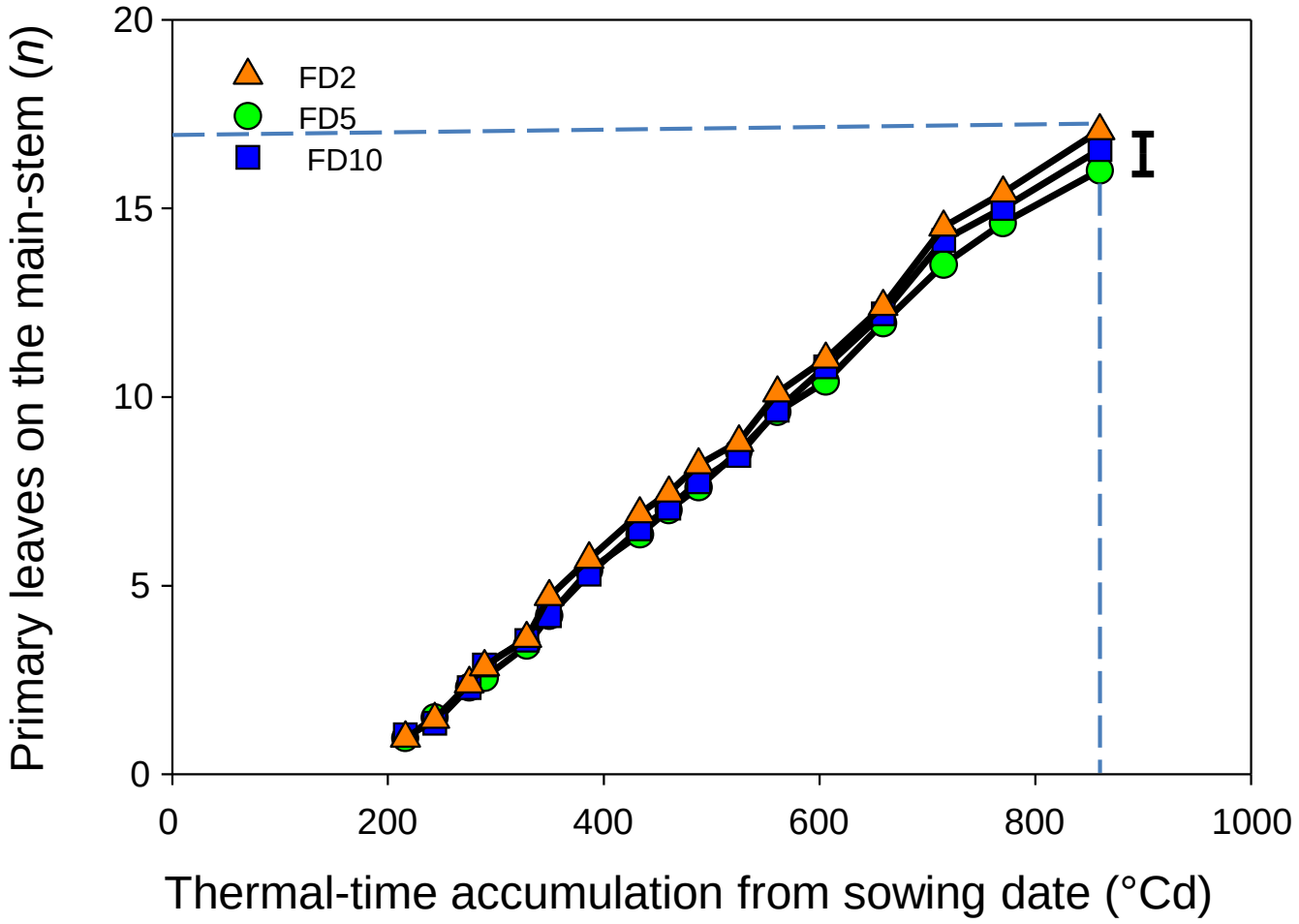
Phyllochron = 52^0Cd/leaf



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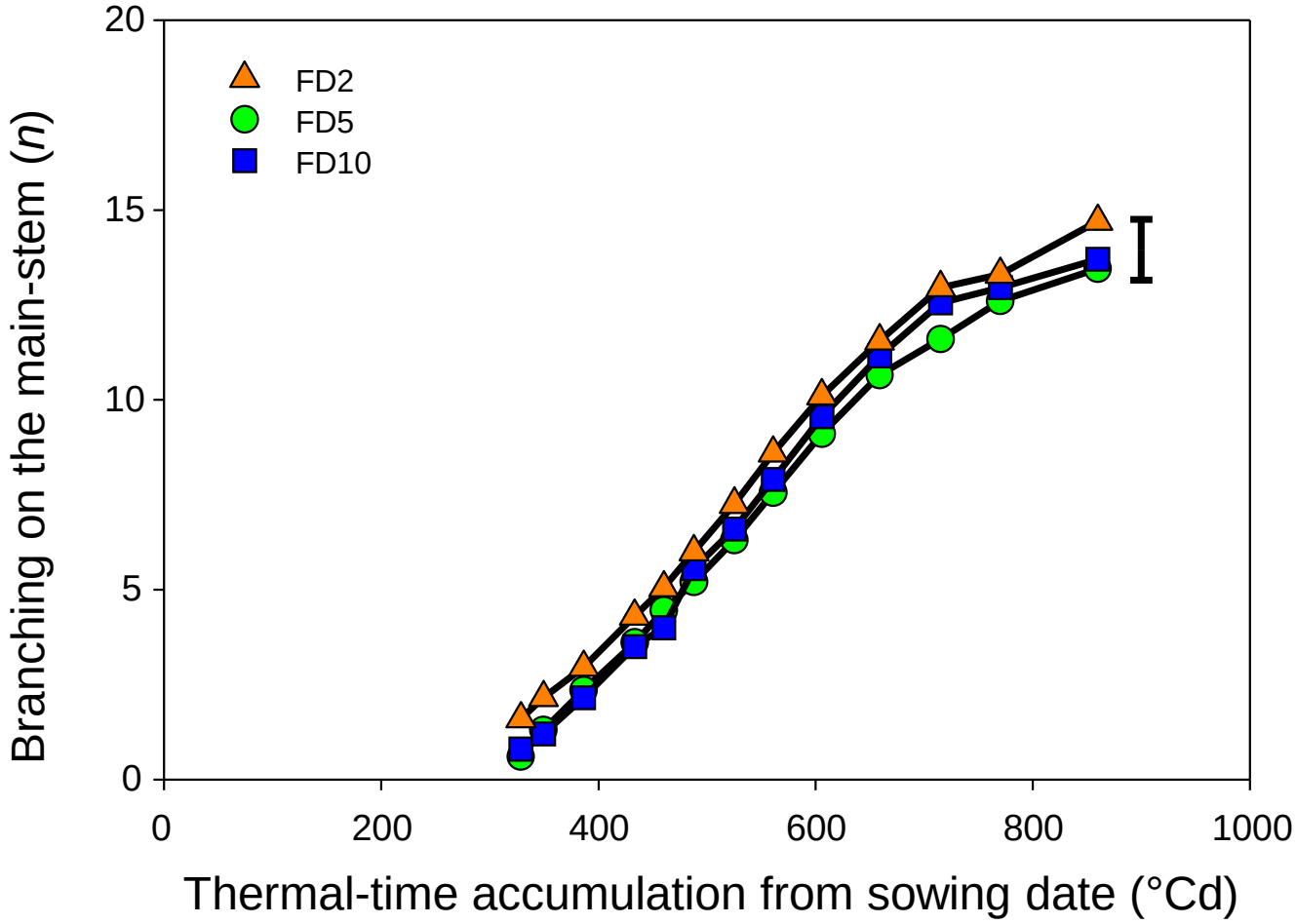
