

INTELLECTUAL PROPERTY  
ESSAY EXAM

# Hydroponic Warfare



Prof. Eric E. Johnson  
[ericejohnson.com](http://ericejohnson.com)

**Recommended time as a practice exam: Three hours**

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## Hydroponic Warfare

HAYLEY GREW UP WANTING TO BE A FARMER. She was even president of her 4-H club in high school. Yet she couldn't feel at home anywhere but the arid, sunny Southwest. That all but foreordained Hayley to own and run a desert greenhouse farm.

To passing motorists on the highway, Hayley's farm might look like a high-tech military installation. The rows of silvery, semi-tubular greenhouses hold in precious water while soaking up the desert sunshine for year-round growing. Like many such farms, Hayley's operation is specialized for growing fruits and vegetables (i.e., "produce"). That includes tomatoes, lettuce, and – best of all – strawberries, which are Hayley's favorite fruit and top crop.

Some of Hayley's greenhouses use soil. But most are specially outfitted for hydroponic farming, which is farming without soil. In hydroponic agriculture, plants are grown in a hydroponic solution – a liquid consisting of water with dissolved minerals and nutrients.

In early 2018, Hayley began to experiment with a strawberry variety she got from Japan called *Fragaria fythoreglies* – an unpatented variety originally developed in the late 1990s. *F. fythoreglies*, as it is called for short, had never been very successful. In fact, as far as Hayley was aware, no one had ever grown it commercially. It had a wonderfully sweet taste, but the yield was extremely low. While most commercial strawberry varieties could yield as much as 20,000 pounds of fruit per acre, *F. fythoreglies* could only produce about 1,000 pounds per acre. And that was when it didn't fail altogether. The variety was extremely finicky. Varying weather conditions during the growing cycle would sometimes cause the plant to not provide any fruit at all, or to grow malformed fruits, or to grow fruits that never matured. But the awkward, demanding, and fragile nature of *F. fythoreglies* somehow appealed to Hayley. She liked a challenge.

Hayley worked with *F. fythoreglies* hydroponically, and as she experimented, she kept fastidious notes about the temperature, humidity, sunlight, and other conditions to which her plants were exposed. She kept her research secret, not sharing any of her notes or newly acquired knowledge with anyone. As the months went by, Hayley found lots of interesting and strange results with *F. fythoreglies*, all correlated to different growing conditions. But one result was extraordinary: There was a certain narrow band of temperature that, if held consistently as the plant grew, would cause *F. fythoreglies* to produce seedless strawberries – yes *seedless*! The yield was miserably low, although Hayley found that by additionally holding humidity within a narrow band the yield would be increased – at least somewhat.

A number of fruits are available in seedless forms – including oranges, grapes, and watermelons. But to Hayley's knowledge, and according to respected, published sources, there had never before been seedless strawberries. It was potentially very valuable commercially. From a bit of internet surfing, Hayley found there were a lot of people who didn't like strawberries because of their little seeds but who did love the fruit's taste.

Based on her experimental work, on October 4, 2018, Hayley filed two utility patent applications related to seedless strawberry growing.

But more on that later.

Wanting to take up a new creative endeavor while waiting to hear back from the patent office, Hayley decided to try her hand at making online videos about strawberries. Her first video was called *All About Strawberries*, and she uploaded it to the video-sharing website YouTube.

Having watched bazillions of YouTube videos, but not having done any herself, Hayley wasn't sure how to proceed. She decided to start with the tried-and-true traditional method her high school public speaking class had taught her – begin with a quote. The video opened by showing Hayley in her kitchen as she looked into the camera and quoted an astronomer famous from a public television series in the 1980s: “All of the wonders of the universe are to be found – if one looks closely enough – in a single strawberry.” (It was one of only 15 quotes about strawberries that Hayley found when she googled “quotes about strawberries.”) She then proceeded to introduce herself.

The second portion of the video involved Hayley doing a voice-over while the video showed a succession of 12 historical public domain pictures, Hayley talked about the history of the strawberry, emphasizing the important moment in the 1750s when the first garden strawberry was created in France by crossing a berry from western South America with a berry from eastern North America.

