

Student Sustainability Committee – Step 2 Proposal – Fall 2012

Perennial Polyculture Production-Research Site SUPPLEMENTAL MATERIALS

Bruce Branham - Department of Crop Sciences (primary contact)

Kevin Wolz – Undergraduate Student in IB & CEE (secondary contact)

Michelle Wander – Department of Natural Resources & Environmental Science

Jim Dalling – Department of Plant Biology

Ron Revord – Graduate Student in NRES



*A perennial polyculture after 17 years of producing food and restoring ecosystem services.
(New Forest Farm – Viola, WI)*

APPENDIX 1 – PROPOSED BUDGET

Item	Category	Priority Tier	2013 Request	2014 Request	2015 Request
Equipment/Plants					
Replacement Trees	P	1	2,000	1,000	500
Alley Pasture	P	1	500	100	100
Harvesting Equipment	P	1	1,000	1,000	500
Maintenance Equipment	P	1	2,000	1,000	0
Insect/Animal Traps	P/EO/R	1	2,000	500	500
Soil Testing	P/EO/R	2	8,000	5,000	5,000
Water Testing	P/EO/R	2	5,000	3,000	3,000
Internet/Tower/Power	P/EO/R	1	3,000	0	0
Weather Station	P/EO/R	1	10,000	0	0
EQUIPMENT SUBTOTAL			33,500	11,600	9,600
Publicity & Communication					
Educational Video	EO	1	0	0	2,000
Agronomy Day	EO	1	0	0	1,000
Class Supplies	EO	1	100	100	100
Website	EO	1	500	50	50
Aerial & Time-Lapse Photography	EO	1	4,000	500	500
PUB/COMM SUBTOTAL			4,600	650	3,650
Personnel & Wages					
Intern (half-time, full-year)	P/EO/R	1-3	17,400	19,200	21,100
PERSONNEL SUBTOTAL			17,400	19,200	21,100
Other					
Land Usage Fee	P/EO/R	1	1,250	1,250	1,250
PERSONNEL SUBTOTAL			1,250	1,250	1,250
ANNUAL TOTAL			\$56,750	\$32,700	\$35,600
GRAND TOTAL			\$125,050		

Table 1. Proposal Budget. Categories: P = Production, EO = Edu/Outreach, R = Research. Mckenzie suggested that this level of detail was appropriate, but if the SSC would like a further broken down budget, that can be provided. While the budget is broken down here into three separate years to illustrate how the funds will be used over time, this proposal is requesting the full funding amount during this funding round.

Intern Job (Academic Hourly)	Full-Year	Half-Year
weeks/year	50	30
hours/week	20	20
\$/hour	16	16
Benefits	8.88%	8.88%
Annual Raise	10.00%	10.00%
Year 1 Salary	\$17,420.80	\$10,452.48
Year 2 Salary	\$19,162.88	\$11,497.73
Year 3 Salary	\$21,079.17	\$12,647.50

Table 2. Characteristics of the proposed intern position. Full-Year and Half-Year calculations correspond to the different priority scenarios shown in Table 1, where a half-year intern is included in Priority Tier 1 and expansion to a full-year intern is part of Priority Tier 3. The intern will be responsible for direct supervision of the PP site. The intern will spend most of their time managing the production of the site (including pruning, weeding, watering, harvesting, alley cropping, and day-to-day troubleshooting). Since the addition of the PP experiment greatly increases the size of the SSF and since the cropping system is fundamentally different, additional labor beyond current SSF employees will be required to maintain the PP site. The intern will work closely with the existing SSF Educator and Foreman to coordinate research, production, and education activities, including engagement with students, classes, and the public on topics related to PP. The intern will also assist graduate students and faculty researchers in some basic research activities. Furthermore, the intern will gain invaluable first-hand experience in the establishment and maintenance of a perennial polyculture system. The hands-on and practical nature of this position makes it an invaluable educational experience for the intern.

Priority Tier Totals	
Tier 1	\$67,200.00
Tier 2	\$29,000.00
Tier 3	\$28,850.00
Tiers 1+2	\$96,200.00
Tiers 1+2+3	\$125,050.00

Table 3. Items are assigned to several priority tiers based on their necessity to making the project a success. Subtotals and totals for the various tiers are shown here. Alternatively, the committee may also consider funding only the first year or two of this project as a means to reduce current cost. The annual budget breakdown provided in Table 1 can aid with this analysis.