Branching



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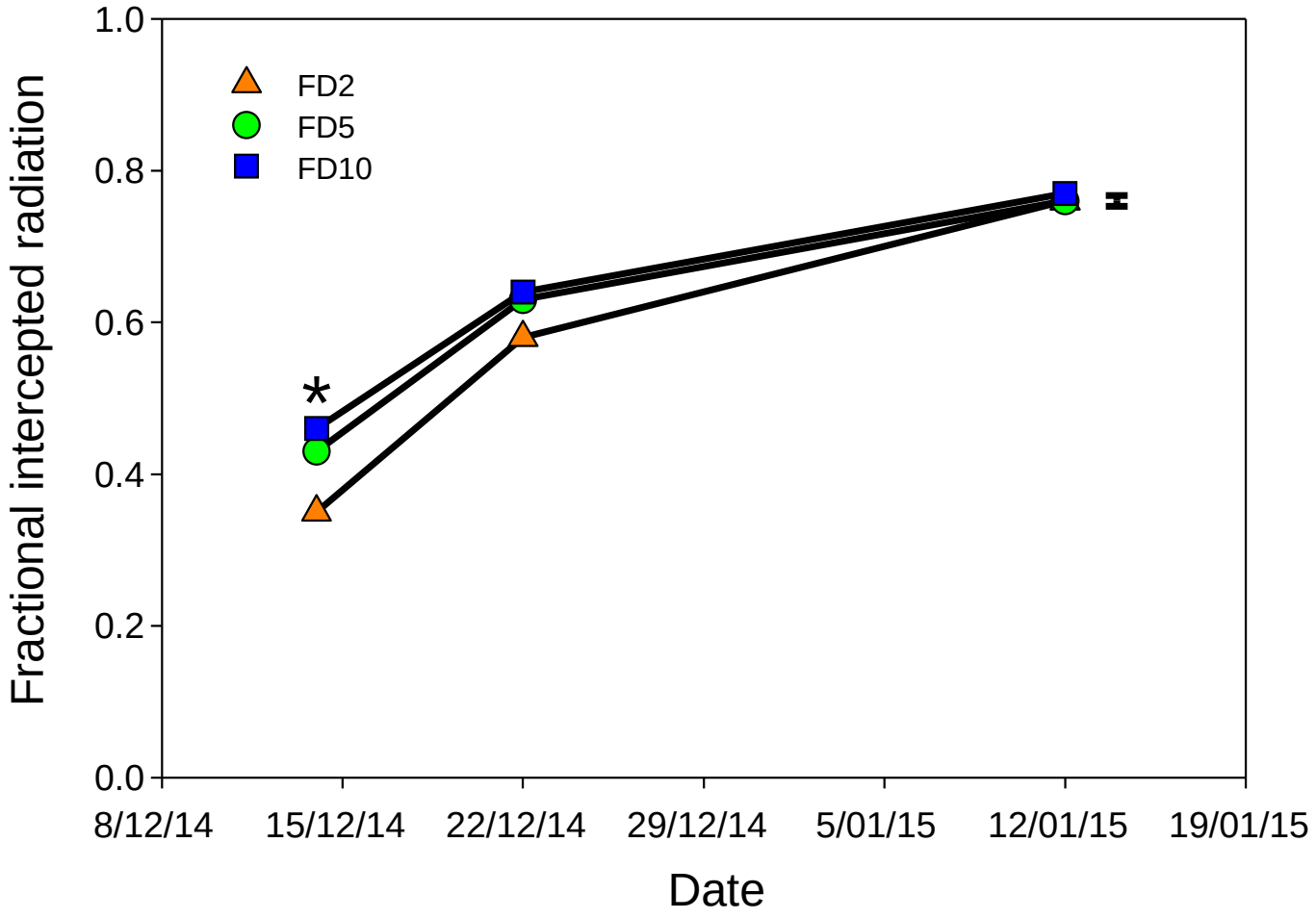
Light interception