The third portion of *All About Strawberries* was a scene where Hayley walked through her greenhouse while talking into the camera. During that scene, Hayley discussed how long it takes strawberries to develop and ripen, and how to pick them.

The fourth and last portion of the video found Hayley back in her kitchen, where she looked into the camera and showed off examples of dishes made with strawberries. She encouraged her viewers to go to her website for delicious strawberry recipes – and, of course, to like her video and subscribe to her YouTube channel.

The whole video was about four minutes total, which each of the four portions being about one minute each. Hayley produced the video herself using her laptop. She wrote it herself and filmed all of it too, except for the portion where she was walking through the greenhouse. For that scene, Hayley had the help of a freelancer she hired off the internet named Corbin Clamersley. He was very knowledgeable, making choices about how to compose the shot, giving great attention to lighting and framing. And Hayley happily used his ideas for the scene about where she should walk, where she should pause walking, and so forth.

Understanding that it would be important to get Corbin to sign something so that she would own all the rights, Hayley printed out a form from the internet and had Corbin sign it. Unfortunately, because Hayley is really disorganized with paper, she can't put her hands on the original signed version. Based on her browser history, she knows that she (as “Producer”) and Corbin (as “Camera Operator”) signed either a form from the website Venture Video or from the website Lyttle Legal. The Venture Video form stated, “Camera Operator and Producer agree that the video she/he is making, as part of an audiovisual work, is a work made for hire, the author of which is Producer.” The form from Lyttle Legal stated, “Camera Operator agrees that upon payment of the agreed-upon fee, the video recording will be turned over to Producer, who shall then own it in full.” Indeed, after Corbin was done working, Hayley paid

him, and Corbin then gave Hayley the camera's memory card with the sound and video recording on it.

Soon after debuting *All About Strawberries* on YouTube, Hayley got a rude blast from the past. It was Yasmin Youngren, her long-time rival.

Hayley and Yasmin grew up together, attending the same schools – every year in the same grade. The two tended to be interested in the same things and were highly competitive. Hayley thought their competition was friendly. But she had to admit there was bad blood after Hayley narrowly beat Yasmin in the election for 4-H club president. The friction didn't ebb when the two entered adulthood either, probably because they happened to stay on similar paths. Yasmin, too, became a greenhouse farmer. In fact, she owned a facility about 10 miles north of Hayley, where Yasmin grew hydroponic fruits and vegetables. Hayley and Yasmin exchanged polite chit chat when they ran across one another in town. But Hayley sensed a simmering bitterness from Yasmin that she didn't know how to defuse. Did Yasmin really have it in for Hayley after all these years?

Yes, it turned out. A resounding yes.

Two weeks after *All About Strawberries* was uploaded, a new YouTube video was uploaded by Yasmin. It was titled *Wonderful World of Strawberries*.

Like *All About Strawberries*, Yasmin's *Wonderful World of Strawberries* video also began with a quote – in fact the same quote from the same famous astronomer. The quote was, however, not delivered in a kitchen. Instead, it was delivered while Yasmin was outside mounted on a horse. Yasmin then introduced herself.

Except for the first quote, nothing else in Yasmin's video involved the same wording as Hayley's video, but there was a lot more that was similar.

The second portion of Yasmin's video was, like Hayley's, a historical discussion about the first garden strawberry being created in France in the 1750s – also mentioning the crossing of plants from eastern North America and western South America. (Hayley figured that Yasmin had probably gotten that factoid from the first paragraph of the Wikipedia article on strawberries, just like Hayley had.) And the historical information was delivered as a voice-over while the video showed a succession of 15 historical images – eight of which were among the exact same public domain images that Hayley had used.

Then *Wonderful World of Strawberries* switched to a scene in Yasmin's greenhouse, where Yasmin talked while looking at the camera. She talked about how strawberries develop and ripen and how to pick them. In fact, Yasmin used nine of the 17 facts that Hayley had used during her own greenhouse talk.

