

Table S1. List of traits and formulas used in the study.

| Abbreviation | Description | Units | Formula |
|----------------------------|--|--------------------|---|
| Phenology | | | |
| FloweringDate | Date of terminal flowering | | |
| HarvestDate | Date of plant harvest | | |
| Architecture | | | |
| MCD | Maximum canopy diameter | cm | |
| MCDH | Height of the maximum canopy diameter | cm | |
| Height | Height | cm | |
| MCDtoH | Ratio of MCD to H | | MCD/H |
| InitialHeight | Height at transplant | cm | |
| StemDiam | Stem diameter | mm | |
| BiconeVol | Bicone volume calculated from kite dimensions | cm ³ | $\pi * MCD^2 * Height / 3$ |
| MCDHRatio | Ratio of MCDH to H | | MCDH/H |
| UpperAng | The angle between the MCDH line and the upper hypotenuse | degrees | $180/\pi * \text{atan}((Height-MCDH) / (MCD/2))$ |
| LowerAng | The angle between the MCDH line and the lower hypotenuse | degrees | $180/\pi * \text{atan}(MCDH / (MCD/2))$ |
| Hratio | The ratio between the UpperAng and LowerAng | | UpperAng/LowerAng |
| UpperAngplusLowerAng | The sum of the UpperAng and LowerAng | degrees | UpperAng + LowerAng |
| lowerHyp | The length of the lower hypotenuse | cm | $\sqrt{MCD^2 + MCDH^2}$ |
| upperHyp | The length of the upper hypotenuse | cm | $\sqrt{MCD^2 + (Height-MCDH)^2}$ |
| kite_area | The area of the kite model | cm | $(Height * MCD) / 2$ |
| kite_perim | The perimeter of the kite model | cm | $(lowerHyp + upperHyp) * 2$ |
| kite_circ | The circularity of the kite model | | $4 * \pi * (kite_area / (kite_perim^2))$ |
| kite_bra | The branch angle of the kite model (angle between the height line and | degrees | $180/\pi * \text{asin}((MCD/2) / lowerHyp)$ |
| kite_hypr | The ratio between the upperHyp and lowerHyp | | upperHyp / lowerHyp |
| CanopyArea | The two-dimensional area of a field occupied by the plant | cm ² | MCD ² |
| Biomass | | | |
| WetBiomass | The wet biomass of the plant | kg | |
| DryBiomass | The dry biomass of the plant | g | |
| StrippedBiomass | The stripped inflorescence biomass | g | |
| StemBiomass | The stem biomass | g | |
| S1dry | The amount of dry biomass in S1 | g | |
| S2dry | The amount of dry biomass in S2 | g | |
| S3dry | The amount of dry biomass in S3 | g | |
| S4dry | The amount of dry biomass in S4 | g | |
| S5dry | The amount of dry biomass in S5 | g | |
| mainstemdry | The amount of dry biomass in the main stem | g | |
| S1strip | The amount of stripped inflorescence biomass in S1 | g | |
| S2strip | The amount of stripped inflorescence biomass in S2 | g | |
| S3strip | The amount of stripped inflorescence biomass in S3 | g | |
| S4strip | The amount of stripped inflorescence biomass in S4 | g | |
| S5strip | The amount of stripped inflorescence biomass in S5 | g | |
| logS4striptoS5strip | The log of S4strip:S5strip | | $\log(S4strip/S5strip)$ |
| PropDry | The ratio of DryBiomass:WetBiomass | | DryBiomass/WetBiomass |
| PropStripped | The ratio of StrippedBiomass:DryBiomass | | StrippedBiomass/DryBiomass |
| 1PropStripped | The proportion of S1 dry biomass that was stripped | | S1Strip/S1dry |
| S2PropStripped | The proportion of S2 dry biomass that was stripped | | S2Strip/S2dry |
| S3PropStripped | The proportion of S3 dry biomass that was stripped | | S3Strip/S3dry |
| S4PropStripped | The proportion of S4 dry biomass that was stripped | | S4Strip/S4dry |
| S5PropStripped | The proportion of S5 dry biomass that was stripped | | S5Strip/S5dry |
| S1toTotal | The proportion of total dry biomass from S1 | | S1dry/DryBiomass |
| S2toTotal | The proportion of total dry biomass from S2 | | S2dry/DryBiomass |
| S3toTotal | The proportion of total dry biomass from S3 | | S3dry/DryBiomass |
| S4toTotal | The proportion of total dry biomass from S4 | | S4dry/DryBiomass |
| S5toTotal | The proportion of total dry biomass from S5 | | S5dry/DryBiomass |
| StrpPerArea | Stripped biomass produced per unit area | g cm ⁻² | StrippedBiomass/CanopyArea |
| WetCanopyDensity | Wet biomass produced per unit volume | kg m ⁻³ | WetBiomass/(BiconeVol/1000000) |
| DryCanopyDensity | Dry biomass produced per unit volume | g m ⁻³ | StrippedBiomass/(BiconeVol/1000000) |
| logDryCanopyDensity | Log of DryCanopyDensity | | $\log(DryCanopyDensity)$ |
| Cannabinoids | | | |
| S1TPC | The total potential cannabinoid concentration of S1 | % | |
| S2TPC | The total potential cannabinoid concentration of S2 | % | |
| S3TPC | The total potential cannabinoid concentration of S3 | % | |
| S4TPC | The total potential cannabinoid concentration of S4 | % | |
| S5TPC | The total potential cannabinoid concentration of S5 | % | |
| CannabConcWeighted | The weighted concentration of cannabinoids | % | |
| CannabinoidYield | The estimated amount of cannabinoids produced by the plant | g | $S1TPC * S1toTotal + S2TPC * S2toTotal \dots S5TPC * S5toTotal$ |
| CannabinoidsperArea | The estimated amount of cannabinoids produced per unit area | g m ⁻² | CannabinoidYield/(CanopyArea/10000) |
| CannabinoidRegressionSlope | The slope of the regression predicting cannabinoid concentration using plant section | | |