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# Proprietary research to determine feasibility of commercializing the Pink Oyster Mushroom

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AN UNDERGRADUATE THESIS

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The Environmental Studies Program at the University of Nebraska-Lincoln

In Partial Fulfillment of Requirements for the Degree of Bachelor of Science

Major: Environmental Studies

With the Emphasis of: Natural Resources

Under the Supervision of Dr. Charles A Francis

With Additional Assistance from:

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#### ABSTRACT

This project serves as a feasibility experiment to bring the Pink Oyster mushroom (*Pleurotus flabellatus*) into constant domestic cultivation for the purposes of commercialization. Important data acquired from growth trials were growth timelines and yields. This information was used to generate interactive spreadsheets with which one can determine possible cost and profit in a variety of scenarios. The first portion of the experiment involved constructing a growth chamber, which can achieve and maintain stable environmental conditions. This portion was successful. Secondly, the numbers obtained from the experimental growth trials were used to determine future projections from the perspective of a small business start up. According to the data, investment in production is expected to be highly lucrative, with a projected net profit margin range of 300-2000%

### INTRODUCTION AND LITERATURE REVIEW

*P. flabellatus* is a species of the edible higher fungi and supposedly originates from Malaysia. It is aggressive, saprophytic and thrives in tropical climates. Due to its aggressive nature, the fungus is an excellent candidate for processing a wide variety of substrates<sup>i</sup> into a healthy, edible food product. Additionally, the processed substrate makes nutritious fodder for ruminant livestock and can be used as a horticultural and agricultural additive for improving nutrient availability and quality in soils. Other uses for the *Pleurotus* fungus include bioremediation<sup>ii,iii</sup>, replacing foam in packaging, car parts, etc...<sup>iv</sup>, and includes, but is not limited to, potential relevance to the medical industry<sup>v</sup>.

*Pleurotus* mushrooms in general are highly nutritious (Table 4, "nutrition information", obtained from Nutritiondata.self.com<sup>vi</sup>). The fruit body produced by the *P*. *flabellatus* fungus is referred to as the "Pink Oyster Mushroom" and is widely desired by culinary artists and everyday consumers alike. The pink oyster mushroom carries a strong flavor, which compliments red meats and seafood nicely. Additionally, it is not readily available in Nebraska, nor surrounding areas, as it cannot persist in sub-tropical climates outside of domestic cultivation. The goal of this project became an experiment in

feasibility to bring the pink oyster mushroom into regular, constant production for sale in southeast Nebraska and surrounding areas.

Commercial mushroom cultivation is a big industry using age-old techniques, which have proven effective time and time again. Simply explained, substrate (in this case, wheat straw hay) is hydrated and pasteurized, then inoculated with spawn (in this case, colonized sorghum grain). This is followed by an incubation/colonization period, and lastly fruiting/harvest. Of course, techniques differ among types and strains<sup>vii,viii,ix</sup>.

Most commercial operations take place in a somewhat sterile, climate-controlled environment. *Pleurotus* mushrooms are no different. While some types of mushrooms use stacked trays and pasteurized soil or logs in the cultivation protocol, *Pleurotus* mushrooms are often cultivated in hanging plastic bags packed full of spawn and substrate, which vary in size and orientation.

### **PROJECT GOALS**

- 1. Design and build a self-contained environment to cultivate (tropical) mushrooms with minimal maintenance which mimics a scaled-down commercial facility
- 2. Determine feasibility, cost, and returns associated with expansion for continuous production and sale using information obtained from the constructed environment

## MATERIALS

- Incubation unit
  - o 22.5 cu foot refrigerator with top mounted freezer
  - Zoomed Hygrotherm
  - o Zoomed ultrasonic humidifier
  - o Schedule 80 PVC, 2", 8 ft
  - o 10 ft furnace tape
  - Plastic/acrylic sheet (condensation leakage preventer)
  - Sheet metal (3ftx3ft)
  - Self-tapping screws (10)
  - o 12 feet rope lights
  - $\circ$  Light switch (2)

- o 30 gallon aquarium pump
- Aquarium tubing, 2 feet
- Sorghum grain (one bag, 50 lb)
- Wheat straw hay (one bale, 75 lb)
- Plastic bags
- Half-gallon size mason jars (1 package)
- Fiber-fill pillow stuffing (1 bag)
- Fungus tissue culture
  - Pleurotus flabellatus
- Sterilization equipment
  - University autoclave

## **METHODS**

- Fungal tissue culture purchased from commercial distributor
  - Propagated to agar ('complete media')
    - Culture maintenance
  - Propagated to grain spawn, 1-2 cc/jar
  - One 4-inch petri plate can be overtaken in 4-8 days
- Spawn jars
  - One quart, half-gallon mason jars
  - $\circ$  3/4" diameter hole drilled into lid
  - Pack in wad of fiber-fill (filter)
- Grain spawn
  - Hydrated, sterilized sorghum grain
    - Soaked for four to ten hours, rinsed
    - Boiled for ~ten minutes to burst testa
    - Drained, cooled
    - Fill to spawn jars 2/3 full
    - Sterilize: autoclave on "gravity" setting for 90 minutes
- Incubate grain spawn until fully colonized