In the final scene, Yasmin was back on horseback. That's when the twist came.

While sitting high in the saddle, Yasmin began talking about Hayley: "A friend of mine from high school also grows strawberries in greenhouses. Her name is Hayley Hayworth," Yasmin said. The video then switched to the footage from the greenhouse scene in *All About Strawberries*. As Yasmin talked, the whole scene played, the audio being replaced by Yasmin's voice over. "That's her. I can understand why she would want to show off her strawberries and talk all about them. It's probably because about three years ago she sold lettuce that turned out to be the source of an *E. coli* outbreak. Do you remember the one that killed two people and sickened more than a dozen people across three states? Yes, that was Hayley Hayworth, and that deadly lettuce

came from that farm she's trying to portray as harmless and filled with delicious strawberries – that, impliedly, won't make you sick."

The video then switched back to Yasmin on horseback. "Look, Hayley has struggled with food safety issues. The fact is, our regulatory system needs to do something constructive to help protect consumers from farm-borne dangers. That's why I'm supporting tightened U.S. Department of Agriculture regulations that would require mandatory continuing education for farmers, such as Hayley, who have sold produce that has ended up causing death. With more effort, we can avoid additional deaths, whether from strawberries or from any other kind of produce."

And that was the end of Yasmin's video.

The worst thing about it was that it was true: Hayley's farm *had* been the source of the *E. coli* outbreak that had killed two people and sickened 13 others. So much for being able to move on.

Hayley dropped her YouTube ambitions and, badly needing a distraction, isolated herself on her farm, turning her full attentions back to the technical aspects of strawberry growing.

Because fine control can be exercised over the nutrient and mineral content of hydroponic solutions, Hayley had a hunch that playing with different concentrations of elements might do something beneficial to the *F. fythoreglies* strawberries. And in April 2020, she got an a result that was beyond her wildest dreams.

Hayley found that by using a hydroponic solution with a level of 2.0 parts per million of molybdenum (known to be essential to plant growth as an enzyme component) and 0.1 parts per million of thulium (hitherto not known to have any role in supporting plant growth), Hayley got 10 times the yield of seedless strawberries from *F. fythoreglies* than she'd been able to produce previously. This was a huge breakthrough – it meant that commercial-scale production of seedless strawberries was now realizable!

Hayley set about re-configuring her greenhouses to get ready to produce seedless strawberries from *F. fythoreglies* according to her methods. She was careful to keep what she was doing under wraps as much as possible. Concealing the molybdenum and thulium mineral content was easy. She added the minerals into the hydroponic solution out of sight of her employees. And there was nothing that one could do in terms of analyzing the resulting fruit that would reveal what was in the hydroponic solution used to grow it. Hayley kept the formula in her office, which she made sure was locked at all times. And she allowed no one in her office unsupervised.

Then, on the night of May 1, 2020, something bad happened. There was a break-in. A burglar disabled the farm offices' electronic security system and smashed Hayley's office window with a rock to gain entry. Papers had been shuffled through. Nothing was taken however. The only clue Hayley could find as to who had been there was a broken bracelet with the initials Y.Y. on it. Could that possibly be Yasmin Youngren? Even as vindictive as she was, Hayley couldn't imagine Yasmin committing a crime like this.

Happily, there was soon fantastic news for Hayley. She learned that the first utility patent application she had filed back on October 4, 2018 was issued on May 12, 2020 as the '121 patent. It included the following claims:

I claim:

1. A method for yielding seedless strawberries of an *F. fythoreglies* plant, comprising:

monitoring the air temperature of an enclosure in which said *F. fythoreglies* plant is grown;

whereby air temperature of higher than 30.5 degrees Celsius indicates a need to decrease the air temperature, and

whereby air temperature of lower than 29.5 degrees Celsius indicates a need to increase the air temperature.