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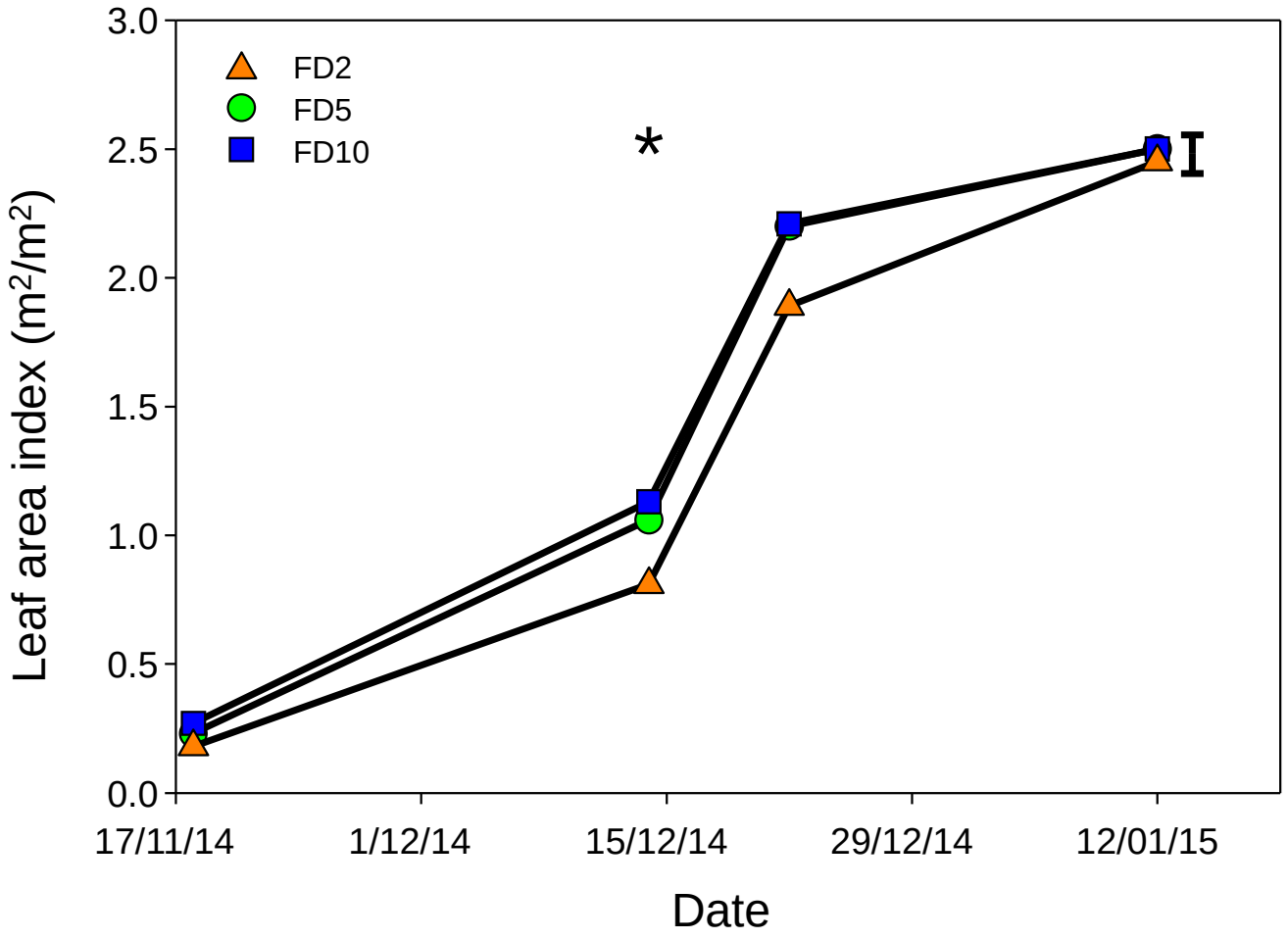
LAI



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