

UBC Social, Ecological Economic Development Studies (SEEDS) Student Reports

The LFS Cropedia: Creating an UBC Agriculture Educational Resource

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I. ABSTRACT

LFS Cropedia was created to provide a quick and easy resource for volunteers and consumers to access information about crops grown at UBC Farm and the LFS Orchard Garden. Creating the webpage involved many steps and required that a large amount of time be allocated to planning and information gathering. Crop information topics that can be found in the Cropedia are growing conditions, seasonality, nutritional information, recipes, additional usage inventory, academic connections, and additional notes. A total of 44 crops can be currently found on the Cropedia website. The crops researched by group 16 are arugula, strawberries, beets, carrots, eggs, head lettuce, chard, kale, squash, pumpkin, spinach, and mixed greens. The Cropedia can be developed to bridge links between food producers and consumers, enabling them to connect with the food system. In the future, it is hoped that the Cropedia can be developed to also be used as a marketing tool for local farmers, restaurants that support environmental sustainability, and promote the values of UBC Farm and the LFS Orchard Garden.

II. INTRODUCTION

This paper was created by a team of undergraduate students of various academic backgrounds in Land and Food Systems 450: Land, Food, and Community III as part of the University of British Columbia Food System Project (UBCFSP). The purpose of this project is to provide an opportunity for students to continue developing the on-going partnership with UBC food systems in order to enhance and promote the social, ecological, and economic values of sustainability within the UBC campus community (Riseman, 2010).

The UBC Farm is a 24-hectare teaching, research, and community farm located on the UBC Vancouver campus (UBC Faculty of Agricultural Science, 2000). The LFS Orchard Garden (LFSOG) is located just outside the south and west entrance of the Macmillan building. The LFSOG is used to support urban agriculture, local food security, and is also used as a learning facility (LFS Orchard Garden Blog, 2010). Both the UBC Farm and the LFSOG grow produces that are used to supply the UBC campus community. Our group was assigned to create the LFS Cropedia webpage as a UBC urban agriculture educational resource and contains relevant information about the crops grown at the two locations.

Worldwide, people are dealing with the effects of greenhouse gases (GHG), which lead to unsustainable environment. The primary components of GHG are carbon dioxide, methane, and nitrous oxide, and can be sourced from food transportation, farm mechanization, and machines used during the food production process. Furthermore, GHG levels have increased resulting in air pollution causing many harmful health problems for vulnerable people. The GHG are also causing the overall global temperature

of the Earth's atmosphere, also known as global warming. Consequences of global warming, like declining water levels in the Great Lakes and an increase in extreme weather conditions, like droughts, ice storms, and heat waves, can have negative impacts on food systems by damaging farm crops and decreasing their yield. For instance, smog from GHG's can cause up to \$70 million in crop damage each year in southern Ontario (Bentley and Barker, 2005). Also, in the past 20 years, the amount of import and export of food has tripled; one quarter of Canada's energy consumption and one quarter of the GHG's can be attributed to food transport (FarmFolk/CityFolk Society, 2008).

Moreover, the number of overweight or obese Canadians has increased dramatically over the past couple decades, increasing the risk of onset of chronic diseases such as hypertension or high blood pressure, stroke, and type II diabetes for individuals in this category. There are many processed fast foods on the food market that usually contain high amounts of sugar, fat and sodium, all of which are not beneficial for human health when consumed in excess. Furthermore, the large portions of meals that people eat and a lack of physical activity are also factors contributing to weight gain. (Health Canada, 2010)

By growing and preparing locally produced foods, people can reduce their GHG emissions and potentially reduce their risk of becoming overweight or obese. People can reduce their GHG emissions and amount of fuel burned for food transport by decreasing the distance that their food has to travel. People can decrease GHG emission levels by not using fertilizer and chemical pesticides that can cause GHG effects. Also, growing, harvesting, and gardening can invite people to engage in physical activity, therefore reducing their risk of obesity, heart disease, and diabetes (Health Canada, 2006). Halweil

and Nierenberg (2007) note that by producing locally grown food, it can increase people's awareness of the importance of being actively involved in planning their diet.