2. A method according to claim 1, additionally comprising:

monitoring the relative humidity of said enclosure in which said *F. fythoreglies* plant is grown;

whereby relative humidity of higher than 87% indicates a need to decrease the relative humidity, and

whereby relative humidity of lower than 85% indicates a need to increase the relative humidity.

Then, on July 28, 2020, a second patent! The second utility patent application Hayley had filed, also on October 4, 2018, was issued as the '888 patent. Claim 8 of that patent covered something that never existed before Hayley made it: an automated greenhouse growing *F. fythoreglies* strawberries according to Hayley's method of keeping the humidity within the appropriate bounds.

The invention claimed in claim 8 of the '888 patent had the following elements: a greenhouse enclosure, *F. fythoreglies* strawberries grown therein, a hygrometer (i.e., a humidity measurer), a system for lowering or raising the humidity, and a controller for that system for lowering or raising the humidity in the enclosure as necessary to keep it within the bounds of 85% to 87%. (Claim 8 didn't say anything about temperature.)

Hayley was not the first person to come up with an automated greenhouse to control humidity. Those dated back to at least the 1950s, where they were fully described in various horticultural magazines and journals. Such facilities were used for growing thousands of different plants. Those automated greenhouses had all the same elements as Hayley's claim 8 greenhouse *except* for the inclusion of *F. fythoreglies* strawberries and that plant's particular targeted humidity bounds. It was these aspects, in fact, that constituted the advance Hayley was so proud of – and they had not previously been part of any automated greenhouse before October 4, 2018 (with the exception of experiments that Hayley carried out in private, which she revealed to no one).

Late in the summer of 2020, Hayley was finally ready to begin selling *F. fythoreglies* seedless strawberries.

For a brand name, she picked Ruddy Girl. The word “ruddy” (rhymes with “muddy”) means having a healthy red color – something that was true of Hayley's own complexion. Hayley started shipping Ruddy Girl strawberries to stores in New Mexico, Arizona, and California on August 4, 2020, and they were sold to consumers in grocery stores the next day.

For months, everything was great. The strawberries were wildly popular, and Hayley was able to charge a high premium price.

Unfortunately, on December 9, 2020, Hayley got something very unwelcome in her mailbox: a letter from Paradise Prairie Produce of Massachusetts that said Hayley's Ruddy Girl seedless strawberries were infringing on Paradise Prairie's Ruby Girl mark, which was registered three years ago on the principal register for blueberries.

The word "ruby," as you may know, refers to a precious gem of corundum with varying colors of red – or by extension the color red, particularly an intense hue of red. Paradise Prairie said in the letter that it markets Ruby Girl blueberries in the states of Massachusetts and New Hampshire, where it sells approximately 1000 quart-sized packages a year. The letter stated that the words "Ruddy Girl" were too close to "Ruby Girl," and thus Hayley was infringing on Paradise Produce's exclusive rights. The letter also noted something Hayley knew to be true from her own experience, that packaged blueberries are often sold in the same refrigerated bin in the produce section of grocery stores. Moreover, the letter stated, Paradise Prairie was actively considering beginning to sell strawberries under its Ruby Girl brand. The letter concluded by demanding that Hayley immediately cease and desist use of "Ruddy Girl" in all sales and marketing activities.

Receiving the letter completely ruined Hayley's day. How could Paradise Produce in New England be bothered by the strawberries she was selling in the Southwest? It was ridiculous, Hayley thought. She also rolled her eyes about the recitation of their sales figures. Who cares that they've been selling about 1,000 quarts of Ruby Girl berries a year? Hayley was shipping 6,000 quarts of Ruddy Girl seedless strawberries *per week*. Keeping that pace up would work out to 312,000 quarts per year. Plus: "Ruby Girl" for blueberries – which are *blue*? What kind of a stupid name was that?

The next day, December 10, 2020, Hayley was trying to make progress on calming down when she received a call from Gary Glennrobin, CEO of a grocery chain that was Hayley's single biggest buyer.

It was nice to get a call from Gary, whom Hayley considered a personal friend. In the past couple of months, Gary had called Hayley once or twice a month letting her know how successful her seedless strawberries were – and asking her if she could supply more.

