Supplementary Material

1   Supplementary Tables and Figures

1.1   Supplementary Tables

1.1.1 Details of drip experiment:

Table S1 Detailed drip experiment results. Variables shown are: the target drop sizes (d_{rain}), generated the drops of diameter ($d_{drop, gen}$), standard deviation of the generated drops in the experiment runs ($SD(d_{drop, gen})$), standard deviation of the drops that missed the interception tube in the experiment runs ($SD(d_{drop, missed})$) together with the adjusted falling height (h_{fall}) to obtain the required kinetic energy representing target rain drop diameter. Reached velocity in the experiment is 75% of the terminal velocity of the generated drop, whereas it is equivalent to terminal velocity of the represented rain drop $v(d_{drop,rain})_{terminal}$.Other shown variables are: observed splash loss ($L_{splash,d}$) and standard deviation of the observed splash loss in the experiment runs ($SD(L_{splash,d})$).

$d_{drop,rain}$	$d_{drop,gen}$	$SD(d_{drop,gen})$	$SD(d_{drop,missed})$	h_{fall}	$v(d_{drop,rain})_{terminal}$	$L_{splash,d}$	$SD(L_{splash,d})$
(mm)	(mm)			(m)	(ms^{-1})	(%)	
2.02	3.85	0.060	0.97	3.16	6.61	21	0.73
1.95	3.55	0.061	0.82	3.00	6.46	17	4.12
1.87	3.30	0.056	0.99	2.83	6.31	16	3.00
1.79	3.06	0.056	0.99	2.67	6.13	6	1.32
1.70	2.82	0.062	1.08	2.50	5.92	5	1.39
1.47	2.30	0.120	0.99	2.42	5.35	3	1.29

1.1.2 Weekly data

Table S2 Overview of solar radiation, air temperature and summed potential evapotranspiration (PET) data which was recorded at nearby weather station (Reckenbuel) data based on 10 minutes temporal resolution for covered period. The data is upscaled through sampling intervals. Potential evapotranspiration was calculated by using equation, which bases on solar radiation and air temperature, developed by Kleidon and Renner (2013).

Date	Precipitaton Duration (h)	Maximum Solar Radiation (Wm^{-2})	Mean Solar Radiation (Wm^{-2})	SD $_{Solar Radiation}$	Mean Air Temperature (°C)	Max Air Temperature (°C)	SD $_{Air Temperature}$ (°C)	Total PET (mm)
30/04/2019	23	1158	129	235	9.1	24.2	4.9	4.8
07/05/2019	16	1041	166.0	246.7	6.7	17.9	4.2	6.2
15/05/2019	28	1347	156.0	271.4	7.5	15.2	3.5	7.0
22/05/2019	26	1105	140.5	259.7	11.4	22.0	4.5	6.4
29/05/2019	13	1127	196.8	299.5	12.7	21.0	3.9	9.1
04/06/2019	3	1221	240.9	348.2	17.6	30.0	5.4	12.0
13/06/2019	5	1344	182.2	289.2	15.9	30.4	4.6	13.0
18/06/2019	25	1177	186.0	286.9	16.7	25.3	4.2	7.5
26/06/2019	4	1360	263.3	366.0	19.8	31.8	5.0	18.8
24/07/2019	3	1148	190.0	287.7	18.7	30.9	4.4	11.4
30/07/2019	8	1037	201.0	309.1	21.6	35.3	5.2	11.2
08/08/2019	6	1172	167.4	253.3	17.8	26.8	3.2	12.4
14/08/2019	12	1052	154.4	245.3	16.8	27.6	4.1	7.4
21/08/2019	14	1043	133.8	214.5	16.1	25.8	3.2	7.3

1.1.3 Details of the linear mixed effects model analyzes for uncovered and covered periods

The formulas of the optimum model to estimate interception tube measurements for the uncovered ($P_{g,tube,cor}$) and covered ($P_{net,tube}$) periods in 'lmer' function in lme4 package (Bates et al., 2015) are as follows:

