Change Food for Good.

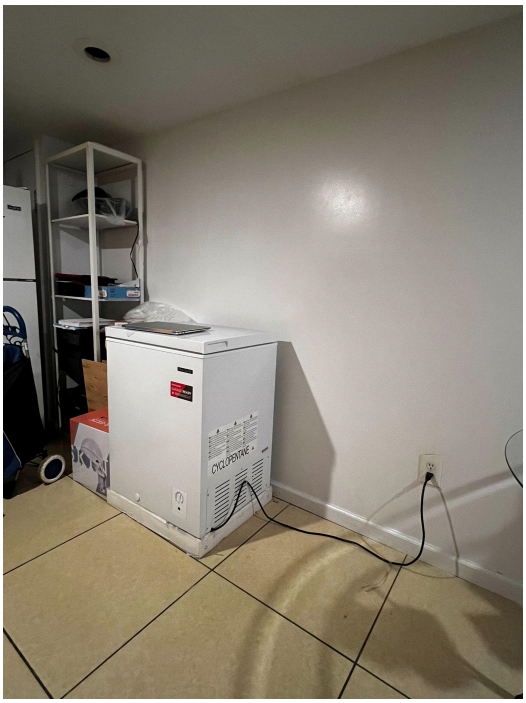
Farm Plan

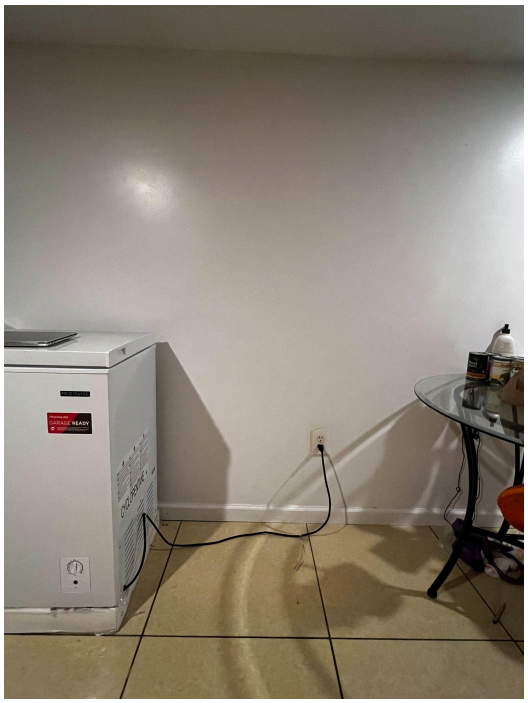
Student Name: Jenny Li	**Type Of System:** Deep Water Culture System (DWC)	**Design Link:** 3D Model on Sketchup
Crop Name: Alpine Strawberries		
Crop Family/ Plant Zone: Rosaceae family/ Zones 3-10		
Growing Conditions		
Ideal PH (Potential Hydrogen)	5.5 - 7.0	
Ideal EC (Electrical Conductivity) (If there is a range of EC for different stages of growth, list all that apply)	1.0 - 1.5 mS/cm	
Recommended Nutrient Blend	NPK (nitrogen, phosphorus, and potassium) are three elements found in fertilizer mixtures. A 10-10-10 or 12-12-12 balanced fertilizer. For organic garden, choose from blood meal, kelp meal, soybean meal, and alfalfa meal.	
Ideal Temperature Range	During the growing season, alpine strawberries grow and produce best when temperatures range between 60˚F and 80˚F	
Ideal CO2 (parts per million)	Around 1000 parts per million (ppm) and up to 1200 parts per million (ppm)	
Ideal RH (Relative Humidity)	60-75% relative humidity	
Ideal VPD (Vapor Pressure Deficit)	Ideal VPD: 0.3-1.2 kPa, depending on the temperature.	
Spacing Required Between Plants	6" - 8" apart	

