

Supplementary Materials for:

Spatial Transferability of Random Forest Models for Crop Type Classification using Sentinel-1 and Sentinel-2

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Supplementary Material A

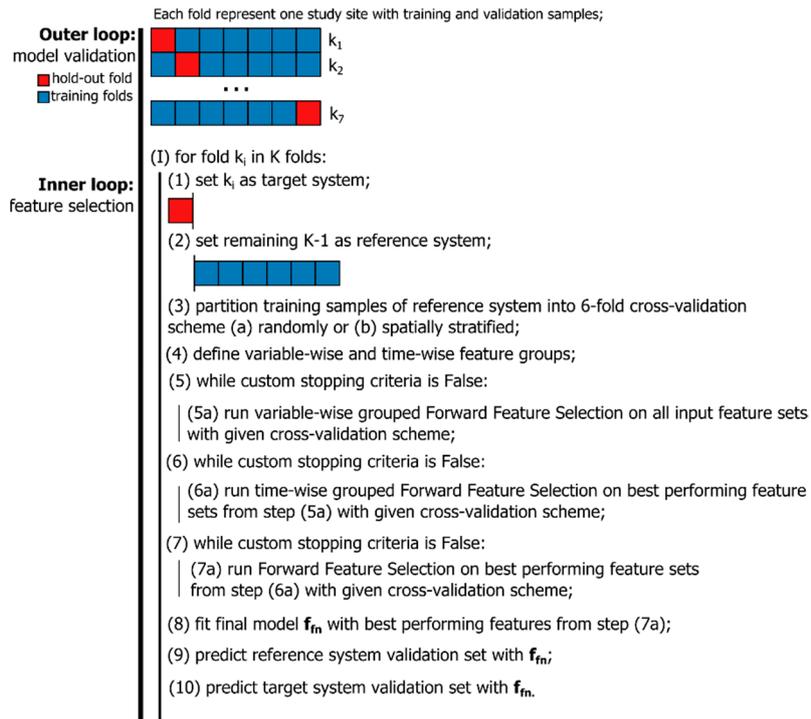


Figure. S1 Nested cross-validation strategy for model validation and feature selection.

