2024/12/28 Title

Finding How Tropical and Indoor Plants are Alike and Different

Problem Statment: The problem is that we are toying to find out the difference Between tropical and indoors plants. Also we want to know how to let tropical plants thrive indoors

Motivation: My mom likes tropical plants such as tumeric, holy basil, and jasmine which are used for cooking, but these plants are hard to find and do not survive indoors. She always struggled to keep the plants indoors espically during winters. She felt bad when the died and worried about their survival indoors.

My thoughts: I always wondered why the plants are different from other plants such as monstera, ZZ, pothos, and rubber plant which are always happy for all the seasons.

I promised my mom that I will find out why this is happening and how to help the plant thrive. This is how this project came to mind.

2024/12/29 Notes
Weather Challenges

- Canada can be described as a cold, dry climate
- The nearby Rocky mountains affect our temperatures and precipitation.
- The growing season is defined by the first and last frost
- Chinooks are very strong, warm winds (up to 120 km/hr
- There are about 30-35 days of a chinook per year
- The temperatures from -20 to +20 within 24 hours
- Hail can be from a pea gravel size ~~and~~ to a tennis ball size
- Tropical plants
- Trees in the tropical region grow very tall
- Leaves are ~~usually~~ usually thick and have drip tips
- Tree trunks are ~~very tall~~ wide and flared and tree bark is thin and smooth

Difference between outdoor and indoor plan

Continue : Notes

- indoor plants require less weeding, digging and mulching
- Out door plants will often need fertilizer or organic matter add to the soil
- in door plant need to change soil to replenish nutrients

2024/12/31 Hypothesis / variables

The indoor plants I have are pothos, monstera, Chinese ZZ plant, Ficus elasti a (rubber plant) and turmeric are tropical plan In this experiment our goal is to understand plants sensitivity to temperature and light.

Hypothesis: I observed all plants are green and they all need water, light and warmth to g , so my hypothesis is that indoor and tropical plants behave the same when exposed to s light and cold temperatures indoors

Controlled varible: any varible that held constant agrees each study Some varibles are tempera light, fertilizer and time

Constant varible: something keep the same during experiment and a few are Plants, food water, and Soil

Manipulated varible: a factor that is purposefu and specifically changed and one of them are weather

2025/1/2

Chosen plants: Pothos, ZZ, Monstera, and rubber plant

Hot/Cold = application time 5 mins

Material
stop watch
infared thermometer
light source
ice pack

Step 1: measure the intial temperature of the plant using the infared thermometer

Step 2: Start timer for five minutes

Step 3: hold the ice pack until the timer ends

Step 4: measure again the temperature after the timer done

Step 5: wait until the plant comes back to its intial temperatur

Step 6: measure the time taken for the plant to come to its self

Step 7: repeat the procedure 2 more times

Step 8: repeat the prodedure from step 3 to apply heat

10min

Plant	Intial temperature	Type	After temperature	time taken for coming b	c/c
Pothos	21.4	cold	18.4	45.58sec	avg
Pothos	22.0	cold	13.4	01:11.97	70
Pothos	22.4	cold	11.2	01:34.96	
Pothos	21.4	heat	28.2	0.1.10.44	75
Pothos	21.6	heat	28.1	0.1.09.84	
Pothos	21.3	heat	28.1	0.1.25.66	

5min

Between =10min

	Plants	intial temp.	type	After temp.	time take to come back	
1	ZZ	21.0	cold	20.8	00.8.67sec	avg
2	ZZ	21.0	cold	20.6	00.6.45sec	7
3	ZZ	21.0	cold	20.7	00.7.40secs	
1	ZZ	20.3	heat	24.9	00.28.05	
2	ZZ	21.3	heat	25.3	00.36.06	33
3	ZZ	21.4	heat	25.4	00.37.75	

Between =10min

	Plant	intial temp.	type	After temp.	time taken	mins
1	monstera	21.5	cold	10.5	1:10mins	Avg
2	monstera	20.5	cold	12.5	1:00min	65
3	monstera	20.7	cold	13.5	1:00	
1	monstera	22.6	Hot	25.1	01.03.13sec	65
2	monstera	22.2	Hot	24.8	01.04.65sec	
3	monstera	22.3	Hot	26.4	01.04.25sec	