In addition, UBC is aware about the value of sustainability and the importance of growing, producing, and eating local foods. In March 2010 at the GLOBE 2010 conference, one of the world's largest environmental conferences, UBC President, Stephen Toope, informed the public about the university's commitment to reduce greenhouse gases on the UBC Vancouver campus (University of British Columbia, 2010). The crops grown at the UBC Farm and LFSOG provide food source for UBC food venues such as the AMS Food and Beverage, UBC Food Services, Agora Café, Sprouts outlet, and to the wider community through farm market sales and the Community Supported Agriculture (CSA) programme.

Our group decided to design the Cropedia website so that it can be a useful information resource for volunteer aide and customers who frequent Agora café, Sprouts, UBC Farm and the LFSOG. The LFS Cropedia is a media resource containing compiled information about the crops grown at UBC Farm and the LFSOG: crop variety, growing conditions, seasonality, nutritional information, recipes, additional usage inventory and ideas, academic connections, and other interesting facts about the crops. With this resource, volunteers and customers have quick and easy access to information about the crops, become more aware about the importance of sustainability and growing local produce, and are able to share this information with others in their community.

III. PROJECT GOALS AND GROUP REFLECTION ON THE VISION

STATEMENTS

Creating Awareness of Local Foods Available

The purpose for creating the Cropedia webpage is to increase awareness of food seasonality and local food to ensure the quality and safety of the food system as well as to promote the sustainable community.

To respond to the problem of greenhouse gas emission and food security issues, turning back the food system to the local food production has been suggested to solve these problems. The UBC food system is setting examples of health and a sustainable land and food system by developing the UBC Farm and LFSOG. In addition, many food outlets around the UBC campus, including Agora Café and Sprouts, are supporting the local food system by involving food crops from UBC Farm and LFSOG as part of their food ingredients.

However, local food production may not be consistent due to climate variations, and it is not easy to find information on availability of crops that are grown at the two sites; members of the campus food system and average community folk would have difficulties. By creating the Cropedia webpage, it is hoped that the consumers and volunteers of the UBC Farm and LFSOG would have fast and easy access to information about the availability and food aspects of the crops grown.

Expanding Promotion of Local Foods

Even though the primary purpose of the Cropedia webpage was to provide a resource for UBC food organizations supporting UBC Farm and LFSOG, our group is

hoping that it can expand its use to help members of communities outside of the UBC campus to make fresher and more nutritious food choices through promotion of selecting local foods. Harvesting local foods during peak ripeness ensures that the taste and nutrient content of the foods are retained, in contrast to imported foods.

Link between Producers and Consumers

Another goal for the Cropedia webpage is to act as the bridge connecting consumers to producers. By providing access of information about the crops grown and how it is grown, consumers can connect themselves to the food system and feel secure about the food items they are consuming. Consumers have access to information about how their food is grown and can grow their own crops.

Group's Goal for Cropedia

Our group is focusing on the broader vision for creating the Cropedia webpage. The group believes that the Cropedia can be expanded to be a useful source for all members of the community and not just focused around the students' needs. It is hoped that the webpage can be developed to act as an advertising tool for any interested local farmers to share their knowledge and expertise about what is grown and bridge the links between local farmers and consumers.

Group Reflections on the Vision Statements

A. Food is locally grown, produced, and processed.

Our group agrees with this statement because food that is locally grown, produced, and processed, relates to a sustainable environment. “Local food distribution systems can reduce environmental impacts significantly, as opposed to conventional truck-delivered food systems which can be 4 to 17 times more damaging to our environment.”

(FarmFolk/CityFolk Society, 2008) In addition, the UBC food system, UBC Farm, and LFSOG provides food for the UBC community.

B. Waste must be recycled or composted locally.

Our group believes that wastes from food that is produced locally should be returned back to the land from which it was grown for decomposition and soil replenishment to grow future crops. It is important to continue the cycle of production, consumption and degradation.