In the beginning chit-chat phase of their December 10 conversation, Hayley said that she had been feeling down after receiving what she described as a "ridiculous trademark cease-and-desist letter" from the tiny Paradise Prairie Produce company in New England. "What's your take?" she asked Gary.

"I'll tell you point blank: That's absurd," Gary said. "At any rate, I think your best trademark is the seedless strawberries themselves. I've learned that I've got customers coming into my stores all over the Los Angeles and Phoenix metro areas asking for seedless strawberries. With you as the only seedless strawberry provider, *seedless strawberries are you, and you are seedless strawberries*. So in my opinion, for what it's worth, Hayley, the Ruddy Girl trademark isn't important at all. As far as I can tell from the reports I get from my produce managers, customers don't go by the name Ruddy Girl at all. They go by the seedlessness of the strawberries. I've believe I've

heard lawyers talk about that as protectable product configuration. That's what I think you have, Hayley. It's beyond amazing."

"Thank you Gary," Hayley said. "I really needed to hear that. So are you calling again to ask for more seedless Ruddy Girl strawberries? I'm doing all I can to increase production. I promise you that."

"Well, Hayley, the thing is that yes, I do need more seedless strawberries. Lots more. And that's why I wanted to call you as your friend and as your customer. To let you know, in case you hadn't learned already, that someone's making the rounds trying to get some advance orders – a competitor I guess – for seedless strawberries."

"What?" Hayley was shocked.

"Yeah, Hayley. I'm sorry I'm the one to tell you this. This woman came by my office with a sample."

Hayley suddenly laughed. "Well, it must have been someone who was extremely lucky to have produced a couple of seedless strawberries by accident. Enough to try to palm off as samples," Hayley said. "But my patented inventions and secret horticultural methods are what allow me to yield seedless strawberries in enough quantities to actually fill orders."

"Well," Gary said, "this woman seemed pretty sure of herself. She said she'd start harvesting in a few days and would be able to ship several thousand per week. I don't know if you've ever run across this woman. Her name's Yasmin Youngren."

Hayley's mind exploded.

"Gary, thank you for the call. I really appreciate it." And with that, she hung up. So Yasmin *had* been the burglar on the night of May 1, 2020! And she must be a patent infringer too, Hayley thought. She immediately texted Yasmin and asked if she'd like to meet for coffee at an outdoor patio café in town.

Yasmin immediately responded with a yes.

An hour later, the two frenemies exchanged polite hellos, sat down, and then Hayley cut to the chase: "The reason I wanted to meet with you is to ask you why you are infringing my patent rights and why you broke into my offices to steal my seedless strawberry secrets."

"Ha ha," Yasmin said. Then, lowering her voice to a whisper: "Yup, just 2.0 parts per million of molybdenum and 0.1 parts per million of thulium – your mineral secret." Then, returning to a normal vocal volume, Yasmin continued. "It works like magic! What originally piqued my interest was seeing your patent applications, which the USPTO published on April 9, 2020. When I saw those, I was blown away. Seedless strawberries! Brilliant! I immediately started implementing the method in claims 1 and 2 of the '121 application, and I built and used the greenhouses of claim 8 of the '888 application. And I've continued those right to the present. But I wondered what other genius stuff you'd come up with. So I decided to find out. Yeah, it turns out you can get lots of seedless strawberries with the method of claim 2. But using your secret hydroponic formula increases the yield of seedless strawberries beyond the patented method by a factor of 10! I'm so glad I dropped by your office that night! But don't worry. I haven't told anyone – I'm keeping it all under wraps, behind closed doors, and I have no interest in sharing it. I've got acres of greenhouse cultivation right now using everything from claim 1, claim 2, and claim 8, plus the secret. And next week, I'll be the world's leading producer of seedless strawberries!"



Hayley was red-faced with anger. “This is war, Yasmin. I’m going to sue the living ...”