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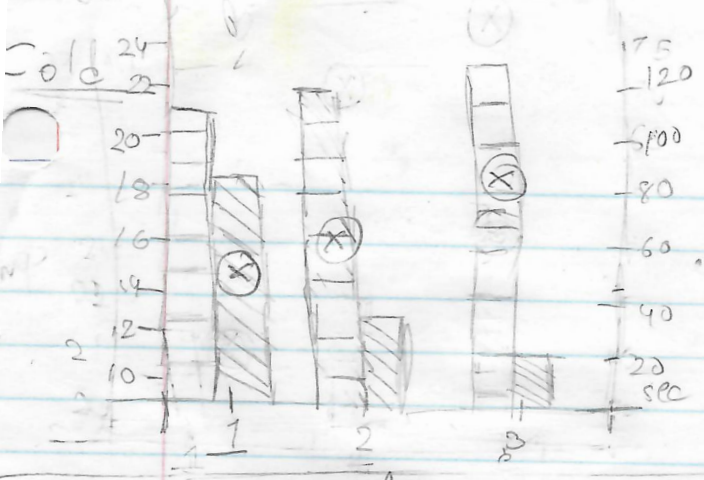
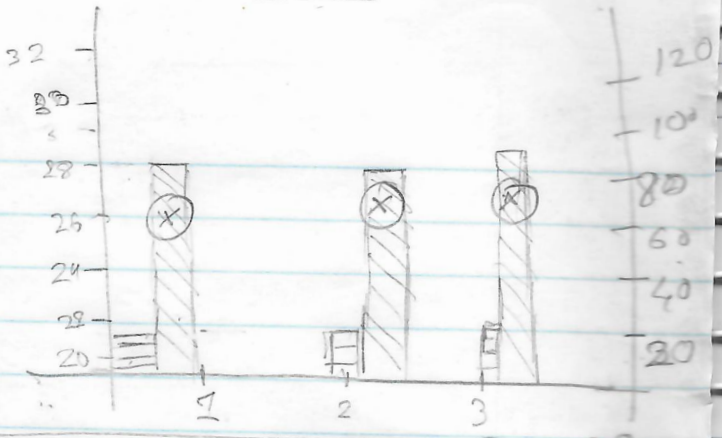
Between each test = 10 min

	Plant	Intial temp	type	After temp	Time taken	Avg
1	rubber	21.1	cold	12.2	1:47.65	
2	rubber	20.9	cold	13.9	1:44.11	96
3	rubber	19.9	cold	13.7	1:17.25	
1	rubber	21.2	Hot	25.2	00.47.28	46
2	rubber	~~20~~ 21.0	Hot	24.7	00.46.72	
3	rubber	21.1	Hot	26.3	00.45.55	