C. Food is ethnically diverse, affordable, safe and nutritious.

Our group agrees that locally grown food can be diverse, affordable, safe, and nutritious. Growing a variety of crops enables for options in the daily diet. Local foods should be affordable because it makes it easier to be accepted into a community if people can afford to purchase the foods. Local foods should be safe and nutritious so that people can continue to eat the foods without experiencing adverse effects while improving or maintaining their health.

D. Providers and educators promote awareness among consumers about cultivations.

Our group believes that to achieve the goal of a sustainable food system, providers and educators, such as farmers and the LFS faculty, have to share their knowledge and expertise about the values of sustainability. Consumers would be more aware and knowledgeable about their food system and learn to make healthier and more sustainable food choices.

E. Food brings people together and enhances community.

We agree with this statement because food is a commonality among every individual in spite of varying backgrounds and values; everyone needs to eat. It is easy to create gatherings for people to come together around food because it has an important role in overall health. Gatherings allow people to start conversations, share their knowledge and experiences, and learn new ideas about various numbers of topics.

F. Food is produced by socially, ecologically conscious producers.

Our group agrees that producers who grow local produce should be aware of and respect a sustainable environment. Producers are dependent on the land to continue their business, therefore maintaining a healthy environment would ensure that crops can continue to grow.

G. Providers and growers pay and receive fair prices.

We agree with this statement because the two parties are dependent on each other for success. Setting high prices would defer consumers from purchasing their products, but the providers and growers should also receive fair prices to continue to provide.

IV. METHODOLOGY

The Cropedia webpage was created to be a UBC urban agriculture educational resource. The information found on the Cropedia website includes crops from both the UBC Farm and the LFS Orchard Garden. Information about each crop includes the name of the crop, photo, years grown either at the UBC Farm or LFSOG, growing conditions, seasonality, nutritional information, usage inventory and ideas, and academic connections.

To finish our tasks and successfully set up the Cropedia pages, different methods were implemented to carry this out, including individual library and online research, communication between group members through meetings, emails, and use of the discussion board, meeting with the media technician, meetings with other Cropedia scenario groups, and consultation with staff from UBC Farm and the LFS Orchard Garden.

a. Individual library and online research

After the initial meetings, consulting with our scenario teaching assistant, Gavin Wright, and discussion with other 3 scenario groups, a list of 44 crops was decided on for inclusion onto the webpage. These 44 crops were divided among the scenario groups; the divided crops were further divided between group members. Each member was responsible for completing a “crop page” for the crops that were assigned to them.

b. Communication between group members

Weekly meetings were set up to update each other and discuss findings and problems encountered as the project progressed. Each week, tasks were assigned to each group member and the outcomes were discussed at the following week’s meeting. Members communicated via frequent emails and postings on the Vista discussion board.

c. Communication with other scenario groups

A total of 4 groups worked together to create the Cropedia website. For effective and efficient communication between the groups outside of class discussion, communication officers were delegated to represent each group. The communication officers were responsible for contacting other groups' communication officer and/or the scenario contacts when required.

d. Meeting with the Cropedia technician

During one of our scheduled scenario discussion periods Duncan McHugh, LFS Learning Centre technician, gave a demonstration of how the Wikipedia-like software for the Cropedia is operated, and how the pages can be created and edited to add in the necessary information we were to research.

e. Consultation with staff from the UBC Farm and the LFS Orchard Garden

Meetings with the representatives from UBC Farm, Amy Frye, and LFS Orchard Garden, Jay Baker-French, were set up through a single communication officer. Questions were compiled and sent via email to the representatives before our appointments with them to ensure they had time to prepare.

f. Putting Cropedia together

To ensure cohesiveness, discussions with other groups were held during the meetings to settle on a standard format to use. Each group member was responsible for finding the required information for their crops and uploading it onto the Cropedia website.