APPENDIX 2 – PROJECTED POST-STARTUP ANNUAL BUDGET

Item	2016+ Annual Expense
Production	
Intern	21,100
Land Usage Fee	1,250
Replacement Plants	200
PROD SUBTOTAL	22,550
Education/Outreach	
Agronomy Day	1,000
Website	50
Class Supplies	100
Aerial Photography	500
EDU/OUT SUBTOTAL	1,650
ANNUAL TOTAL	
	\$24,200

Table 4. Projected annual budget for non-research baseline operation in 2016 and beyond (the years following proposed SSC support). Annual revenue from sale of yields to Dining Services must be greater than this annual total for the PP site to self-sufficient after the proposed SSC funding ends. All research needs beyond 2015 will come from outside grants.

APPENDIX 3 – CROP YIELDS, SALES, and PROJECTED REVENUE

Crop	2013 lbs	2014 lbs	2015 lbs	2016 lbs	2017 lbs	2018 lbs
Apple	0	0	0	344	1,068	1,832
Chestnut	0	0	0	0	495	818
Currant	991	2,081	3,181	4,282	4,392	4,403
Grape	0	326	685	1,048	1,410	1,446
Hazelnut	0	0	132	233	331	385
Raspberry	894	1,922	3,864	4,155	4,199	4,206

Table 5. Projected crop yields for the next 6 years. Yields from perennial crops are difficult to predict compared to annual crops because they do not yield right away, they produce more each year as they grow, and winter mortality must be accounted for. Yields here are calculated using estimated productivity, maturity, and mortality characteristics specific to each crop.

Crop	2013 revenue	2014 revenue	2015 revenue	2016 revenue	2017 revenue	2018 revenue
Apple	\$0	\$0	\$0	\$1,032	\$3,204	\$5,496
Chestnut	\$0	\$0	\$0	\$0	\$2,475	\$4,088
Currant	\$1,982	\$4,162	\$6,362	\$8,564	\$8,784	\$8,806
Grape	\$0	\$489	\$1,028	\$1,571	\$2,115	\$2,169
Hazelnut	\$0	\$0	\$395	\$698	\$992	\$1,154
Raspberry	\$2,682	\$5,766	\$11,592	\$12,465	\$12,597	\$12,618
Totals	\$4,664	\$10,417	\$19,377	\$24,330	\$30,167	\$34,330

Table 6. Projected revenue from sale of all yields to Dining Services based upon pricing communicated in June 2012 and the yields shown in Table 5. A letter from Dining Services indicating their support to purchase all crops from the site is attached below. Color-coding indicates if that year’s revenue adequately covers the baseline operating costs for that year, as indicated in Table 4.

APPENDIX 4 - IMAGES



Image 1. Location of the Perennial Polyculture Site in relation to the SSF

Perennial Polyculture Production Comparison Experiment
University of Illinois at Urbana-Champaign Fruit Farm