“Whoa,” Yasmin said, interrupting. “I can hire lots of lawyers, too, Hayley. In fact, I already have! Here’s something they dug up that you should see. Take this. It’s your copy. I printed it out for you.”

Yasmin handed Hayley a print-out of a patent – the ’000 patent – issued to Olivia Obanark. It had a filing date of August 3, 2016, and it had an issue date and first publication date of November 7, 2017. The ’000 patent had this passage in its specification, which Yasmin had highlighted in fluorescent yellow:

“In growing *F. fythoreglies* to yield seedless strawberries, it is crucially important to keep the temperature within half a degree Celsius of 30 degrees – if the temperature goes out of those bounds, then the temperature must be immediately increased or decreased to get it back within that margin to ensure the optimal yield of seedless fruits.”

Notably, the ’000 patent did not claim any method concerning the growing of strawberries or any other plant. Rather, the ’000 patent claimed a greenhouse sprayer system. The statement about *F. fythoreglies* seedless strawberries was offered only in an almost off-hand way as support for why the sprayer system was useful and important.

Hayley got up and walked away. It was time to seek legal counsel.  
That’s you.

## ESSAY QUESTIONS

Provide advice and analysis for Hayley by answering the questions below. In your discussion, include applicable defenses, but please **omit all discussion of remedies**.

Also, to keep things less complex, let me give you this: **There are no issues concerning plant patents or plant variety protection certificates**. I know, the whole thing is about plants, but believe me. Also in the vein of keeping you from chasing down non-existent issues, I can tell you **there are no issues regarding anything concerning “best mode.”**

In your response, please label the portions of your response in correspondence to the questions below. For example, write “1” on a line by itself or “QUESTION 1” to mark your answer to Question 1.

- 1. Discuss Hayley’s prospects for a lawsuit against Yasmin for copyright infringement concerning the videos.** Within your discussion, please explain if it makes any difference whether Hayley and Corbin signed the form from the Venture Video website or the form from the Lyttle Legal website – and if so, what and why.
- 2. Discuss Hayley’s prospects for a lawsuit against Yasmin for patent infringement of claims 1 and 2 of the ’121 patent and claim 8 of the ’888 patent.**

3. **Discuss Hayley’s prospects for using intellectual property law to stop Yasmin from using the formula for the hydroponic solution of molybdenum and thulium.**
4. **Discuss Hayley’s prospects for using trademark law to stop Yasmin from selling seedless strawberries.** Hayley wants to know if what Gary said was plausible – could she protect seedless strawberries themselves through trademark law (i.e., including “trade dress protection” or “protectible product configuration”)?
5. **Discuss Hayley’s potential for liability for trademark infringement if sued by Paradise Prairie Produce.**

[FOR EMPHASIS, I reprint instructions 10.d–e, from the beginning of this booklet, here:

- d. Important: **Limit your discussion to the questions posed.** Leave out parties and causes of action not embraced by any question. Also: **Please do not repeat the exact same analysis when discussing a different aspect of something.** Instead, if analysis of an issue is similar to but not exactly the same as what you have written previously, then I encourage you to refer to your prior analysis and go on to discuss any differences.
- e. **Note that the questions are not separately weighted; instead, they will be lumped together for assessment.** So divide your time among the questions according to what requires the most discussion and analysis. Plan ahead to put information where it belongs. And correspondingly: **Do not expect that each question calls for an equal share of your time or words. Consider that any given question might be appropriately answered with substantial brevity or might require in-depth treatment.**

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*Here are some suggested abbreviations for your answer:*

AA	<i>All About Strawberries</i>
CC	Corbin Clamersley
FF	<i>F. fythoreglies</i>
GG	Gary Glennrobin
HH	Hayley Hayworth
LL	Lyttle Legal
OO	Olivia Obanark
PP	Paradise Prairie Produce
SS	seedless strawberries
VV	Venture Video
WW	<i>Wonderful World of Strawberries</i>
YY	Yasmin Youngren
000	'000 (feel free to omit the leading apostrophe; it can be annoying to type)
121	'121 (same)
888	'888 (same)