- o Set incubator temperature to 82 degrees F
- Set incubator relative humidity to 95%
- Colonization of grain spawn takes 6-11 days
- Wheat straw hay preparation
  - Chop straw to 4-8", hydrate overnight.
  - Fill straw into large stock pot with water
  - o Bring water to boil
  - Remove heat, leave covered until cool.
  - Let water drain
- Create "straw logs"
  - Transfer colonized grain spawn and hydrated, pasteurized wheat straw hay (substrate) to plastic bag (mix spawn through whole substrate)
  - Use about 1 quart jar for 1.5 cu ft of hydrated straw, packed into bag
  - $\circ$  Poke ~1/4" holes all around bag, approx 6" grid
- Incubate straw logs
  - o Set incubator temperature to 85 degrees F
  - Set incubator relative humidity to 95%
  - Colonization takes approximately 8-10 days
- Initiate fruiting conditions
  - Turn on lights
  - Set incubator temperature to 75 degrees F
  - Set incubator relative humidity to 85%
  - Make sure CO2 pump is operational

## • Fruiting takes 5-8 days for mushrooms to grow and mature

Data analysis is performed through spreadsheet tables. Under "Results and Discussion" are the tables with explanations of how to read and use them, and the equations used to populate many of the fields.

## RESULTS

The first goal was to design a self-contained environment to cultivate (tropical) mushrooms with minimal maintenance. The grow unit is suitable for nearly all domesticated mushrooms, but specifically designed to accommodate tropical species. This portion of my project was successful. The grow unit (referred to as the "incubator") holds temperature at +/- 3 degrees F of the set parameter and relative humidity at +/- 3% of the set parameter. Climactic factors can be and are adjusted throughout the grow cycle. Lights can be turned on or off externally. Additionally, there is a setting for day and night cycles if necessary. Interior design of the incubator accommodates a wide variety of cultivation techniques. A cost sheet for the incubator and supplies can be found as "Table 1".

## <u>Trials yielded a weight range of approximately 1.5-2.5 lbs of fresh mushrooms in a 4-</u> week time period from micro propagation to fruit harvest, within 10 cubic feet of used <u>space.</u>

The second goal was to use the growth data to determine a timeline for consistent production and sale from a small business start-up perspective.

To determine cost and profit, the researcher has designed multiple spreadsheet tables which are successively linked. Therefore, with just a few changes to specific fields (red cells and cells bordered in red), numbers are generated across all tables. First to be observed is **Table X**, "**Incubator**" **definition**. This is the first table to be populated. This table defines factored parameters of the variable "Incubator". It is based in part on the **Linked References Table** shown after, which is shown populated with numbers from the feasibility project. It should be noted that the numbers could easily be re-worked to change the definition of the variable "Incubator".

Based on the number of incubation units used, amt.needed/cycle is generated. These numbers are linked through the rest of the tables. Color-coding is used to illustrate which table portions are linked. Expansion and crop scenarios using the following tables can be found in the "discussion and analysis" section.

Table X, "Incubator" Definition								
				"Incubator" cost				
Total number incubators:	10			\$100.00				
Item	One Incubator	Total incubators	Amt. needed/cycle	Units				
cu ft usable space	10	100	-	cu ft space				
length of HDPE tube	10	100	0.036	rolls				
(lbs) dry hay per cycle	10	100	0.1	bales				
(lbs) dry grain per cycle	5	50	1	bag				
grain jars per cycle	5	50	5.56	pkgs				
pillow stuffing	5	50	0.5	pkgs				

## Equations

- Incubator cost: cost of one incubator
- Total Incubators: (One incubator)\*(Number of incubators)
- Amt. Needed HDPE tube/cycle: (Total incubators)/(usable ft tubing)
- Amt. Needed hay bales/cycle: (Total incubators)/(Weight of hay bale)
- Amt. Dry grain/cycle: (Total incubators)/(Weight 1 bag grain)
- Grain jars/cycle: (Total incubators)/(Grain jars in package)
- Pillow stuffing: (Total incubators)/(Jars per bag stuffing)

Second is the linked reference table. It contains values linked to calculations in the rest of the analysis tables:

Linked Reference Table						
Item	Variable	Cost				
number incubators owned	0	-\$100.00				
incubator unit	1	\$100.00				
weight 1 hay bale (lbs)	1600	\$75.00				
weight 1 bag grain (lbs)	50	\$16.00				
2 mil HDPE tubing, 3000 ft, 12"						
dia. (usable:)	2800	\$113.00				
heat sealer	1	\$60.00				
grain jars in pkg	9	\$9.00				
jars/bag stuffing	100	\$8.00				
weeks per cycle	4	$\odot$				
growing weeks per year	48	$\odot$				
est. overhead cost/incubator/cycle	$\odot$	\$1.00				
Yield, lbs/incubator	2.1	$\odot$				
value/lb (1)	$\odot$	\$10.00				
value/lb (2)	$\odot$	\$12.00				
value/lb (3)	$\odot$	\$15.00				
value/lb (4)	$\odot$	\$20.00				

Equations

None are used, but "est. overhead cost/incubator/cycle" is linked to the total (cycle) on the Overhead Sheet, seen below and color coded appropriately. Labor and other costs are not figured at this point, but can easily be populated into the overhead sheet

overhead sheet						
	cost/cycle	cost/year				
electricity	\$1.00	\$16.00				
-						
-						
total	\$1.00	\$16.00				

Next is the expansion scenario calculator. As color-coding will indicate, it is directly linked to and mostly populated by the previous tables to generate a supplies cost,

which populates fields showing cycles and timelines until the materials are theoretically paid for.