V. FINDINGS

Crops

i. Head lettuce and Eggs:

Head lettuce has been grown on UBC Farm since 2001 with varying degrees of success due to pests and disease problems. Both common and unusual varieties are grown to suit customers' interests. The Cropedia page lists the average growing requirements for the Pacific North-West, along with some helpful hints from personal experience. Head Lettuce is also being considered for cultivation for the LFSOG 2010, if poor storability issues can be improved.

Eggs are one of the most popular products sold at the UBC Farm Market and are one of its top revenue generators. They are also distributed to a number of restaurants and cafeterias around campus, including Agora and Sage Bistro; and as an ingredient can be most commonly found in Agora's "quiche of the day". The chickens on the UBC Farm are a cross-breed of Barred Plymouth Rocks and Rhode Island Reds, which were specially developed for UBC Farm at UBC's Avian Research Centre in Agassiz.

Below, they are the links for the crops in the Cropedia website:

<http://cropedia.landfood.ubc.ca/wiki/Eggs>

http://cropedia.landfood.ubc.ca/wiki/Head_Lettuce

ii. Arugula and Strawberries

Arugula has been grown for thousands of year by the Romans. It was documented as an ingredient of an aphrodisiac mixture. The vegetable is mainly used as a flavour

ingredient for salads and flavoured oils. The fast growing ability and strong tolerance permits the plant to be grown and harvested several times during the growing season. One interesting piece of nutritional information related to arugula is that its calcium content is higher than that of kale and is named "King of Calcium". Meanwhile, strawberries are high in vitamin C and other phytonutrients and antioxidants such as vitamin K, folic acid and riboflavin. The juicy fruit requires dry soil conditions with adequate water supply since 95% of strawberry is water. These requirements can be fulfilled with high content of soil organic matter that absorbs excess water while maintaining dry soil condition.

Below, they are the links for the crops in the Cropedia website:

<http://cropedia.landfood.ubc.ca/wiki/Arugula>

<http://cropedia.landfood.ubc.ca/wiki/Strawberry>

iii. Beets and Carrots

Beets and carrots are produced at both the UBC Farm and LFSOG. They are both relatively easily grown and to care for. Beets grow best in cooler temperatures, are usually sown in late winter to early spring, and are harvested in late spring to early summer. Beets grow in moist soil conditions and perform best in full sun and fertile, friable garden soil, with regular watering and light fertilization. The roots can be boiled and eaten and the leaves can be eaten as part of a salad.

Carrots grow best in deep, rich, friable, loamy soil with full sun during the summer and fall. Carrots are high in β -carotene, antioxidants, fibre, and minerals. Carrots can be eat raw as part of a salad, or can be boiled, steamed, or cooked in soups.

Below, they are the links for the crops in the Cropedia website:

<http://cropedia.landfood.ubc.ca/wiki/Beet>

<http://cropedia.landfood.ubc.ca/wiki/Carrot>

iv. Chard and Kale

Chard is commonly known as “Swiss chard”. It can be grown in most temperatures, except in extremely cold or hot conditions. It is commonly grown in late spring, between April and May. It is a good vitamin and mineral source for vegetarians and vegans, supplying nutrients such as magnesium, calcium, vitamin K, iron, potassium, vitamin A, folate, zinc, copper, vitamin C, dietary fibre, and vitamin E. (Smith, 2010).

Kale is also a crop that is rich in minerals and is especially suitable for those who are deficient in calcium. Because kale is easily grown and can tolerate cold temperatures, it is widely grown in many parts of the world (Smith, 2010).

Below, they are the links for the crops in the Cropedia website:

<http://cropedia.landfood.ubc.ca/wiki/Chard>

<http://cropedia.landfood.ubc.ca/wiki/Kale>

v. Pumpkin and Squash

Pumpkin, or also known as winter squash, and squash are produced at the UBC Farm. They are usually planted during the warm season, and are easily grown and taken care of. Pumpkins and squash are rich sources of vitamins and minerals, especially vitamin A, that are important for good health. They can be used as part of food dishes and for art purposes, such as carving, decorating and painting.