Supplementary Material B

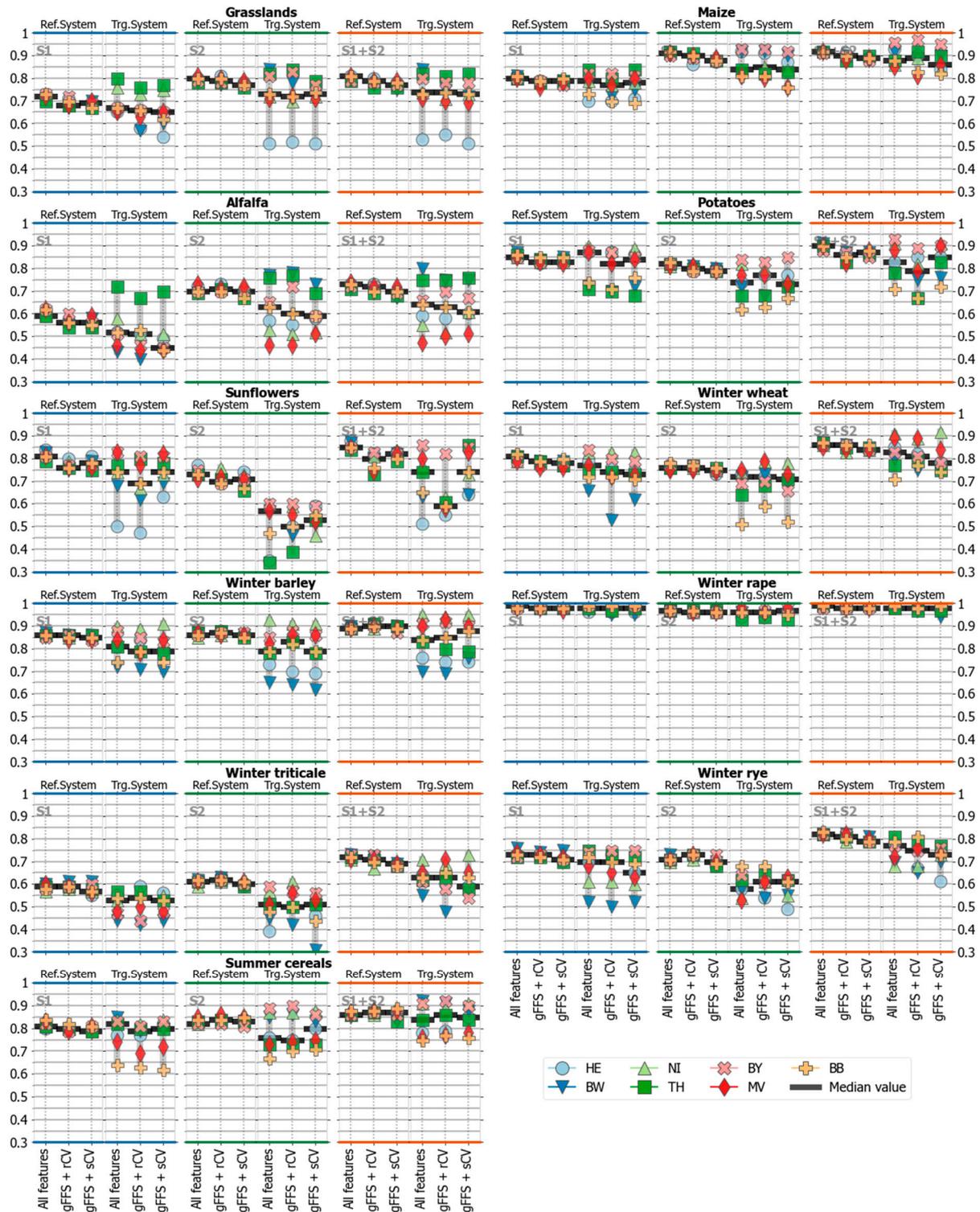


Figure. S2 Crop-specific classification accuracies (F1-score) in reference and target systems based on three sensor groups and three model building approaches. The abbreviation keys are provided in Table 2 of the main manuscript document.

Supplementary Material C

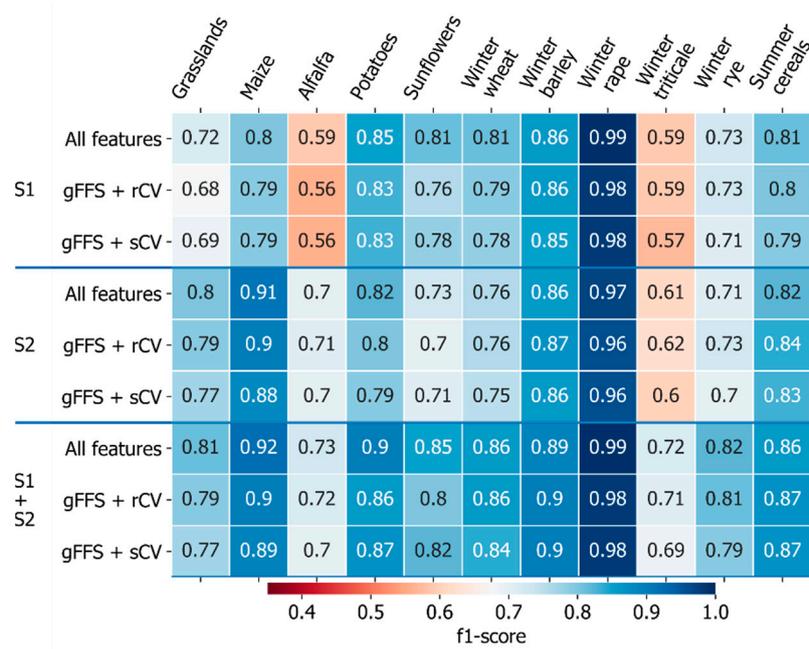


Figure. S3 Median values of class-specific accuracies for a given experiment in the reference system.