Expansion scenario calculator								
Item	Cost per	Multiplier		Total				
incubation space owned	-\$100.00	0	\$	-				
incubation space expansion								
final	\$100.00	10	\$	1,000.00	AKA Facilities pu	rchase cost		
grain jars 0.5 gal	\$1.00	50	\$	50.00	or purchase cost per	(10) cubic feet		
pillow stuffing	\$8.00	1	\$	8.00	of used grov	v space		
sorghum grain, bag	\$16.00	1	\$	16.00				
wheat straw hay, bale	\$75.00	0.1	\$	4.69				
overhead/ incubator/ cycle	\$1.00	10.00	\$	10.00				
2 mil HDPE tubing, 3000 ft, 12"								
dia.	\$113.00	1	\$	113.00				
		total 1	\$	1,261.69				
			C	ycles to		months to		
yield/incubator (lbs)	value/lb	crop value, total		profit	weeks to profit	profit		
	\$10.00	\$210.00		6.0	24.0	6.0		
2.1	\$12.00	\$252.00		5.0	20.0	5.0		
2.1	\$15.00	\$315.00		4.0	16.0	4.0		
	\$20.00	\$420.00		3.0	12.0	3.0		

Equations

- Cost per grain jar: (Cost of grain jar package)/(Number of jars in package)
- Total 1: sum of product input costs
  - May be figured with the addition of price of heat sealer
- Cycles to profit: (Total 1)/(Crop value, total)
- Weeks to profit: (Cycles to profit)\*(Weeks per cycle)
- Months to profit: (Cycles to profit)\*(Weeks per cycle/4)

Next is the crop cost and profit calculator (1). This calculator is somewhat less dependent on other tables, specifically the expansion scenario, but still linked. This table is to be referenced after the expansion scenario, and once all reusable supplies are paid for. Reusable equipment totals are for reference only; they are not referenced by any other calculation. They are not figured in due to inconsistent longevity.

		Crop cost	and profit	calculator (1)			
·		•	•				
number incubators:	10						
non-reusable equipment			amt				
	one	total incubation	needed/cvcl		bulk cost	actual	actual
item	incubator	space	e	units	/cvcle	cost/cvcle	cost/vear
cu ft usable space	10	100	100	cu ft space	-	-	-
length HDPE tube/cycle	10	100	0.036	rolls	\$ 113.00	\$ 4.04	\$ 48.43
(lbs) dry hay per cycle	10	100	0.1	bales	\$ 75.00	\$ 4.69	\$ 56.25
(lbs) dry grain per cycle	5	50	1	bag	\$ 16.00	\$ 16.00	\$ 192.00
overhead/incubator	\$1.00	\$ 10.00	\$ 10.00	-	\$ 10.00	\$ 10.00	\$ 120.00
				cost/cycle	\$ 214.00	\$ 34.72	\$ 416.68
reusable equipment	5	50	5 56	pkac	¢ 54.00	¢ 556	
pillow stuffing	5	50	5.50	pkgs	\$ 54.00	\$ 5.50	
	5	50	0.5	pkys	\$ 62.00	\$ 4.00	
				COSL	φ 02.00	\$ 9.50	
	weeks/cvcle	weeks/vr	cvcles/vear				
cycles per year	4	48	12.0		actual produc	t cost/year	\$ 416.68
					•		
Yield, (lbs)/incubator							
2.1							
			profit/cyclo		arocc		
			w/bulk	net profit/cycle	production	net	profit
Yield, lbs/incubator	value \$/lb	crop value	cost)	net pront/ cycle	value/vear	profit/year	percentage
	\$10.00	\$ 210.00	\$ (4.00)	\$ 175.28	\$ 2,520.00	\$ 1,686.64	404.78%
2.1	\$12.00	\$ 252.00	\$ 38.00	\$ 217.28	\$ 3,024.00	\$ 2,190.64	525.74%
2.1	\$15.00	\$ 315.00	\$ 101.00	\$ 280.28	\$ 3,780.00	\$ 2,946.64	707.17%
	\$20.00	\$ 420.00	\$ 206.00	\$ 385.28	\$ 5,040.00	\$ 4,206.64	1009.57%
	total						
	yield/cycle	Andrel a della farmera		and the second and a			
Viold Ibs /insubator	(IDS)/Incubat	(lbc)/incubator		cyclic materials	¢ 0.25		
field, ibs/incubator	or	(IDS)/Incubator		voorly motorials	\$ 0.55		
2.1	21.0	252.0		cost per cu ft	¢ 417		
	21.0	252.0			φ -1.17		
			vesily even		not profit /ou	gross	not profit (ou
			weight (lbc)	crop value per cu ft	ft/cycle	profit/cu ft	ft /vear
Yield, lbs/incubator	value \$/lb	crop value	margine (105)		it/cycle	/year	it/year
	\$10.00	\$ 210.00	252	\$ 2.10	\$ 1.75	\$ 25.20	\$ 21.03
2.1	\$12.00	\$ 252.00	252	\$ 2.52	\$ 2.17	\$ 30.24	\$ 26.07
	\$15.00	\$ 315.00	252	\$ 3.15	\$ 2.80	\$ 37.80	\$ 33.63
	\$20.00		252	\$ 4.20	\$ <u>3.85</u>	\$ 50.40	\$ 46.23