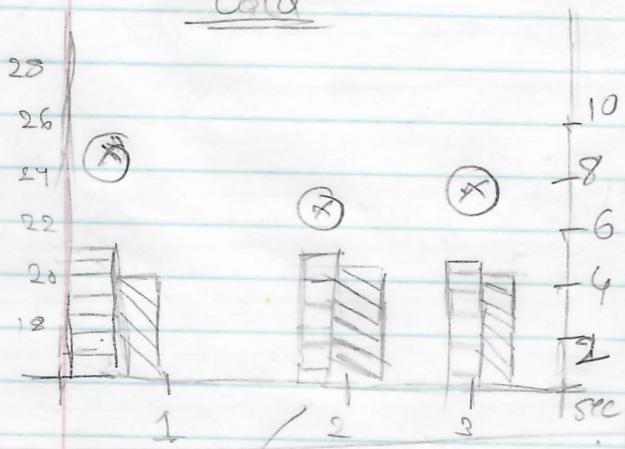
Cold



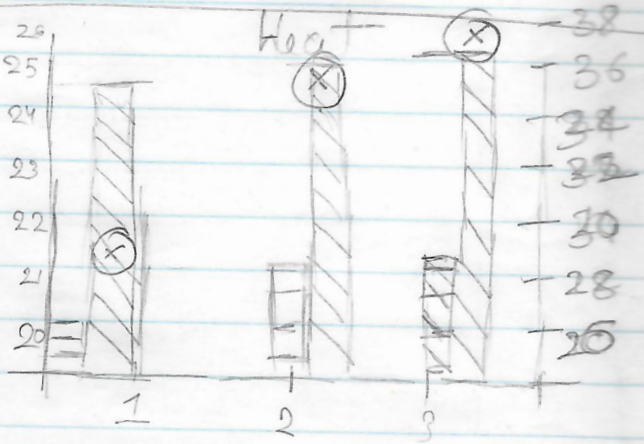
Heat



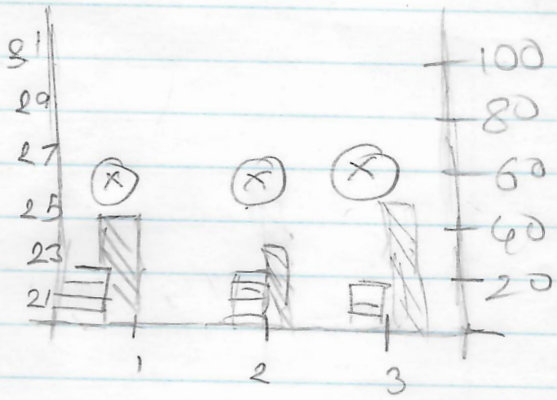
Cold



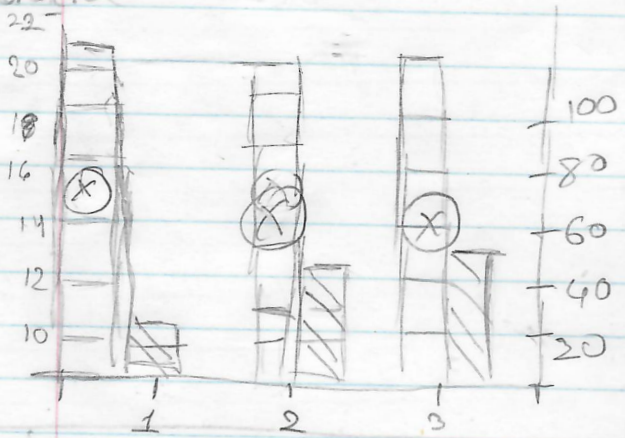
Heat



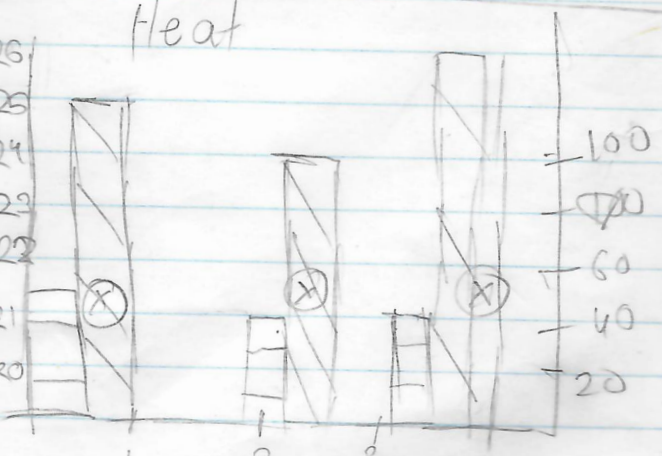
Heat



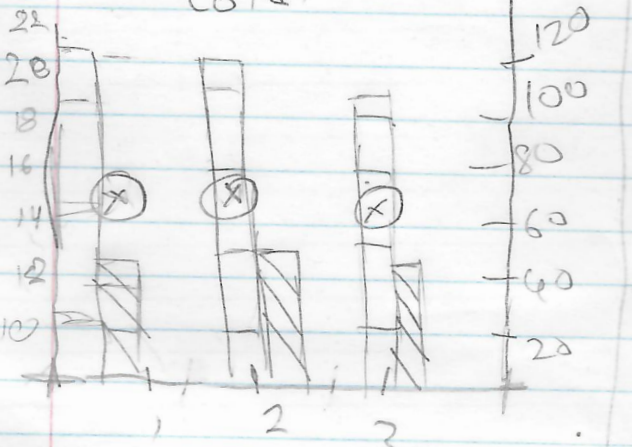
Cold



Heat



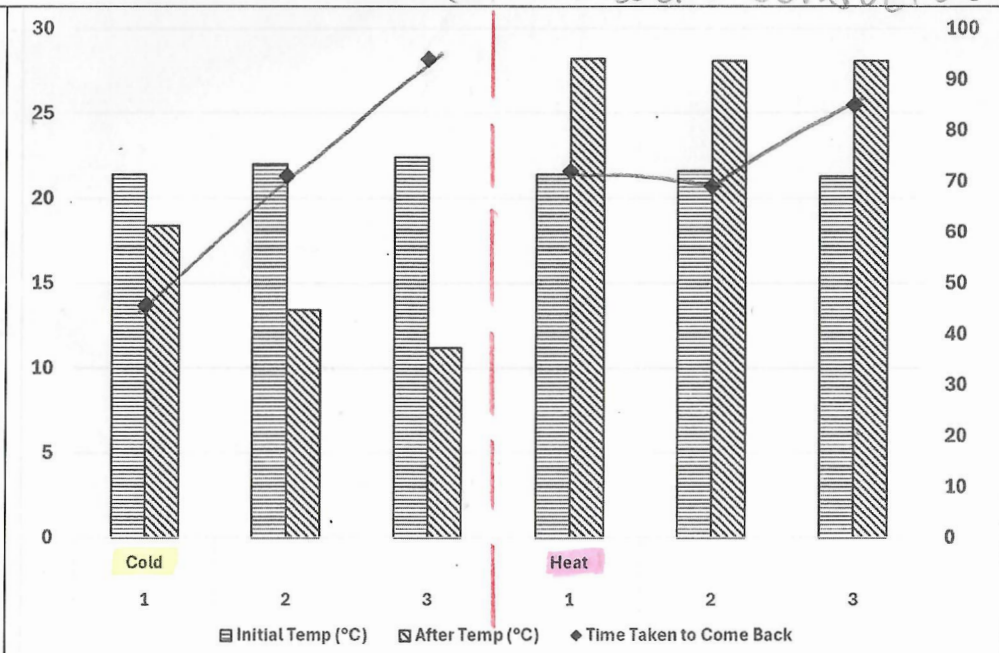
Cold