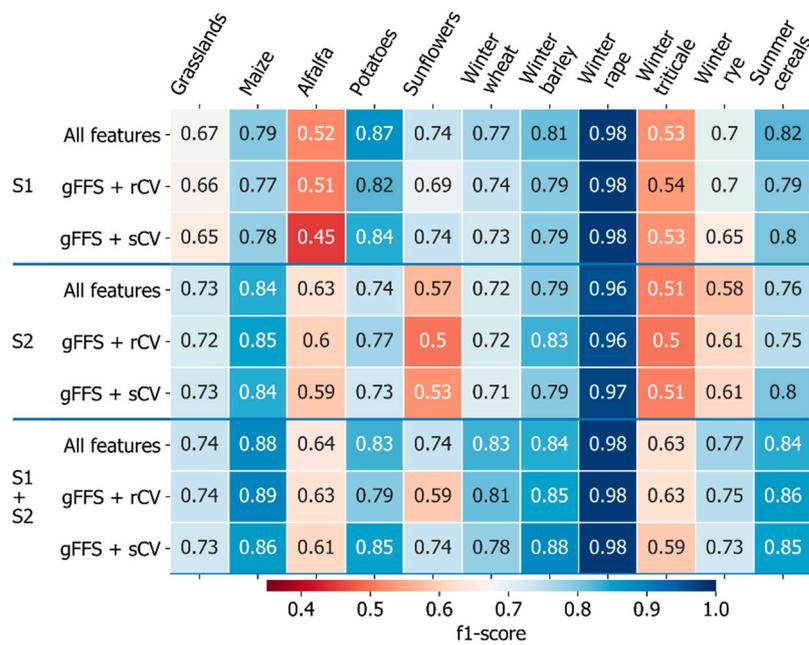


Figure. S4 Median values of class-specific accuracies for a given experiment in the target system.