Equations

- Cycles per year: (Weeks per year)/(Weeks per cycle)
  - Weeks per year is total number of weeks in a year used to grow ("Growing weeks per year" in the linked reference table.
- Actual product cost per year: (Actual cost/cycle)\*(Cycles/ year)
- Profit/cycle w/ bulk cost: (Crop value)-(Bulk cost/cycle)
- Net profit per cycle: (Crop value/lb)-(Actual cost/cycle)
- Gross production value/year: (Crop value)\*(Cycles per year)
- Net Profit/year: [(Net profit/cycle)\*(Cycles per year)]-(Actual product cost/year)
- Profit percentage: [(Net profit per year)/(Actual product cost per year)] x100%
- Total yield/cycle: (Yield/incubator (lbs)\*(Number incubators)
- Total yield/year (lbs): (Total yield/cycle)\*(Number cycles per year)

- Cyclic materials cost per cu ft: (Actual cost/cycle)/(Cu ft usable space)
- Yearly materials cost per cu ft: (Cyclic cost per cu ft)\*(Cycles/year)
- Crop value per cu ft: (Crop value)/(Cu ft usable space)
- Net profit per cu ft per cycle: (Net profit/cycle)/(Cu ft usable space)
- Gross profit per cu ft/year: (Crop value per cu ft)\*(Cycles/year)
- Net profit per cu ft/year: (Net profit/cu ft/cycle)\*(Cycles/year)

Lastly, we have the data output table. This is a condensed summary of some key factors generated through the tables for easy analysis:

DATA OUTPUT SUMMARY					
Yield/10 cu ft (lbs)	2				
cu ft 1 incubator	10				
Value (\$/lb)	\$20.00				
Weeks per cycle	3				
Weeks per year	50				
Cycles per year	16.7				
=					
Investment cost	\$ 8,459.99				
Total Crop Weight (lbs)	1,933.33				
Cycles until profit	4.0				
Months to profit	6.0				
Net profit/year	\$ 35,986.93				
Purchasable space (incubators) w/ recycled profits	3599				

To look at expansion scenarios, we use the Expansion scenario calculator. It is designed similarly to the above cost and profit calculator (1), with a few modifications:

	cos	t/turnaround o	calculator		
	Table X, "Inc	ubator" Definitio	on		
				"incubator" cost	
total number incubators:	10	"=x10 cu ft space"		\$125.00	
item	one incubator	all incubators	amt. needed/cycle	units	
cu ft usable space	10	100	-	cu ft space	
length of HDPE tube	10	100	0.036	rolls	
(lbs) dry hay per cycle	10	100	0.1	bales	
(lbs) dry grain per cycle	5	50	1	bag	
grain jars per cycle	5	50	5.56	pkgs	
pillow stuffing	5	50	0.5	pkgs	
linked	reference table			Scenario values	
				year #	recycled profit %
item	variable	cost		1	100.00%
number incubators owned	1	-\$125.00		2	100.00%
incubator unit	1	\$125.00		3	100.00%
weight 1 hay bale (lbs)	1600	\$100.00		4	75.00%
weight 1 bag grain (lbs)	50	\$16.00		5	75.00%
2 mil HDPE tubing, 3000 ft, 12" dia.	2800	\$113.00		6	50.00%
heat sealer	1	\$60.00		7	50.00%
grain jars in pkg	9	\$9.00		8	50.00%
jars/bag stuffing	100	\$8.00		9	50.00%
weeks per cycle	3	Ö		10	0.00%
growing weeks per year	48	©			
est. overhead cost/10 cu ft useable space/cycle	©	\$1.00			
Yield, lbs/10 cu ft/cycle	1.5	©			
value/ (lb)	1	\$12.00			

#### Equations

• All equations used are the same as the cost and profit calculator (1)

The major difference to be noted at this point is the table labeled "Scenario Values". This table is where values for recycled profits (for the purpose of purchasing more usable grow space) are figured for the year's end (next year's beginning).