Heat and cold test were conducted for 5mins

Observation/ cold

Pothos

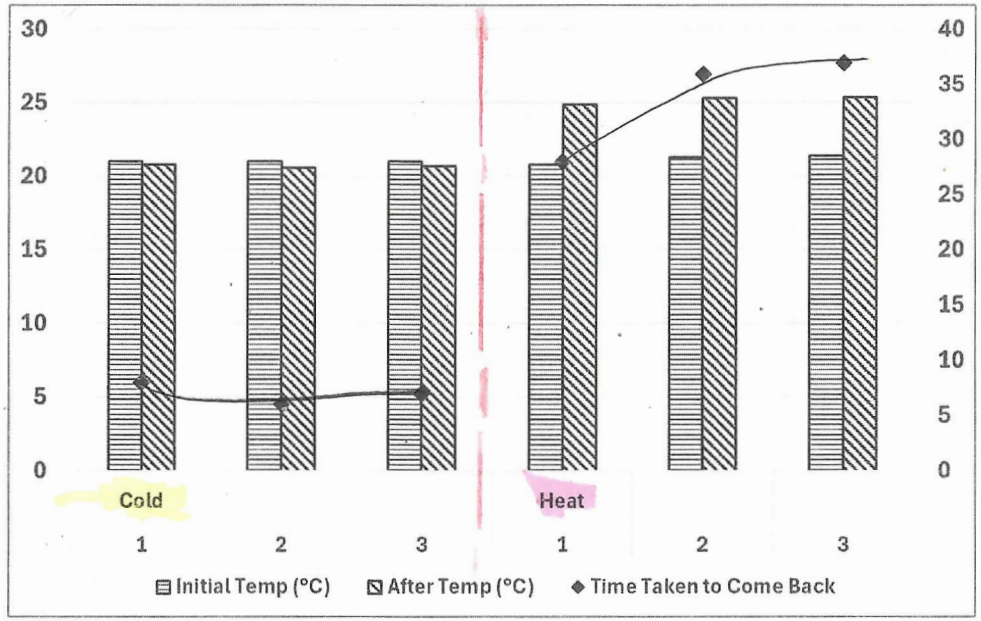


- For the cold test the temp went down from 22°c to 14°c and it took an average of 70s to come back to normal

Heat

- Whenheat was added the temperature went up to 28°C from 21°C and and averge of 75secs to com backto to normal