Supplementary Material D

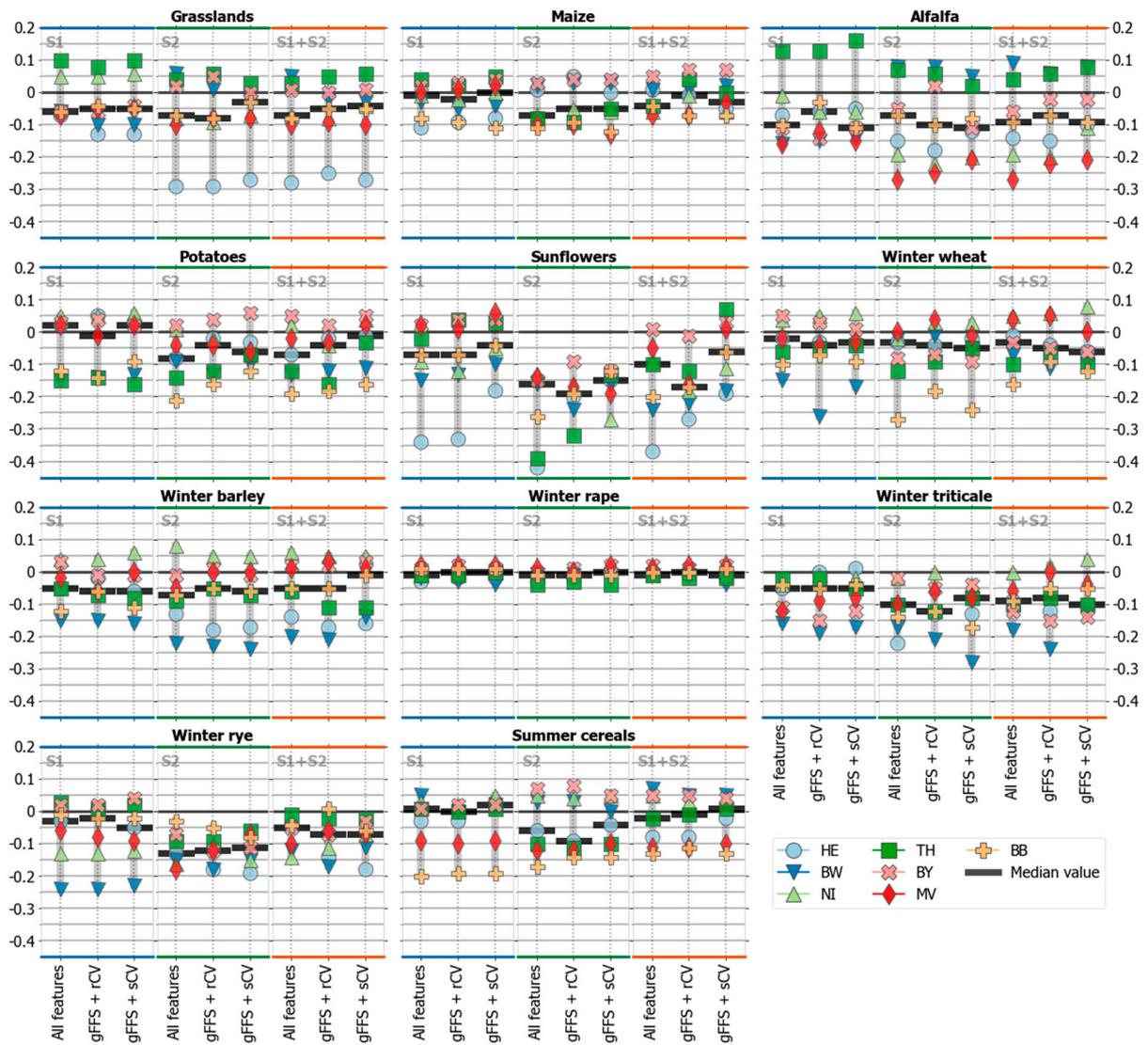


Figure. S5 Crop-specific accuracy losses in the target system. The abbreviation keys are provided in Table 2 of the main manuscript document.

Supplementary Material E

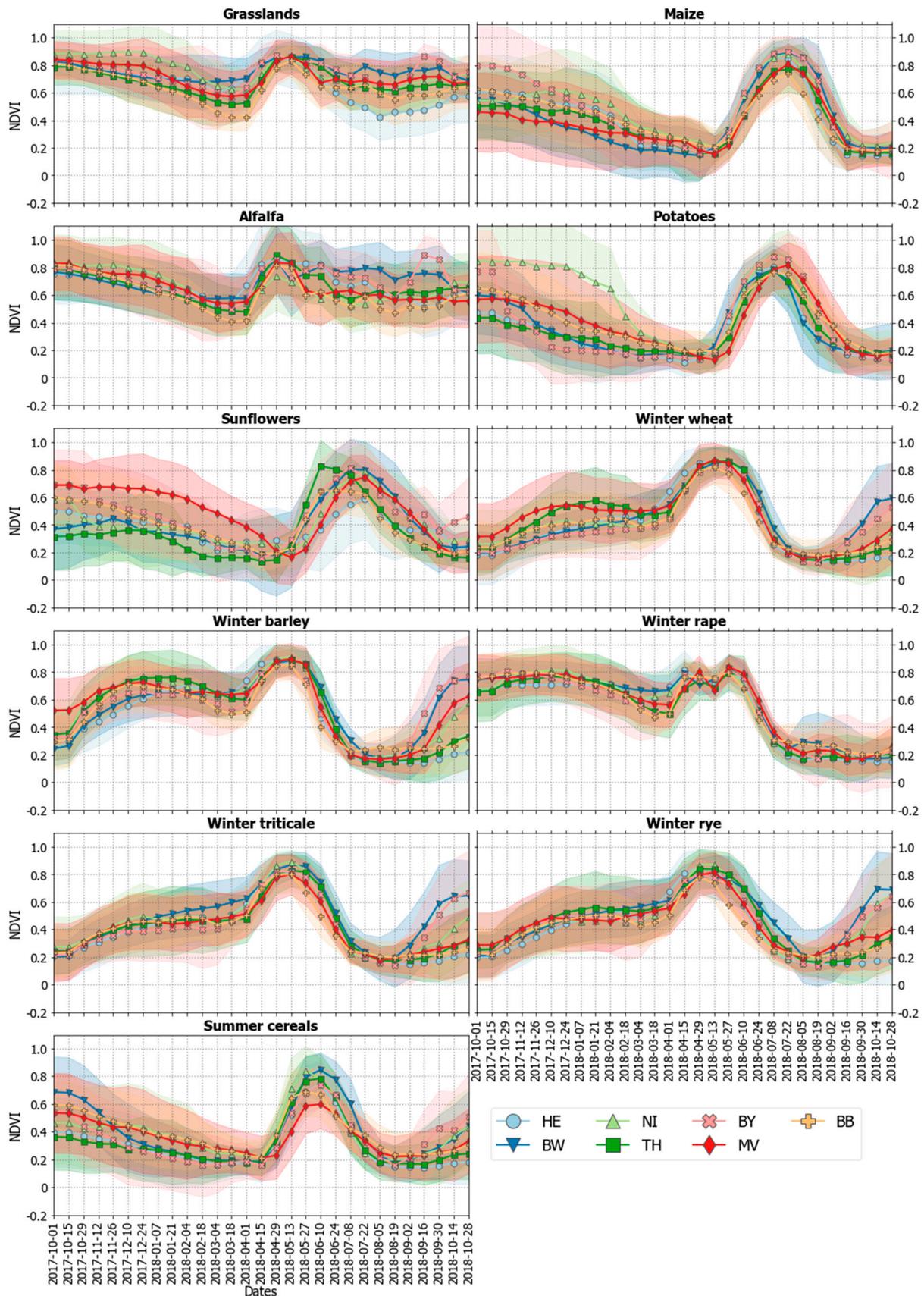


Figure. S6 NDVI temporal profiles based on all sample points for seven study sites.