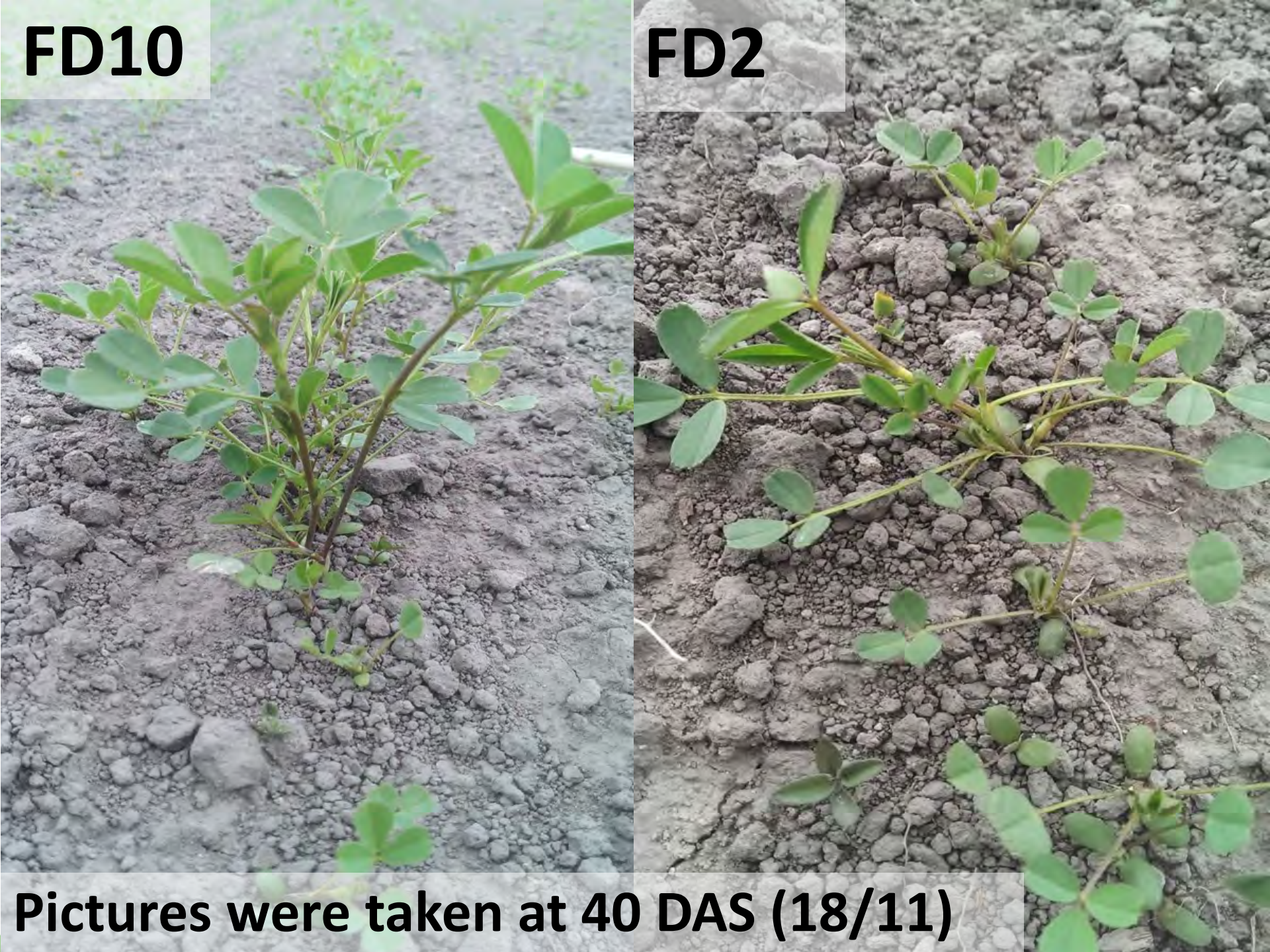
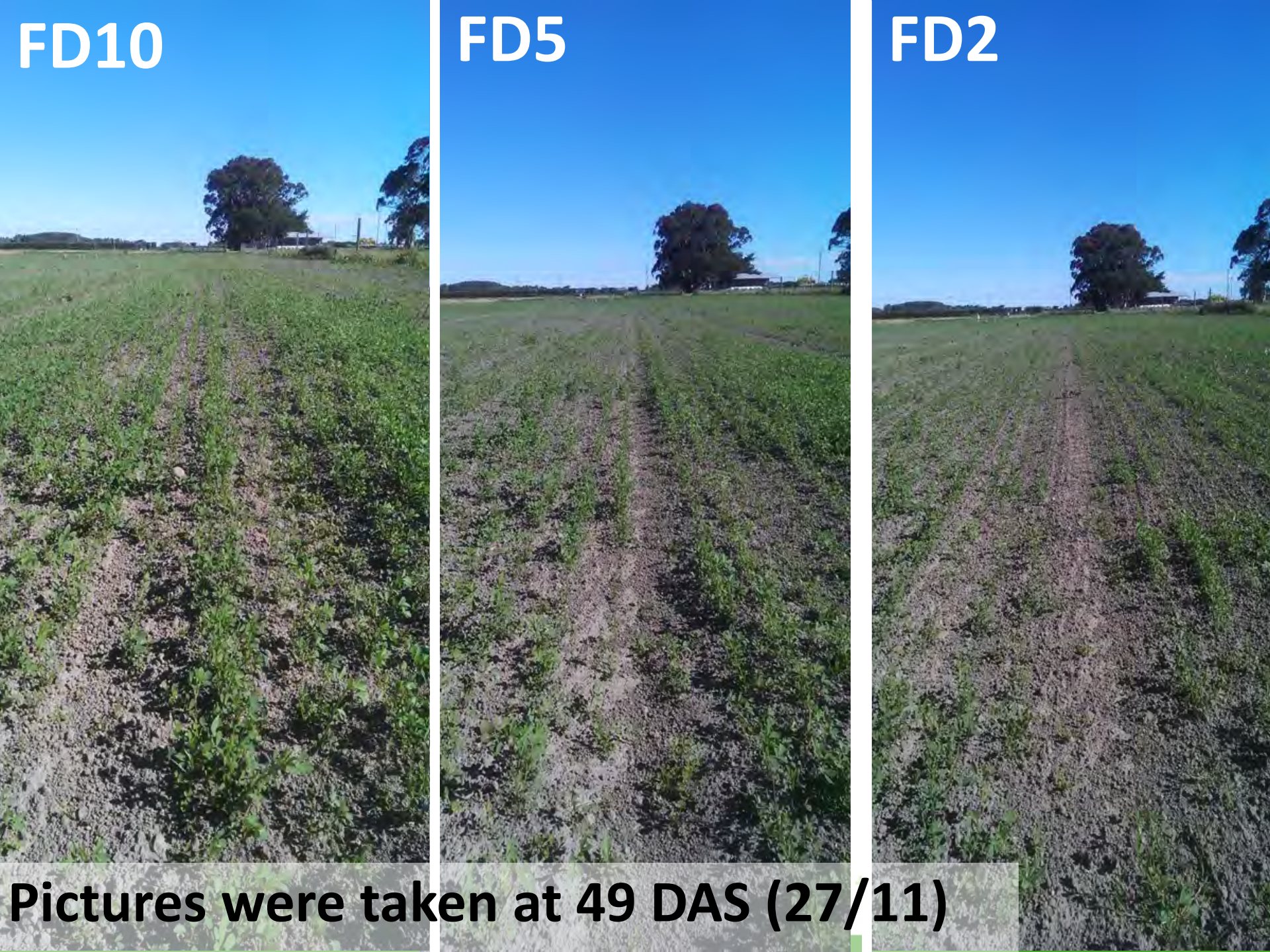
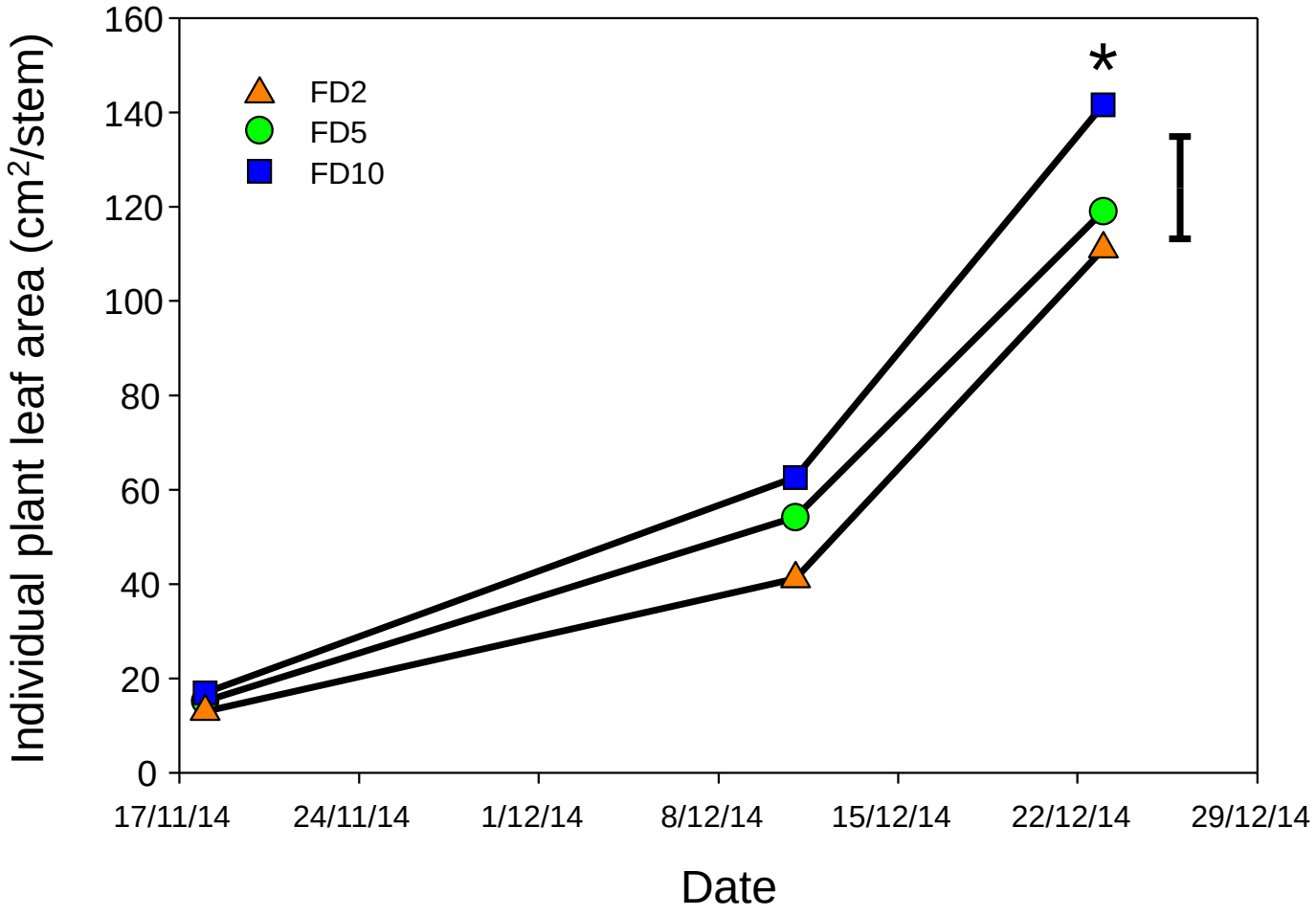

FD10
FD2