ZZ



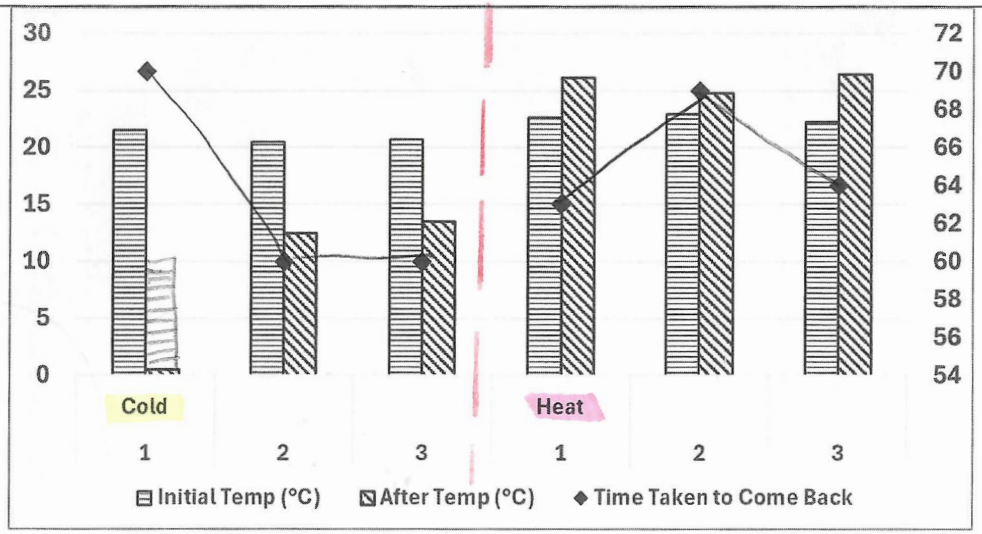
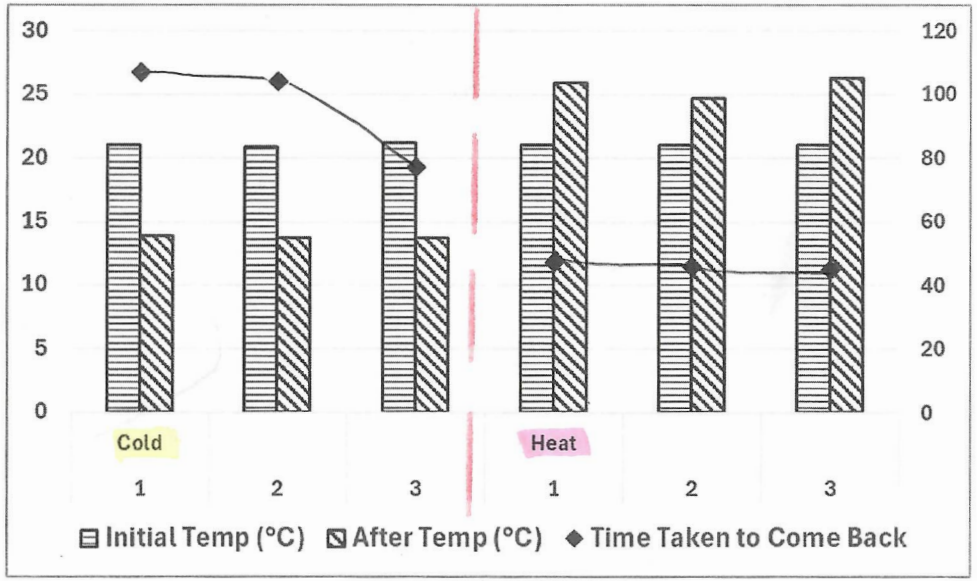
Cold

- When coldness was added the temp went downfromm 21 to 20°C and it took 7secs to come backto normal

Heat

- When heat was added the temperature went up to 25°C and it took 83sec to come back to normal

OBSERVATION

Mostera		Cold • For the cold test the temp went down from 21 to 10°C and took 33 secs to come back to normal Heat • When Heat was added the temp went up to 25°C from 21°C and took 65 secs to come back to normal
Ficus elastica (Rubber plant)		Cold • For the cold test the temperature went down to 13°C and took 96 secs to come back to normal Heat • When heat was added the temp went up to 25°C and took 46 secs to come back to normal