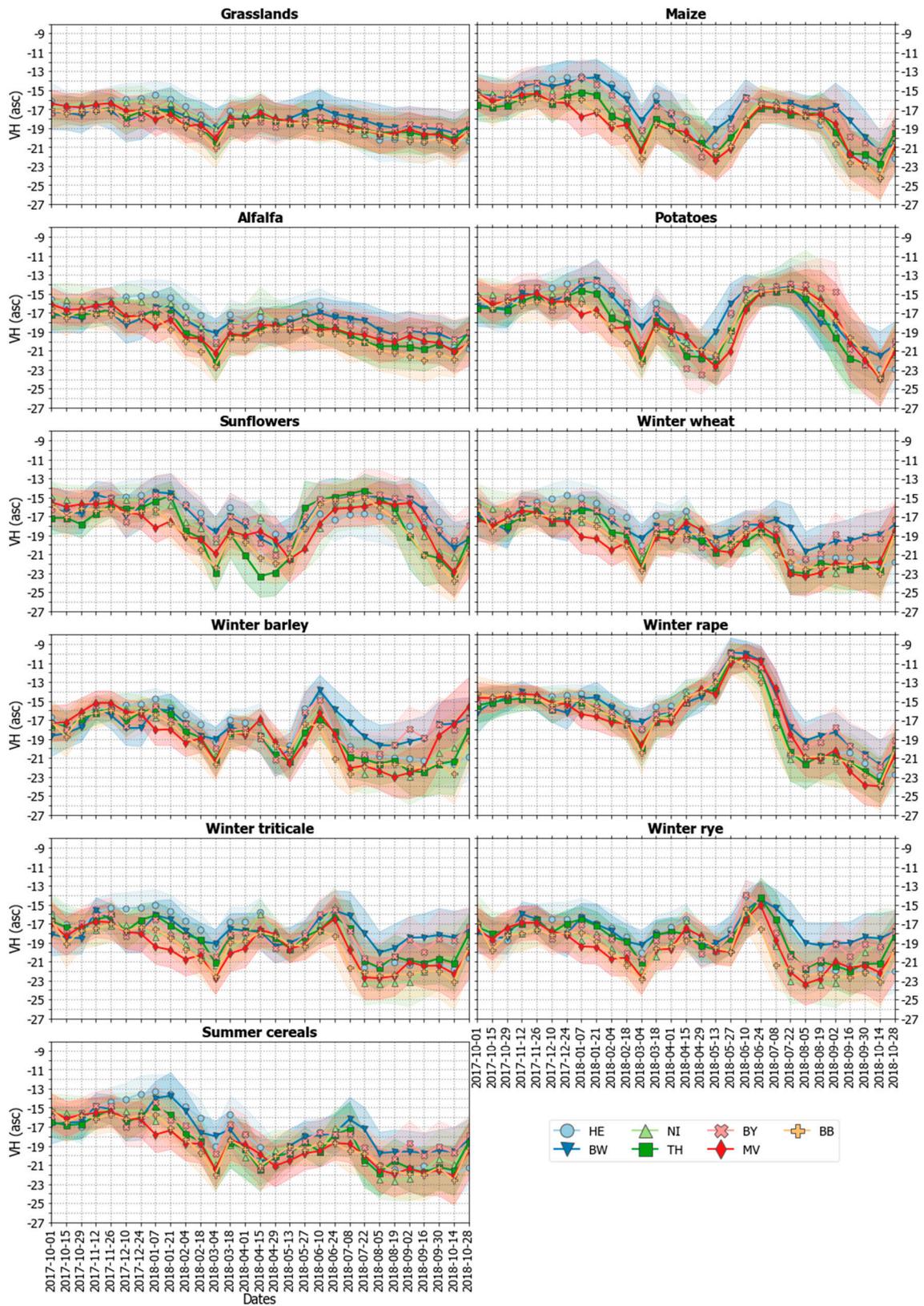


Figure. S7 Vh temporal profiles based on all sample points for seven study sites.