Pictures were taken at 40 DAS (18/11)


FD10
FD5
FD2
Pictures were taken at 49 DAS (27/11)

Individual Plant LA



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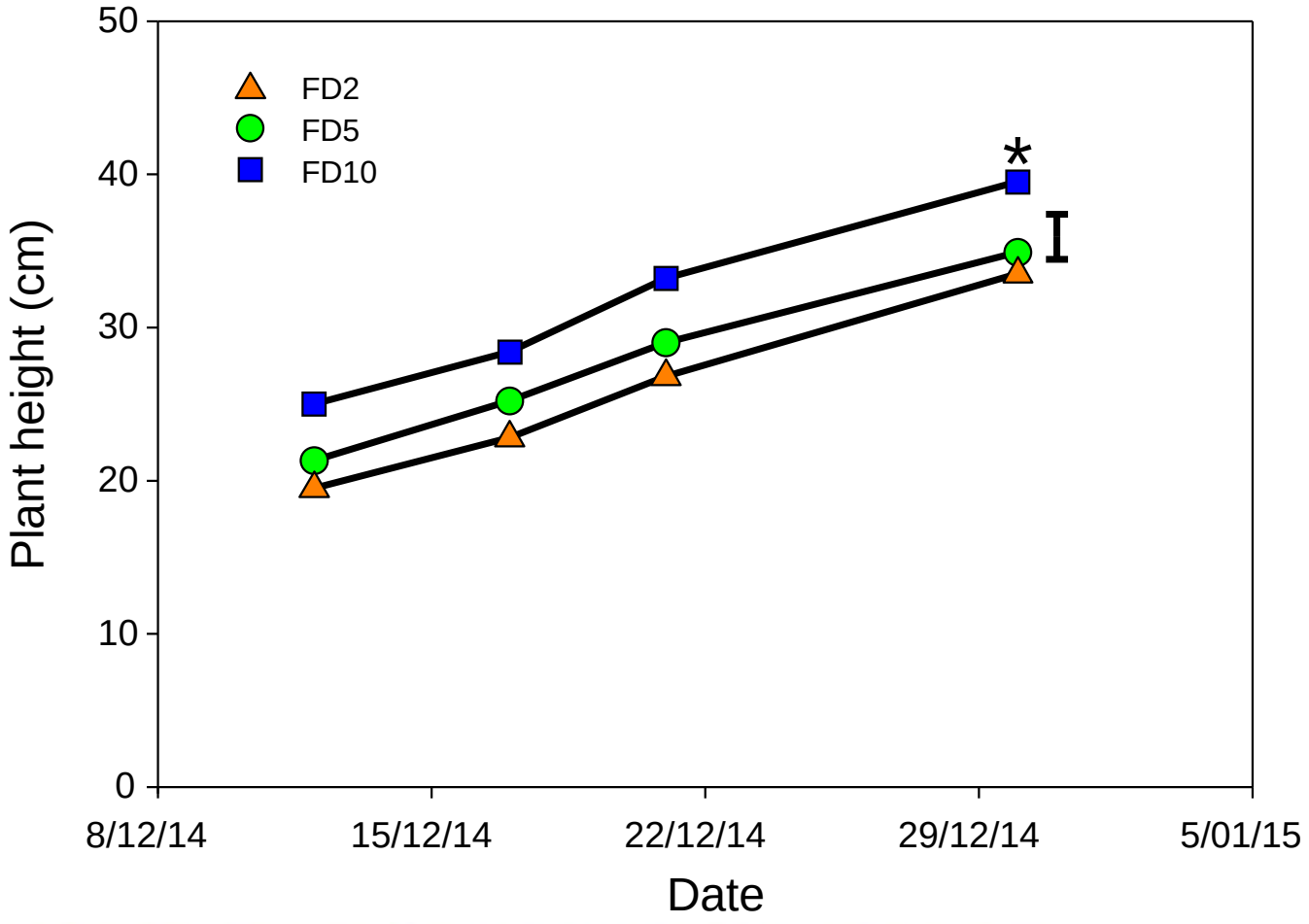
Plant height



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Conclusions

- Higher DM production of FD10 from higher light interception at early stages of crop development caused by higher LAI expansion rates.

- FD10 was tallest with higher LA per plant.

- Thermal time to emergence, P_{root}, and phyllochron were similar among genotypes.

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