Additional Growing Details		
Days to Germination	Days to Transplant	Days to Harvest
4 - 6 weeks (28 - 42 days)	7 - 10 days	85 - 100 days
Specialized Germination Conditions	Y [✓] Strawberries need adequate temperature, humidity, and lighting.	N [ ]
Trellis Needed	Y [✓] Strawberry branches can become heavy when they produce the fruit. Lightweight trellises, netting, or ties to support the weight vertically.	N [ ]
Pollination Needed	Y [✓] Manual pollination is needed when they are in bloom by using a soft brush or your fingers to transfer pollen between flowers.	N [ ]
Pruning Needed	Y [✓] Remove old leaves, runners and flowers.	N [ ]
Flowering Crop	Y [ ]	N [✓]
Single Harvest or Multiple Harvest	Multiple harvest	
Annual Or Perennial	Perennial	
Cool or Warm Weather Crop	Cool weather crop	
Growing Medium Used	Rockwool	
# of People Fed by Yield	A serving size of ½ cup of strawberries per person, one alpine strawberry plant could produce enough fruit for about 2 to 3 servings in a season.	
Light Requirements		
Ideal PPFD	Minimum should be 400 PPFD but most growth potential at 600 PPFD.	

Ideal DLI Range	20 - 25 mol/m2/d, with a minimum of 10-12 mol/m2/d	
Number of Hours Required Under Light	4 - 6 hours	
Distance Required from Light	Depends on the growth phase but 24" - 30" is usually the range, depending on the size of the light chosen too.	
Natural Lighting Used? Estimate Number of Hours	At least 6 hours of sun	
Grow Area Information		
Measurements of Space: [See Format]	*60"(L) x 48"(W) x 101"(H)*	
Measurements of Grow Bed: / System: [See Format]	*1'-4 ½" (L) x 10 ⅛" (W) x 8-¼" (H)*	
Size of Reservoir (gallons)	7 gallons	
Water Access Nearby	Y [✓]	N [ ]
Filtered Water (specify type of filter) or Tap Water	Filtered water upstairs (specific type unknown) / Tap water	
Outlets Nearby	Y [✓]	N [ ]
Outlets with GCFI	Y [✓]	N [ ]
Storage Space Available	Y [✓]	N [ ]
Steady Wifi	Y [✓]	N [ ]
Pests Present	No	
Electrical Hazards Present	No	
Chemical Hazards Present	No	
Pictures of Grow Area		

** the mini fridge can be moved**





Links Referenced - (Alpine Strawberries)

https://www.finegardening.com/article/alpine-strawberries#:~:text=Alpine%20strawberries%20are%20easygoing%20plants,hours%20of%20sun%20a%20day.

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https://www.epicgardening.com/alpine-strawberries/

https://buzzyseeds.com/blogs/growing-guides/how-to-grow-alpine-strawberry-from-seed#:~:text=Patience%20is%20key!,fertilizer%20mixed%20at%20half%2Dstrength.

https://www.mdpi.com/2223-7747/12/4/731#:~:text=It%20is%20recommended%20to%20maintain,production%20in%20greenhouses%20%5B40%5D.

https://www.sansiled.com/blogs/learn/indoor-houseplant-guide-how-to-grow-strawberries-indoors?srsltid=AfmBOooMwrsSpU5frlHyu7RQa7ZvlfTg1YoQYQsMkE1Ud5QFLZo0n37e