Following, we see the expansion scenario calculator. This table is to be used in conjunction with the Table X, definition of Incubator. These numbers are fed in to the Expansion Scenario calculator, which we have seen before:

					Timeline:	Begin Year #	1	Below
	Fyn	ansion scenario	calcu	lator				
	Lvb	ansion scenario	carcu	lator				
item	cost per	multiplier		total			1	
incubation space owned	-\$125.00	1	\$	(125.00)				
incubation space expansion		-	- T	(======)				
final	\$125.00	10	\$	1,250.00	AKA Facilitie	s purchase cost		
grain jars 0.5 gal	\$1.00	50	\$	50.00	or purchase cost p	er (10) cubic feet of		
pillow stuffing	\$8.00	1	\$	8.00	used g	row space		
sorghum grain, bag	\$16.00	1	\$	16.00				
wheat straw hay, bale	\$100.00	0.1	\$	6.25				
overhead/ 10 cu ft/cycle	\$1.00	10.00	\$	10.00				
2 mil HDPE tubing, 3000 ft, 12"								
dia.	\$113.00	1	\$	113.00				
		total 1	\$	1,388.25				
yield/incubator (lbs)	value/lb	crop value, total	cycle	es to profit	weeks to profit	months to profit		
1.5	\$12.00	\$180.00		7.7	23.1	5.8		
	8		То	tal Crop				
cycles until profit			Wei	ght (lbs)				
profitable cycles per year	8			240				
crop sale value / year	\$ 1,440.00							
recycled profits @ (%)	100.00%							
recycled profits @ (\$)	rş -							
allows for purchase of (x10	0	1						
cu ft uable grow space)								
totalling (x 10 cu ft grow	10	1						
space) to begin the next	10	1						
year "= #10 ft logs"	10							
- #10 It logs	10	1						

What we have not seen before, however, is the output table towards the bottom. This table shows (most importantly) cycles to profit and profitable cycles per year. Using this information, combined with the recycled profit percentage, populates the next set of tables.

Equations

- Cycles until profit: (Cycles to profit), rounded up to the nearest whole number
- Profitable cycles per year: (Growing cycles per year)-(Cycles until profit)
- Crop sale profit value per year: (Profitable cycles/year)\*(Crop value, Total)
- Recycled profits @ %: linked to the Scenario Values table
- Recycled profits @ \$: (Crop sale profit value per year)\*(Recycled profit %)
- Purchasable grow space: (Recycled profit @ \$)/(Incubator cost), rounded down to nearest whole number
- *#* Incubators to begin the next year: (Purchasable incubators)+(Total incubators from previous year)
- =10 ft logs: assuming one incubator equates to 10 cu ft grow space: (Total incubators to begin next year)\*(1)

Lastly, we have the Cost/Profit scenarios for the next 9 years (10 in total):

				Timeline:	Begin Year #	2	Below
	Cost/Profi	•			Vear#	2	
· · · · · · · · · · · · · · · · · · ·	0050/11011	-			i cui #	-	
number incubators:	21	"=x10 cu ft space"					
non-reusable equipment							
item	one incubator	total incubation space	amt. needed/cycle	units	bulk cost	actual cost/cycle	actual cost/year
CU FT USABLE SPACE	10	210	210	cu ft space	-	-	-
length HDPE tube/cycle	10	210	0.075	rolls	\$ 113.00	\$ 8.48	\$ 135.60
(lbs) dry hay per cycle	10	210	0.1	bales	\$ 100.00	\$ 13.13	\$ 210.00
(lbs) dry grain per cycle	5	105	2.1	bag	\$ 48.00	\$ 33.60	\$ 537.60
overhead/10 cu ft usable space	\$ 1.00	\$ 21.00	\$ 21.00	-	\$ 21.00	\$ 21.00	\$ 336.00
				cost/cycle	\$ 282.00	\$ 76.20	\$ 1,219.20
roughle oguinment							
grain jars per cycle	5	105	11.67	nkas	\$ 108.00	¢ 11.67	
pillow stuffing	5	105	1.05	pkgs	\$ 168.00	\$ 11.07	
philow sturning	5	105	1.05	pkgs	\$ 10.00	\$ 0.40 ¢ 20.07	
				COSL	\$ 124.00	φ 20.07	
	weeks/cycle	weeks/yr	cycles/year				
cycles per year	3	48	16.0		total pro	duct cost	\$ 1,219.20
Yield, (lbs)/incubator							
1.5							
			mentit (mente vu (		avera production		
Yield, lbs/incubator	value \$/lb	crop value/cycle	bulk cost)	net profit/cycle	value	total net profit	profit percentage
1.5	\$12.00	\$ 378.00	\$ 96.00	\$ 301.80	\$ 6,048.00	\$ 4,828.80	396.06%
	total yield/cycle	total yield/year		cyclic materials			
Yield, Ibs/incubator	(Ibs)/incubator	(Ibs)/incubator		cost per cu ft	\$ 0.36		
1.5	21.5	504.0		yearly materials	¢ 5.91		
	51.5	504.0		cost per cu it	\$ 5.01		
			Total Crop	crop value per cu	net profit /cu	total crop value/cu	total net profit/cu
Yield, lbs/incubator	value \$/lb	crop value	Weight (lbs)	ft	ft/cycle	ft	ft
1.5	\$12.00	\$ 378.00	504	\$ 1.80	\$ 1.44	\$ 28.80	\$ 22.99
Puefftelde Guelee ne X	16.0						
Profitable Cycles per Year	16.0						
Net Profit per Year	\$ 4,828.80						
Recycled Profits @ (%)	100.00%						
Allows for Durchase of (v10	\$ 4,828.80						
cu ft grow cpace)	38						
Totalling (v 10 cu ft grow							
space) to Begin the Novt	59						
Year							
"= # 10-ft logs"/cycle	59						
= " 10 11 logs / cycle	55						

This table (and those which follow after) look similar (and they are) with one slight difference, in that (profitable cycles per year) is directly linked to (Cycles/year). This scenario calculator assumes no down time for production space expansion and no product loss due to unforeseen circumstances. Since all expansion is paid for with previous year's profits, there is no need to adjust the number of profitable cycles per year. Expansion scenarios can be generated for up to ten years, though more may be added.