$P_{g,tube,cor} \sim \overline{P_{g,fun}} + \overline{P_{g,fun}} : Z_{tube} + (1 \mid \textit{interception tubes ID}) + (1 \mid \text{record date})$

$P_{net,tube} \sim \overline{P_{g,fun}} + Z_{tube} + \overline{P_{g,fun}} \times Z_{tube} + \overline{h_{grass}} + \delta h_{grass} + \delta h_{grass} \times \bar{u} + (1 \mid \textit{interception tubes ID}) + (1 \mid \text{record date})$

The variables are: $\overline{P_{g,fun}}$ is mean gross precipitation which was collected by conventional funnels 1.5 m above ground level, $\bar{u}$ is wind speed, Z_{tube} is elevation of interception tubes position, $\overline{h_{grass}}$ is average grass height, δh_{grass} is normalised grass height.

Table S3 Considered fixed factors for the linear mixed effect model analysis to estimate interception tube measurements for the uncovered ($P_{g,tube,cor}$) and covered period ($P_{net,tube}$) together with R^2 and AIC values. Shaded variables are significant fixed effects. $\overline{P_{g,fun}}$ is mean gross precipitation which was collected by conventional funnels 1.5 m above ground level, $\bar{u}$ is wind speed, Z_{tube} is elevation of interception tubes position, $\overline{h_{grass}}$ is average grass height, δh_{grass} is spatial deviation of grass height from the mean. Grass height was not considered for the uncovered period, hence NA stands for not applicable variable for the corresponding model. All variables were scaled before the analysis. p-values are derived from the type III Analysis of Variance Table with Satterthwaite's method.

	Uncovered period		Covered period	
R² Full model	0.94		0.96	
R² Fixed	0.85		0.85	
R² Random	0.09		0.11	
AIC	104.4		15.04	
Fixed effects	t-value	p-value	t-value	p-value
Single terms				
$\overline{P_{g,fun}}$	11.3	<0.001	7.0	<0.001
$\bar{u}$				
Z_{tube}			1.7	0.104
$\overline{h_{grass}}$	NA	NA	-3.6	0.009
δh_{grass}	NA	NA	-1.9	0.056
Interaction terms				
$\bar{u} \times \overline{P_{g,fun}}$	-	-	-	-
$Z_{tube} \times \bar{u}$	-	-	-	-
$\overline{P_{g,fun}} \times Z_{tube}$	-2.7	0.007	1.9	0.057
$\overline{h_{grass}} \times \bar{u}$	NA	NA	-	-
$\delta h_{grass} \times \bar{u}$	NA	NA	2.6	0.012

Table S4 Correlation of fixed effects of the uncovered period tube measurements ($P_{g,tube,cor}$) estimation model

	Correlation of Fixed Effects (Uncovered Period)	
	Intercept	$\overline{P_{g,fun}}$
$\overline{P_{g,fun}}$	0.007	
$\overline{P_{g,fun}} \times Z_{tube}$	0.003	0.001

Table S5 Correlation of fixed effects of the covered period tube net precipitation measurements period ($P_{net,tube}$)

	Correlation of Fixed Effects (Covered Period)					
	Intercept	$\overline{P_{g,fun}}$	Z_{tube}	$\overline{h_{grass}}$	δh_{grass}	$\overline{P_{g,fun}} \times Z_{tube}$
$\overline{P_{g,fun}}$	-0.192					
Z_{tube}	0.003	0.003				
$\overline{h_{grass}}$	0.016	-0.081	0.000			
δh_{grass}	-0.001	0.004	0.011	0.000		
$\overline{P_{g,fun}} \times Z_{tube}$	0.003	0.018	-0.058	0.008	0.063	
$\overline{h_{grass}} \times \bar{u}$	0.001	0.000	0.085	0.000	-0.336	-0.005