https://tinygreengrowers.com/2022/03/24/alpine-strawberry-grow-guide/

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Farm Plan

Student Name: Jenny Li	**Type Of System:** Nutrient Film Technique (NFT)	**Design Link:** 3D Model on Sketchup
Crop Name: Bloomsdale Spinach		
Crop Family/ Plant Zone: Amaranthaceous family/ Zones 3 - 9		
Growing Conditions		
Ideal PH (Potential Hydrogen)	Potential Hydrogen (PH) - "is a measure of the acidity or the alkalinity of a solution, indicating how acidic or basic a substance is. The pH scale ranges from 0 to 14. 5.5 - 7.0	
Ideal EC (Electrical Conductivity) (If there is a range of EC for different stages of growth, list all that apply)	Electrical Conductivity (EC) - "is a measure of a solution's ability to conduct electricity, which directly relates to the concentration of dissolved salts and ions in that solution." 1.5 - 2.5 mS/cm	
Recommended Nutrient Blend	NPK (nitrogen, phosphorus, and potassium) are three elements found in fertilizer mixtures. A 10-10-10 balanced fertilizer or 16-4-8 (higher nitrogen for leafy greens).	
Ideal Temperature Range	Avoid temperatures above 75˚F. The ideal temperature range is 60˚F - 70˚F.	
Ideal CO2 (parts per million)	Around 1000 parts per million (ppm) and up to 1500 parts per million (ppm)	
Ideal RH (Relative Humidity)	Relative Humidity (RH) - "is a measure of the amount of water vapor present in the air relative to the maximum amount the air can hold at a specific temperature." 40 - 70% relative humidity	
Ideal VPD (Vapor Pressure Deficit)	Vapor Pressure Deficit (VPD) - "is the measure of the difference between the amount of moisture in the air and the maximum amount of moisture the air can hold at a specific temperature. It indicates how much water vapor	

	the air can still absorb before it becomes saturated." 0.5 to 1.0 kPa	
Spacing Required Between Plants	4" - 6" apart	
Additional Growing Details		
Days to Germination	Days to Transplant	Days to Harvest
7 - 14 days	3 - 4 weeks (21 - 28 days)	40 - 48 days
Specialized Germination Conditions	Y [✓] Bloomsdale spinach prefers cooler conditions and can be sensitive to temperature..	N [ ]
Trellis Needed	Y [ ]	N [✓]
Pollination Needed	Y [ ]	N [✓]
Pruning Needed	Y [ ]	N [✓]
Flowering Crop	Y [✓]	N [ ]
Single Harvest or Multiple Harvest	Multiple harvest	
Annual Or Perennial	Annual	
Cool or Warm Weather Crop	Cool weather crop	
Growing Medium Used	Rockwool	
# of People Fed by Yield	A standard serving size of cooked spinach is about 1 cup, which weighs approximately 6 - 7 ounces. With 4 pounds (64 ounces) of spinach per square foot, that will equal to feeding about 10-11 people.	
Light Requirements		
Ideal PPFD	It typically ranges between 200 - 400 PPFD.	
Ideal DLI Range	It typically falls between 12 - 18 mol/m2/d	
Number of Hours Required Under Light	12 - 16 hours per day	
Distance Required from Light	12" - 24"	

Natural Lighting Used? Estimate Number of Hours	10 - 14 hours a day	
Grow Area Information		
Measurements of Space: [See Format]	*60"(L) x 48"(W) x 101"(H)*	
Measurements of Grow Bed: / System: [See Format]	*60"(L) x 48"(W) x 58"(H)*	
Size of Reservoir (gallons)	7 gallons	
Water Access Nearby	Y [✓]	N [ ]
Filtered Water (specify type of filter) or Tap Water	Filtered water upstairs (specific type unknown) / Tap water	
Outlets Nearby	Y [✓]	N [ ]
Outlets with GCFI	Y [✓]	N [ ]
Storage Space Available	Y [✓]	N [ ]
Steady Wifi	Y [✓]	N [ ]
Pests Present	No	
Electrical Hazards Present	No	
Chemical Hazards Present	No	
Pictures of Grow Area		

[same grow area as the Alpine strawberries]

Links Referenced -

https://getgrowee.com/how-to-grow-spinach-hydroponically/#:~:text=The%20optimal%20pH%20for%20hydroponic%20spinach%20growth%20is%20between%205.5%20and%206.5.

https://hydrohowto.com/grow-spinach-hydroponically/