The information obtained from the expansion scenarios is compiled into a summary table for easy reference:

	Expansion Summary table									
Year	Yearly overhead	Net product cost/year	Total Recycled Investment, Year End	Net Profit/Year	Net Profit/Year - Recycled Investment	Yearly profit margin	Total Production /Year (lbs)			
1	\$ 1,616.00	\$ 11,035.50	\$ 24,750.00	\$ 24,750.00	\$ -		2,400			
2	\$ 5,552.00	\$ 20,145.83	\$104,774.17	\$ 104,774.17	\$ -	520.08%	8,328			
3	\$ 22,304.00	\$ 80,931.66	\$420,908.34	\$ 420,908.34	\$ -	520.08%	33,456			
4	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
5	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
6	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
7	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
8	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
9	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			
10	\$ 89,648.00	\$325,294.17	\$ -	\$1,691,785.83	\$1,691,785.83	520.08%	134,472			

\*numbers displayed in above table examples are inconsistent with one another and should not be considered for any purposes of analysis. They are strictly for reference example.

DATA,	, TABLES, PICTU	URES
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	Table 1 thesis co	ost sheet	
INCUBATOR			
item	cost per	multiplier	total
refrigerator	\$30.00	1	\$30.00
hygrotherm	\$75.00	1	\$75.00
ultrasonic humidifier	\$45.00	1	\$45.00
PVC piping	\$10.00	1	\$10.00
furnace tape	\$7.00	1	\$7.00
plastic sheeting*		no cost	
sheet metal drip tray	\$55.00	1	\$55.00
rope lights	\$10.00	1	\$10.00
light switch	\$10.00	1	\$10.00
30 gal aquarium pump	\$18.00	1	\$18.00
		Incubator Cost	\$260.00
OTHER SUPPLIES			
item	cost per	multiplier	total
75 lb wheat straw hay	\$7.00	2	\$14.00
50 lb sorghum grain	\$16.00	2	\$32.00
plastic bagging	\$0.00	0	\$0.00
1qt mason jar	\$1.50	18	\$27.00
0.5gal mason jar	\$2.00	6	\$12.00
synthetic pillow stuffing	\$8.00	1	\$8.00
tissue culture	\$12.00	1	\$12.00
		Supplies Cost	\$105.00
		Supplies Cost	\$105.00

Table 1 outlines the total cost for the thesis research project itself. Cost of the incubator and cost of "other supplies" were figured separately for use in other tables.

TABLE 2	yields (pounds	) and projected	value per cycl	e, thesis	
		#	incubators		
	1	2	5	10	20
yield (lbs)/incubator					
1.5					
crop yield	1.5	3	7.5	15	30
projected value (\$/lb)					
\$10.00	\$15.00	\$30.00	\$75.00	\$150.00	\$300.00
\$12.00	\$18.00	\$36.00	\$90.00	\$180.00	\$360.00
\$15.00	\$22.50	\$45.00	\$112.50	\$225.00	\$450.00
\$17.00	\$25.50	\$51.00	\$127.50	\$255.00	\$510.00
\$20.00	\$30.00	\$60.00	\$150.00	\$300.00	\$600.00
\$23.00	\$34.50	\$69.00	\$172.50	\$345.00	\$690.00
\$25.00	\$37.50	\$75.00	\$187.50	\$375.00	\$750.00
yield (lbs)/incubator					
2					
crop yield	2	4	10	20	40
projected value (\$/lb)					
\$10.00	\$20.00	\$40.00	\$100.00	\$200.00	\$400.00
\$12.00	\$24.00	\$48.00	\$120.00	\$240.00	\$480.00
\$15.00	\$30.00	\$60.00	\$150.00	\$300.00	\$600.00
\$17.00	\$34.00	\$68.00	\$170.00	\$340.00	\$680.00
\$20.00	\$40.00	\$80.00	\$200.00	\$400.00	\$800.00
\$23.00	\$46.00	\$92.00	\$230.00	\$460.00	\$920.00
\$25.00	\$50.00	\$100.00	\$250.00	\$500.00	\$1,000.00
		1			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
yield (lbs)/incubator					
2.5					
crop yield	2.5	5	12.5	25	50
projected value (\$/lb)					
\$10.00	\$25.00	\$50.00	\$125.00	\$250.00	\$500.00
\$12.00	\$30.00	\$60.00	\$150.00	\$300.00	\$600.00
\$15.00	\$37.50	\$75.00	\$187.50	\$375.00	\$750.00
\$17.00	\$42.50	\$85.00	\$212.50	\$425.00	\$850.00
\$20.00	\$50.00	\$100.00	\$250.00	\$500.00	\$1,000.00
\$23.00	\$57.50	\$115.00	\$287.50	\$575.00	\$1,150.00
\$25.00	\$62.50	\$125.00	\$312.50	\$625.00	\$1,250.00

Table 2 shows crop yield and value across 1, 2, 5, 10, and 20 incubators in one 4week cycle, based on 1.5, 2.0, and 2.5 pounds of wet mushrooms per crop. This does not factor in supplies cost. This is essentially a projected possible gross profit sheet.