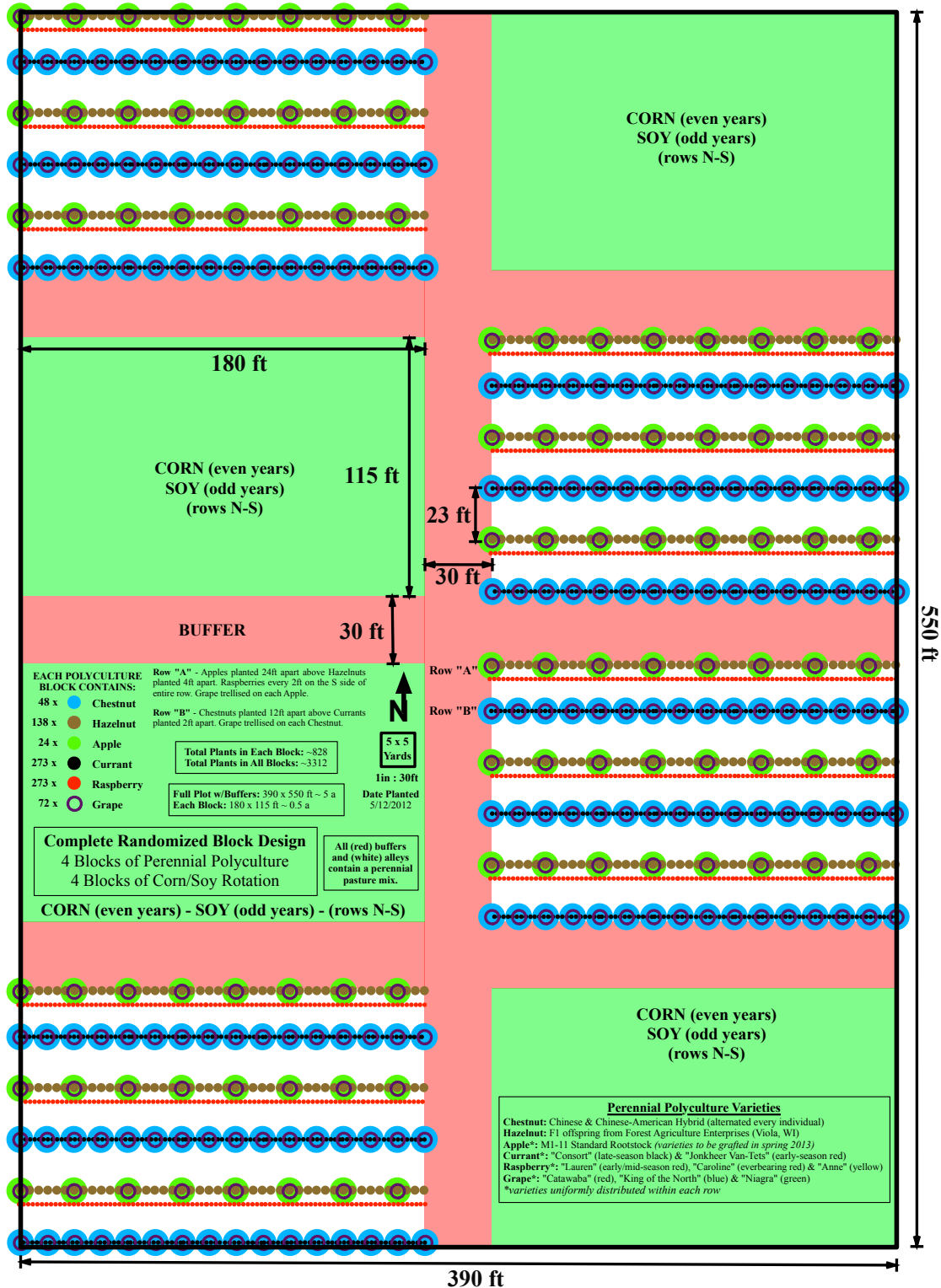


Image 2. Layout of the Perennial Polyculture Site

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Dining Services
Housing Division
400 Clark Hall
1203 South Fourth Street
Champaign, IL 61820



November 9, 2012

Re: Permaculture Site at the Sustainable Student Farm

Kevin Wolz
Civil & Environmental Engineering/Integrative Biology Honors
Undergraduate Researcher, Leakey Lab

Dear Kevin,

University Dining Services is committed to being sustainable. This commitment is demonstrated in our procurement practices, waste handling, energy conservation, water conservation and approach to the services we provide for our students and community. Last June, University Dining sent three (3) representatives to the first Permaculture Conference at UMass Amherst due to our interest in permaculture as a potentially future viable option for the producing of food for University Dining. We are delighted that you have undertaken the immense task of the first permaculture at the University of Illinois Champaign-Urbana campus.

The purpose of this letter is to memorialize our commitment to your permaculture project by purchasing the food stuffs produced. We also look forward to supporting your efforts in other ways, as possible.

Thank you for your commitment to making the University a more sustainable place.

Respectfully,

Dawn Aubrey

Dawn Aubrey, PhD, MBA, CCA, CEC, FMP
Associate Director of Housing for Dining



Dept. Plant Biology
University of Illinois
Urbana, IL 61801

10 November, 2012

Dear Kevin,

I am writing in strong support of your application for SSC funding for the perennial polyculture study. I view this experiment as a fantastic example of how undergraduates can take a primary role in developing research activities on campus, and as a powerful tool for bringing disparate groups together towards achieving campus goals in sustainability.

As Director of Integrative Biology Honors Program, I am highlighting the polyculture experiment as an example of the kind of research and outreach activities that our students can accomplish. Beyond that, I also teach Honors Ecology (IB 372), a semester long class that provides opportunities for field-based class projects and independent research. Starting next Fall semester, I will incorporate the polyculture experiment into my course curriculum, and will take our class out to the site to collect data. My hope is that successive years of students will start to develop long-term datasets on topics such as insect diversity and host preference, plant-soil feedbacks, and carbon allocation patterns. I also believe that exposure to this facility will help spur students towards becoming more strongly engaged in sustainability efforts on campus, and will help educate them about alternatives to our current agronomic systems.

I appreciate your willingness to help with this venture, and in particular, to support educational activities that can leverage investments that have already been made in setting up this project.

Sincerely,

Jim Dalling

Associate Professor
Department of Plant Biology
Director, IB Honors Program

On Sun, Nov 11, 2012 at 11:07 AM, Johnston, Morgan
B <mbjohnst@illinois.edu> wrote:

Hello Kevin,

Thanks for talking with me on Friday about your SSC proposal and the F&S questions. As we discussed, all of the issues that were listed in the F&S comments have been cleared up. The only item that will involve Facilities and Services for your project is the potential for a CITES internet tower. If you elect to move forward with the tower, please contact the ACES facilities director, Doug Wolters.

Thank you,
Morgan