Supplementary Material F

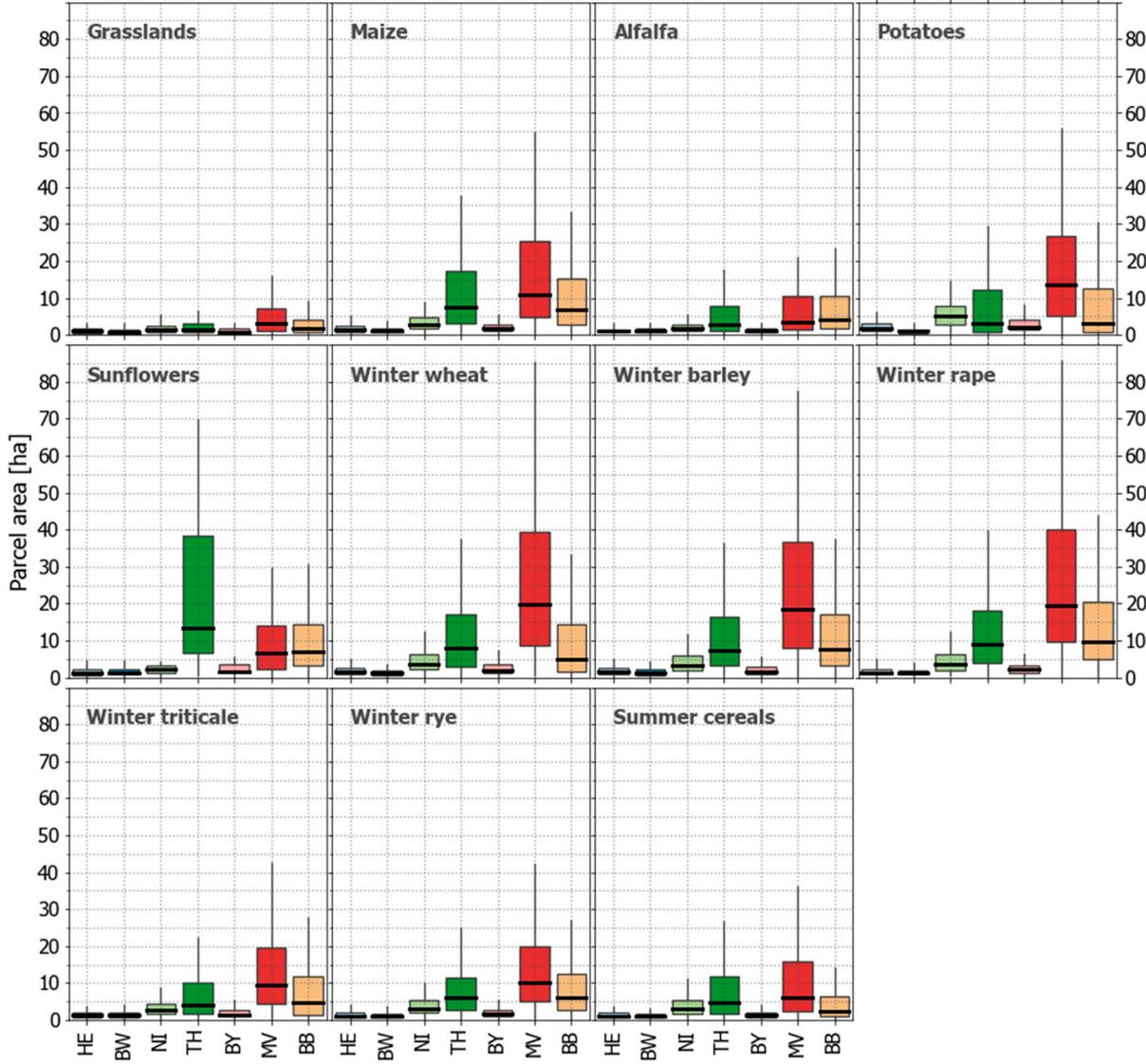


Figure. S8 Parcel size distributions across seven study sites for all crop types.