	Table 3, inve	stment/turnar	ound, thesis		
est. cost per incubator	\$260.00				
non-reusable supplies	\$7.81				
number of incubators	1	2	5	10	20
incubator cost	\$260.00	\$520.00	\$1,300.00	\$2,600.00	\$5,200.00
other supplies cost	\$7.81	\$15.62	\$39.05	\$78.10	\$156.20
total cost	\$267.81	\$535.62	\$1,339.05	\$2,678.10	\$5,356.20
profit, 1.5lb, 10\$/lb	\$15.00	\$30.00	\$75.00	\$150.00	\$300.00
# months until profit	17.3	17.3	17.3	17.3	17.9
profit, 1.5lb, 25\$/lb	\$37.50	\$75.00	\$187.50	\$375.00	\$750.00
# months until profit	6.9	6.9	6.9	6.9	7.1
profit, 2lb, 10\$/lb	\$20.00	\$40.00	\$100.00	\$200.00	\$400.00
# months until profit	13	13	13	13	13.4
profit, 2lb, 25\$/lb	\$50.00	\$100.00	\$250.00	\$500.00	\$1,000.00
# months until profit	5.2	5.2	5.2	5.2	5.4
profit, 2.5lb, 10\$/lb	\$25.00	\$50.00	\$125.00	\$250.00	\$500.00
# months until profit	10.4	10.4	10.4	10.4	10.7
profit, 2.5lb, 25\$/lb	\$62.50	\$125.00	\$312.50	\$625.00	\$1,250.00
# months until profit	4.16	4.16	4.16	4.16	4.3

Table 3 is based on the projected profit range from Table 2 at 1.5, 2.0, and 2.5 lb of yield per crop per incubator with (figuring) for supplies costs based on the "crop cost/profit calculator." "Number of months until profit" indicates the number of months until the reusable grow equipment is paid for through crop sales.

## Table 4, nutrition information

	А	mounts per	1 large (148g)		
Calorie Inforn	nation		Protein & Amino	Acids	
Amounts Per Selected Serving		%DV	Amounts Per Selected Serving		%
Calories 63.6	(266 kJ)	3%	Protein	4.9 g	1
From Carbohydrate 38.6	(162 kJ)				
From Fat 5.5	(23.0 kJ)			More d	leta
From Protein 19.6	(82.1 kJ)				
From Alcohol 0.0	(0.0 kJ)		Vitamins		
			Amounts Per Selected Serving		%
			Vitamin A	71.0 IU	
			Vitamin C	0.0 ma	
			Vitamin D	~	
			Vitamin E (Alpha Tocopherol)	0.0 mg	-
Carbohydra	ates		Vitamin K	0.0 mcg	
			Thiamin	0.2 mg	1
Amounts Per Selected Serving		%DV	Riboflavin	0.5 mg	3
Total Carbohydrate	9.6 g	3%	Niacin	7.3 mg	3
Dietary Fiber	3.4 g	14%	Vitamin B6	0.2 mg	
Starch	0.0 g		Folate	40.0 mcg	1
Sugars	1.6 g		Vitamin B12	0.0 mcg	
	More	details 🔻	Pantothenic Acid	1.9 mg	1
	( More )		Choline	72.1 mg	
Fats & Fatty	Acids		Betaine	17.9 mg	
Amounts Per Selected Serving		%DV		More d	leta
Total Fat	0.6 g	1%			
Saturated Fat	0.0 g	0%	Minerals		
Monounsaturated Fat	0.0 g		Amounts Per Selected Serving		%
Polyunsaturated Fat	0.1 g		Calcium	4.4 ma	-
Total trans fatty acids	~		Iron	2.0 mg	1
Total trans-monoenoic fatty	~		Magnesium	26.6 mg	_
acids	_		Phosphorus	178 mg	1
I otal trans-polyenoic fatty acids	s ~		Potassium	622 mg	1
Total Omega-3 fatty acids	~		Sodium	26.6 mg	
I otal Omega-6 fatty acids	59.2 mg		Zinc	1.1 mg	- 1
and their equivalent names			Copper	0.4 mg	1
			Manganese	0.2 mg	1
	More	dotoilo <del>-</del>	Selenium	3.8 mcg	!
	wore	uctails V	Else ad al a		



The experimental incubation unit



Colonizing grain spawn



Fruit bodies 3 days to harvest



Freshly harvested mushroom, still slightly immature



Mushrooms on uncased straw log



Freshly harvested mushrooms, ~1 cu ft used grow space



Fully mature mushroom, past harvest window

## ANALYSIS AND DISCUSSION

For the purposes of analysis, input costs, crop cycles, recycled profits, and crop values are changed for the scenario at hand and do not use numbers exactly as derived from the initial feasibility project.

