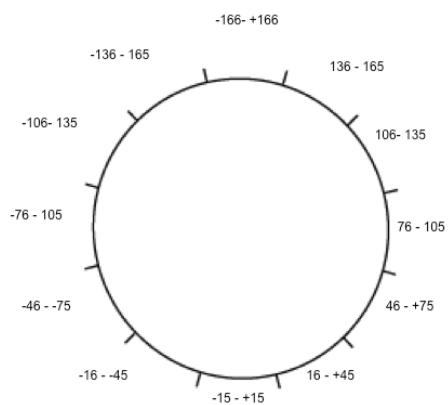


Analysis of gravitropism

1. Scanning of plant plates
2. measure angle of roots with ImageJ
3. Calculate deviation from 45°
4. Calculate how many plant per category
5. Calculate Percentage of plants per category

Categories

$-15^\circ - +15^\circ$
$+16^\circ - +45^\circ$
$+46^\circ - +75^\circ$
$+76^\circ - +105^\circ$
$+106^\circ - +135^\circ$
$+136^\circ - +165^\circ$
$-166^\circ - +166^\circ$
$-16^\circ - -45^\circ$
$-46^\circ - -75^\circ$
$-76^\circ - -105^\circ$
$-106^\circ - -135^\circ$
$-136^\circ - -165^\circ$

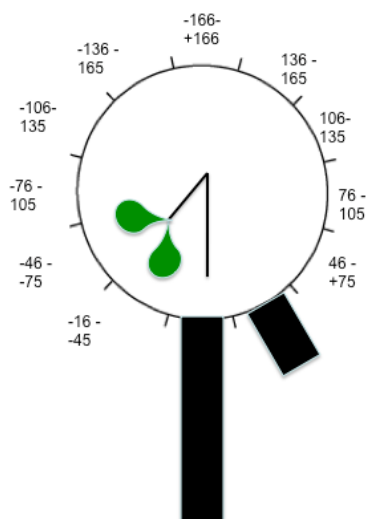


“Gravi-Sonne”

Example

Plant	Measured angle	Measured angle -45°	Sorted values
1	50	5	35
2	70	25	25
3	60	15	15
4	80	35	10
5	55	10	5
6	30	-15	4
7	49	4	-5
8	40	-5	-15

Categories	Number of plants per category	Percentage of plants per category
$-15^\circ - +15^\circ$	6	75
$+16^\circ - +45^\circ$	2	25
$+46^\circ - +75^\circ$		
$+76^\circ - +105^\circ$		
$+106^\circ - +135^\circ$		
$+136^\circ - +165^\circ$		
$-166^\circ - +166^\circ$		
$-16^\circ - -45^\circ$		
$-46^\circ - -75^\circ$		
$-76^\circ - -105^\circ$		
$-106^\circ - -135^\circ$		
$-136^\circ - -165^\circ$		
Sum of analyzed plants	8	




Generating gravitropism diagrams/ schemes

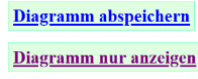
1. Double click "start"  in Gravisonne folder

2. Your browser will start automatically

3. Click on Web Server 

4. Click on Windrose 

5. You can either save your diagram or only display it



(I prefer display and copy the scheme with the snipping tool)

6. Enter your values in the respective fields
and click on Diagramm erstellen

	Order for software	# of seedling in category	% of seedlings in category
1	-166° - +166°		
2	+136° - +165°		
3	+106° - +135°		
4	+76° - +105°		
5	+46° - +75°		
6	+16° - +45°		
7	-15° - +15°		
8	-16° - -45°		
9	-46° - -75°		
10	-76° - -105°		
11	-106° - -135°		
12	-136° - -165°		