Below, they are the links for the crops in the Cropedia website:

<http://cropedia.landfood.ubc.ca/wiki/Pumpkin>

<http://cropedia.landfood.ubc.ca/wiki/Squash>

vi. Spinach and Mixed Greens

Spinach is grown at UBC Farm and at the LFS Orchard Garden. The varieties grown are Tye, Space, and Bloomsdale Savoy. The best growing time is during the spring and fall seasons in relatively cool climates. Spinach is a source of many bioactive phytochemicals that have anticarcinogenic effects, protecting the body from risk of carcinogenesis. Other beneficial effects from consuming spinach include: lowered risk of cognitive decline, anti inflammatory effects, strengthening eyesight, and improving overall energy.

This season's mixed greens mixture comprises of red lettuce, arugula, mizuna, tah tsoi, baby kale, baby chard, mustard greens, and ruby streaks. This mixture can vary depending on the availability of greens grown at UBC Farm and is one of the more popular items sold. The mixed greens mixture is sold in many locations – at the Saturday

markets, as a part of the CSA program, to various local restaurant customers, and to some of the campus food outlets.

Below, they are the links for the crops in the Cropedia website:

http://cropedia.landfood.ubc.ca/wiki/Mixed_Greens

<http://cropedia.landfood.ubc.ca/wiki/Spinach>

Stakeholder Meetings

From our meeting with Jay Baker-French from the LFS Orchard Garden, we learned that during the school year direct sales go mostly to Agora and Sprouts. Over the summer, when most crops are grown, UBC Farm takes some of the products for sale at the farmers markets or use in community dinners. In terms of content on the webpage, he said that it would be helpful to have information about possible product purchasing locations, and crop availability and prices. A concern he raised was who was going to update the webpage to accurately reflect the status of crops at the LFS Orchard Garden. He suggested that more volunteers might be needed for the garden and farm in the future and that they can be delegated to maintain the database.

In terms of what Amy Frye, from the UBC Farm, thought about the webpage, she thought that it would be a very good source for the farmer markets volunteers to utilize and familiarize themselves with the crops grown at UBC Farm. She thought that it would be a good idea to have a consumer-friendly website that the volunteers can refer customers to for more information about the foods they are purchasing. In contrast to Jay, Amy suggested avoiding aspects that are time sensitive so that less effort is needed for

routine webpage updating. In addition, she suggested providing information in the website about storing crops.

Difficulties Encountered

At first, the brainstorming process and planning required time to acquire all the information needed to initiate the project. Finding the information was difficult because there had not been a previous project to develop and expand on, therefore making certain aspects of the project difficult. These aspects include: narrowing down an overwhelming list to a reasonable number, determining which crops to include, and formatting. Not all crops were included onto the Cropedia because of the limited time remaining after the planning process to complete the web pages. A large portion of the time was dedicated to gathering the information for incorporation into the website. Some information was only available from our contacts and it took time to get this information because it was dependent on our contacts' schedule on when we could get it. Creating the Cropedia web pages also required time to learn the program processes and to actually insert the gathered information.

Because we are only at the beginning stage of developing the Cropedia, website maintenance is a concern for the future development of the webpage. At this point, the information available is basic and the layout of the pages is a skeleton structure. Information such as the prices and availabilities of the crops at the UBC Farm and LFS Orchard garden are time-dependent and would need to be routinely updated. They are not currently included in the website because of the need for someone to go through and update the web pages.

VI. DISCUSSION

The LFS Cropedia is an important central repository of information on locally grown crops, which is easily accessible to students, stakeholders, and the general public. In connecting UBC with the community and food producers/suppliers with a centralized data bank of relevant information on many local crops, it reflects the LFS vision in bringing research from bench to garden (research to application), addressing issues that surround the health and sustainability of B.C. Agricultural systems. Until now, this type of specifically ordered, locally relevant information with ease of accessibility has not been available. Its goal is to provide a forum for community contributions from diverse backgrounds, therefore encouraging information exchange on topics of local, sustainable production and consumption. The Cropedia has the potential to merge both academic and public research projects that are going on in the local food community that can be shared in a simplified, easily accessible medium.