1.2 Supplementary Figures

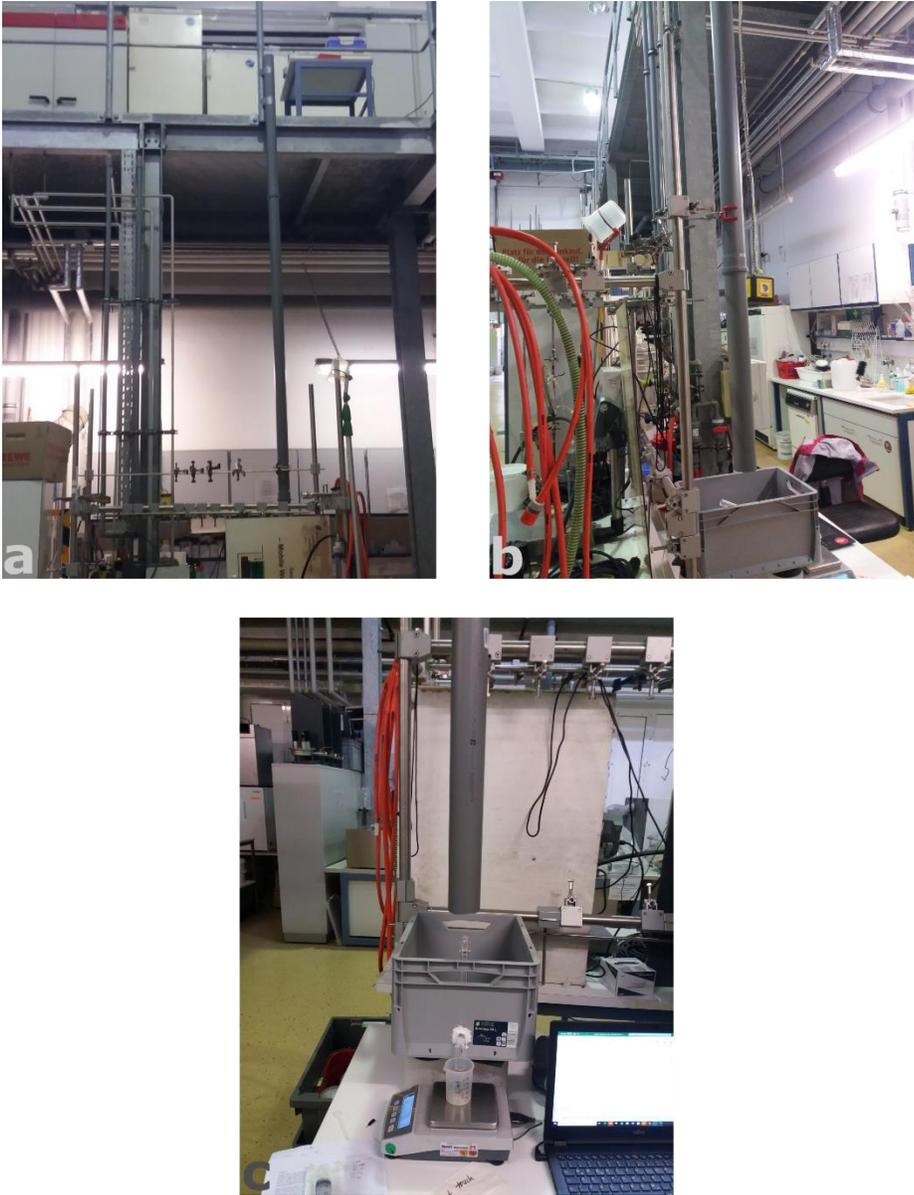### 1.2.1 Photos of the drip experiment setup

Figure S 1 Drip experiment setup: (a) the peristaltic pump (Watson-Marlow 101U), fixed plastic pipe to minimize air current influence on drops, and protection of outlet (b) lower part of the fixed plastic pipe and the protected interception tube, (c) sealed outlet of the interception tube, the mass scale which measures received drops continuously.

Figure S 2 View of field during developed canopy (a) after summer cut in 2016, and (b) before summer cut in 2019