Supplementary Material G

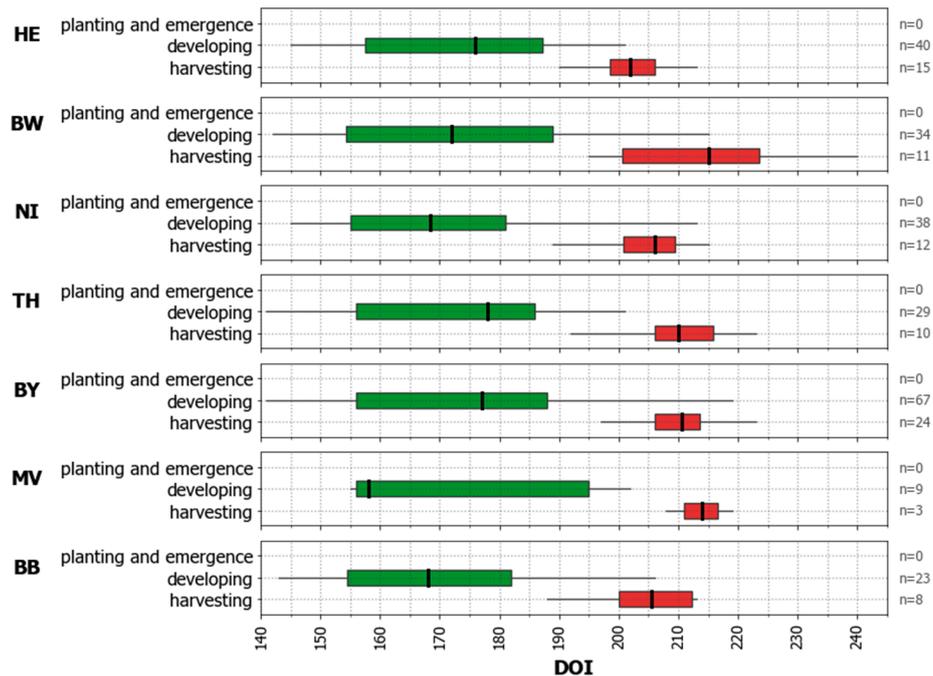


Figure. S9 Phenological phase observations for summer oat (part of summer cereals class) located within the seven study sites (data source: DWD, 2018d). The following grouping of recorded phenological phases was applied: '*Developing*' includes 'beginning of mil ripeness', 'yellow ripeness', 'beginning tassel emergence', 'beginning of shooting'; '*Harvesting*' includes 'harvest'. No observation was found for the 'Planting and emergence' stage.

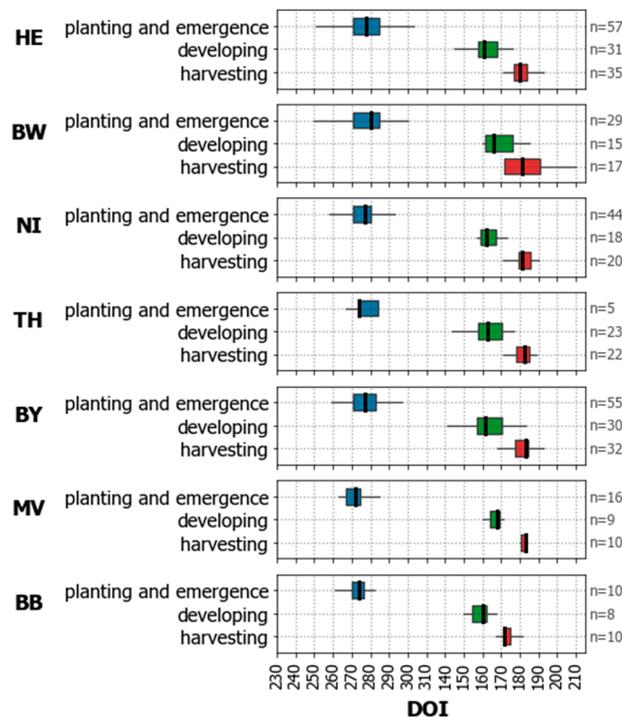


Figure. S10 Phenological phase observations for winter barley located within the seven study sites (data source: DWD, 2018d). The following grouping of recorded phenological phases was applied: '*Planting and emergence*' include 'beginning of tilling sowing drilling' and 'beginning of emergence'; '*Developing*' includes 'yellow ripeness', 'beginning of heading'; '*Harvesting*' includes 'harvest'.