For consumers such as students, Agora clientele, UBC farm clientele, and volunteers of all ages and educational backgrounds, having a place to look up information quickly that is directly relevant and presented in a consistent manner is very helpful. The recipes section provides an opportunity for exchange of ideas incorporating and promoting local and seasonal food ideas, and reflects UBC commitment to local production by tying it to the menus of local cafes and restaurants. For producers, especially local farms, having a resource to direct consumer/volunteers too, will help the local organic industry by providing an easily understood forum to learn from and encourage the proliferation of ideas. It would also give producers an idea as to what

trends or crop types are important to consumers. The shared knowledge of growing factors, pest controls, or solutions to certain pests, will be extremely helpful for local farmers to background gardeners.

Some of the findings from our group members relate to the difficulty of searching through the web to find un-streamlined, erroneous or misinformed knowledge shared based on ad hoc experience rather scientific findings. When data is organized in a consistent way, such as in the Cropedia, the information is received faster and consistently. This is very important to consider when scaling the Cropedia for more editors and crops in the future. To address the need to keep the content relevant, different generations of students can contribute to this project as the years progress, allowing for the continued evolution and updated information exchange.

The idea of a centralized encyclopaedia of crops organized and structured with specific data sets would be very helpful to the organic community and bring awareness to every stakeholder. The usefulness of the content could create a catalyst that would attract the non-organic community to explore these alternative choices for better health and support of local farmers. Therein also lays the weakness of the Cropedia. Continual updates with interesting content and useful information are necessary to keep the interest of the general public. Additional features, such as blogs by region, and pest management sections, would help consumers and producers further facilitate discussions and sharing of information.

VII. RECOMMENDATIONS

General recommendation for UBC sustainability system (AMS, UBC food service, Campus, etc.):

When it comes to the different bodies of UBC, no matter if they are different faculties or AMS or food service, communication is the key. The sharing of information allows a variety of expertise to integrate with each other. This is particularly beneficial to increasing food sustainability of UBC campus because information sharing facilitates the collaborations of different parties of UBC to work towards food sustainability. For instance, the food recipes that use the LFS Orchard Garden or UBC Farm produce ingredients can be shared with UBC Food Service, and be further modified and developed into a product that is sold across campus. Thus, the benefits of reduced food carbon footprint can become more extensive instead of concentrated in Land and Food Systems faculty.

Sustainable food choices should be made readily available to all food vendors. This idea originates from the theory that food choices are based on food availability. If only selected food retailers carry sustainable food items across campus, not many students would have such chance to select those items. Instead, if most food vendors provide sustainable foods, then most of the students not only are able to be healthy, they will also reduce their food carbon foot prints.

Additionally information on food sustainability should be easily accessible by students and outsiders. Because most of the students prefer food on-the-go, different UBC branches, especially AMS and UBC Food Services, should have links on their websites to indicate food retailers for sustainable foods in Student Union Building. Any

faculty buildings with a cafeteria that provides sustainable food items should also post their information on the associated faculty website.

Short term recommendations for the Cropedia:

The Cropedia needs to be linked to current UBC websites that relate to food sustainability. Since the Cropedia is a new concept, many people are not familiar with this website. Thus, more online traffic can be achieved by associating the Cropedia with LFS websites such as UBC Farm, LFS Facebook, and LFS blog websites. The Cropedia should also be affiliated with UBC Food Service, AMS, and UBC Sustainability websites. The increase in online accessibility will increase the attention to the Cropedia and the concepts of seasonal foods.

In addition to UBC websites, the Cropedia should be connected with food sustainability websites outside of UBC in Vancouver. This may bring even more online traffic and exposure to the ideals that the Cropedia promote. It will also increase the recognition of current UBC food sustainability strategies. For instance, the City of Vancouver has a section for food sustainability and it would be very beneficial to establish a partnership with the website. Another approach is to link the Cropedia with dining websites such as Food Vancouver, Slow Food Vancouver, City Farmers and more. The audiences of these websites generally have great interests in food and gardening and are most susceptible to the benefits of the Cropedia.

