



# **ANALYTICAL INVESTIGATION OF IYNT 2017**

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## DESCRIPTION OF QUESTION

- How do Wi-Fi Routers affect the germinating and growing process of the garden cress?
- In 2013, five young students claimed a sensational discovery that garden *cress*(*Lepidium sativum*) will not germinate when placed near two Wi-Fi routers.
- We tried to do a partial reproduction of the experiment to see to what end we could reproduce the results.(under controlled conditions)



VS



# CONDITIONS

## Controlled conditions

All seeds were equally placed in comfortable environment --a plastic plate with moist tissues. There were 100 seeds in each plate.

## The variable to be investigated

We placed three of them near the Wi-Fi routers (5~10cm) and the others away from the routers (more than 5m).



# DAY 1

- The garden cress of both sides didn't germinate neither, maybe they wanted to absorb as much moisture as they could.



Away from the routers



Near the routers

## DAY 2

- The garden cress of both sides swelled a little more and changed the dark color into a little lighter one.



Away from the routers



Near the routers

## DAY 3

- The garden cress sprouted a little and the seeds the in three plates away from the routers seemed to grew more naturally than the ones near the routers.



Away from the routers



Near the routers

## DAY 4

- The cress in three plates away from the routers grew much higher and became much stronger than the ones near the routers.



Away from the routers



Near the routers

## DAY 5

- The more nutrition they absorbed, the higher they were. However, although they shared the same amount of sunlight, moisture and temperature— there were still some differences between the two categories.



Away from the routers



Near the routers



Near the routers

Away from the routers

## DAY 6

- They all grew a lot and the plants in the 'Away from the routers' plate are notably higher than those in the plates near the routers. The following photos may help illustrate this.





## DAY 8

- After 2 days, let's see how the plants grew.
- Despite the height of these plants, dramatically, the plants in the 'Away from the routers' 's plates are greener and also 'healthier' than the others.



Away from the routers



Near the routers

## DAY 9 : AWAY FROM THE ROUTERS



# DAY 9 : NE



## DAY 10

- Unfortunately, our plants died because of they've grown so tall and the gravity increased, they just couldn't manage the mass of its stem
- However, the day before their death, I found out the seeds near the routers just became brown and weak. But the seeds away from the routers can grow well.



## GERMINATION RATES

- Away from the routers:
- 100 seeds per plate × 3 plates
- Total: 300 seeds
- Germinated : 268 seeds    **RATE: 89.33%**
  
- Near the routers:
- 100 seeds per plate × 3 plates
- Total :300 seeds
- Germinated: 205 seeds    **RATE 68.33%**



## EXTERNAL FACTORS

- Although we tried our best to control the conditions in diverse ways, there were also some factors were not excluded in this experiment.
- ①: Wi-Fi routers may produce heat, which may influence the seeds in an enormous effect.
- ②: Many conditions affect the moisture's evaporation. Such as the uncontrolled temperature, wind speed, etc.
- ③: Light may also be one external factor.



## CONCLUSION

- In conclusion, according to the above experiments and its results along with our investigation, we confirm that Wi-Fi routers affect the growth of garden cress in decreasing its growing speed and inhibiting its germination. However, our experiment dismisses the result of "absolute inhibition in germination" which is claimed by the students in 2013.



○ THANK YOU...