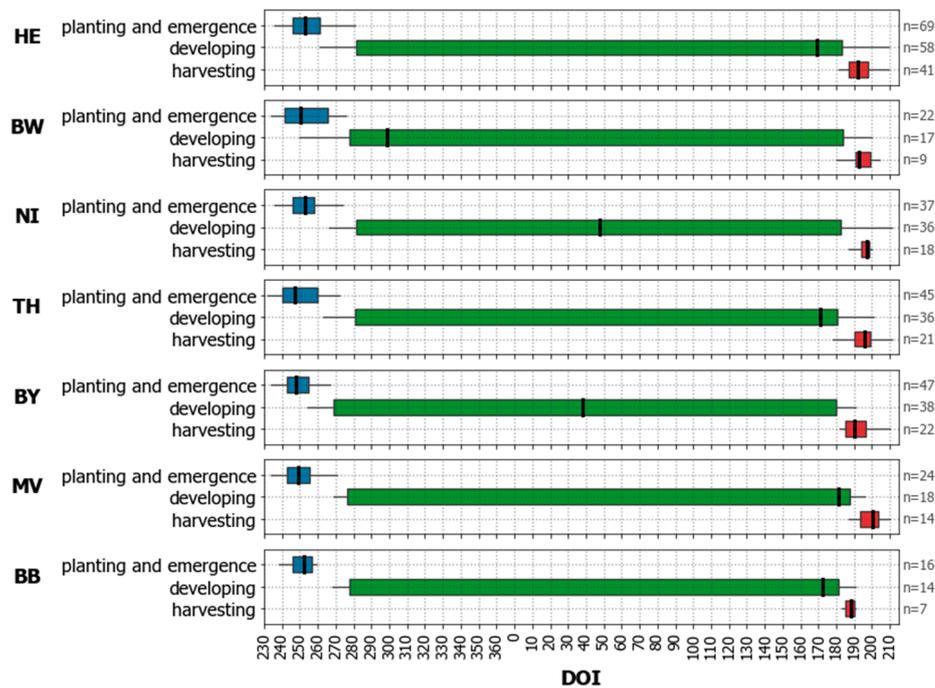


Figure. S11 Phenological phase observations for winter rape located within the seven study sites (data source: DWD, 2018d). The following grouping of recorded phenological phases was applied: '*Planting and emergence*' include 'beginning of tilling sowing drilling' and 'beginning of emergence'; '*Developing*' includes 'beginning of rosette formation', 'beginning of full ripeness'; '*Harvesting*' includes 'harvest'.

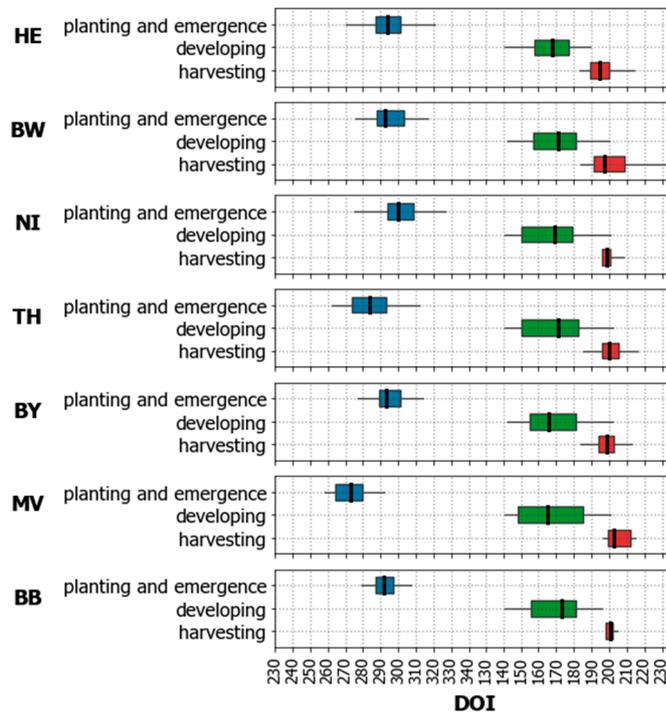


Figure. S12 Phenological phase observations for winter wheat located within the seven study sites (data source: DWD, 2018d). The following grouping of recorded phenological phases was applied: '*Planting and emergence*' include 'beginning of tilling sowing drilling' and 'beginning of emergence'; '*Developing*' includes 'beginning of mil ripeness', 'yellow ripeness', 'beginning of heading', 'beginning of shooting'; '*Harvesting*' includes 'harvest'.

References

DWD, 2018. Climate Data Center (CDC): Phenological observations of crops from sowing to harvest (annual reporters, recent), Available online:
https://opendata.dwd.de/climate_environment/CDC/observations_germany/phenology/annual_reporters/crops/recent. Version v006. Last accessed: 26.05.2021 [WWW Document].