Once the Cropedia website is connected with internal and external websites, it can be used as an educational and marketing tool to promote seasonal foods, UBC produce and food sustainability. Since the yearly additions of planted crops are not predicted to be

a difficult task for future students, they should focus on more the marketing of planted produce. Pamphlets or cards of the Cropedia can be printed and handed out during UBC farmer markets period. Consumers are able to access the information of their purchased produce, such as recipes, nutritional panel and planting techniques. In this case, the Cropedia serves as an educational tool that targets the many benefits of eating local and supporting local.

Furthermore, most of the food sustainability websites are focused on particular aspects of the issues and fails to address the whole picture. For instance, the composting website of UBC lacks information on how compost can be used to enrich soil so that seasonal, local food produce can be planted and harvested. Individualized sustainability programs are essential in dealing with individualized issues. Yet sustainability requires more collective efforts in all aspects. We feel that there needs to be an umbrella website that encompasses all aspects, websites and issues of food sustainability.

Long term recommendations for the Cropedia:

The short term recommendations above help establish a strong base of audience, the long term suggestions for the Cropedia project aim for the expansions of the Cropedia to general public and to local farmers. The Cropedia needs to be expanded to reach more audience in society. This can be done by affiliating the Cropedia with other mainstream publications such as TV stations, news websites and more. Yet, increasing audience is not the only goal. The Cropedia should not only be focused on the crop productions from the UBC farm and LFS garden, other local farms should also have the opportunity to publish their annual crops with nutritional and culinary information attached. Thus, the Cropedia

will serve as online catalogue that is posted by producers throughout the year. Readers can access the locations of farms, their produce, soil information, history and more. To make the website more user-friendly, this study suggests the incorporation of a mapping system, in which producers can specify their locations and readers can select their preferred locations. This way, the Cropedia can truly achieve its full potential in connecting consumers to the producers while providing educational information.

Recommendations on altering or making changes on the project in relations to the problems and difficulties that arose while the group was working on the project (for the future groups):

Since the Cropedia is a student-oriented project and will be maintained by students, several challenges will arise. One of the challenges relates to the editing feature of Wikipedia and its effects on the Cropedia. In the Wikipedia, all readers are able to edit the content while leaving a history in the system. The Cropedia should also be open to editions, yet the extent of the changes in content should be limited. This poses challenges since much maintenance will be required for editions, especially when more people access the Cropedia. Thus, we recommend the limited access of editions on the Cropedia pages. Changes can only be made by administrators including assigned student groups, farmers and UBC faculty members. Although this kind of conservative solution significantly limits the amount of information that can be posted on the pages, it is the most effective way to reduce the higher demands of website maintenance.

Another challenge is associated with timing. In general, LFS450 is offered during winter sessions of the academic years and students start working on the project after three

weeks of first day. A list of crops is required for this project and is needed to be ready in early February to avoid delays. This implies that the farm and garden need to decide their crops by February and anything further changes in their planting may not be reflected in the Cropedia due to the scheduling complications. In terms of the scheduling issues, we suggest that the website indicate certain discrepancies that may arise due to scheduling of the project.

VIII. CONCLUSION

The purpose of the project of creating the Cropedia web page is to increase awareness of food seasonality and local food to ensure the quality and safety of the food system as well as to promote the sustainable community. To achieve this goal, the Cropedia web pages were created to incorporate the current crops rotations of the UBC Farm and LFS Orchard Garden. As many as 44 different were assigned to four groups in order to produce the Cropedia web pages for each crops. The Cropedia is a place to look up information quickly and is directly relevant to food production, seasonality and the information is presented in a consistent manner. The idea of a centralized encyclopaedia of crops organized and structured with specific data sets would be very helpful.

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