Scenario 1: immediate expansion from one to five incubators; 50 cubic feet of grow space used

Using small-scale parameters and an initial investment of \$1,264.33, we see the numbers below:

	cost	/turnaround	calculator		1		
	Table X, "Incu	ubator" Definiti	on				
total number incubators:	5	"=x10 cu ft space"		"incubator" cost \$260.00			
			amt				
item	one incubator	all incubators	needed/cycle	units			
length of HDPE tube	10	50	0.018	rolls			
(lbs) dry hay per cycle (lbs) dry grain per cycle	10 5	50 25	0.7	bales bag			
grain jars per cycle pillow stuffing	5	25 25	2.78	pkgs pkgs			
				-			
linked	reference table			year #	recycled profit %		
item	variable	cost -\$260.00		1	100.00%		
incubator unit	1	\$260.00		3	100.00%		
weight 1 bag grain (lbs)	50	\$8.00 \$16.00		4 5			
2 mil HDPE tubing, 3000 ft, 12" dia.	2800	\$113.00		6			
heat sealer Igrain jars in nko	1	\$60.00		7			
jars/bag stuffing	100	\$9.00		9			
weeks per cycle	3	(U) (A)		10			
est. overhead cost/10 cu ft	40	¢1.00					
useable space/cycle	15	\$1.00					
value/ (lb)	1	\$20.00					
				Timeline:	Begin Year #	1	Below
	Expa	ansion scenario	calculator				
item incubation space owned	cost per -\$260.00	multiplier 1	total				
incubation space expansion	\$260.00	5	\$ 1.300.00	AKA Facilitie	s purchase cost		
grain jars 0.5 gal	\$1.00	25	\$ 25.00	or purchase cost p	per (10) cubic feet of		
sorghum grain, bag	\$8.00	0.5	\$ 8.00	usea g	row space		
overhead/ 10 cu ft/cycle	\$8.00	5.00	\$ 5.33				
2 mil HDPE tubing, 3000 ft, 12" dia.	\$113.00	1	\$ 113.00				
		total 1	\$ 1,264.33				
yield/incubator (lbs)	value/lb	crop value, total	cycles to profit	weeks to profit	months to profit		
1.5	\$20.00	\$150.00	8.4	25.3	6.3		
			Total Crop				
cycles until profit	9		Weight (lbs)				
crop sale profit value /year	\$ 1,050.00		120				
recycled profits @ (%)	\$ 1,050.00						
allows for purchase of (x10 cu ft uable grow space)	4						
totalling (# incubators) to begin the next year	9						
"= #10 ft logs"	9						
				Timeline	Begin Vear #	2	Bolow
		-			Degin rear #		Delow
	Cost/Profi	E			Year#	2	
number incubators:	9	"=x10 cu ft space"					
non-reusable equipment		total incubation	amt				
item	one incubator	space	needed/cycle	units	bulk cost	actual cost/cycle	actual cost/year
length HDPE tube/cycle	10	90	0.032	rolls	\$ 113.00	\$ 3.63	\$ 58.11
(lbs) dry nay per cycle (lbs) dry grain per cycle	10 5	90 45	0.9	bales bag	\$ 16.00 \$ 16.00	\$ 9.60 \$ 14.40	\$ 153.60 \$ 230.40
overhead/10 cu ft usable space	\$ 1.00	\$ 9.00	\$ 9.00	- cost/cycle	\$ 9.00 \$ 154.00	\$ 9.00 \$ 36.63	\$ 144.00 \$ 586.11
reusable equipment							
grain jars per cycle	5	45 45	5.00	pkgs	\$ 45.00 \$ 8.00	\$ 5.00 \$ 3.60	
				cost	\$ 53.00	\$ 8.60	
	weeks/cycle	weeks/yr	cycles/year		total use	duct cost	¢ E96.11
cycles per year	3	48	16.0		total pro	duct cost	\$ 586.11
Yield, (lbs)/incubator							
1.5							
Vield Ibs (insubstar	uplus ¢ (lb	aren value (avale	profit/cycle w/	not modit (avala	gross production	total not profit	nuefit neusentras
1.5	\$20.00	\$ 270.00	bulk cost) \$ 116.00	\$ 233.37	value \$ 4,320.00	\$ 3.733.89	637.06%
Vield Ibs /insubatas	total yield/cycle	total yield/year		cyclic materials	¢ 0.41	1	
1.5	(ibs)/incubator	(105)/incubator		yearly materials	+ 0.41		
	13.5	216.0		cost per cu ft	⇒ 6.51		
			Total Crop	crop value per cu	net profit /cu	total crop value/cu	total net profit/cu
Yield, Ibs/incubator 1.5	value \$/lb \$20.00	crop value \$ 270.00	216 Weight (lbs)	ft \$ 3.00	ft/cycle \$ 2.59	ft \$ 48.00	ft \$ 41.49
Profitable Cycles per Year Net Profit per Year	16.0 \$ 3.733.89						
Recycled profits @ (%)	100.00%						
Allows for Purchase of (x10	14						
Totalling (x 10 cu ft grow	22						
Year	23						
"= # 10-ft logs"/cycle	23						

				Timeline:	Begin Year #	3	Below
	Cost / Profit	-			Voor#	2	
	COSL/ FIGH	E			Tear#	3	
number incubators:	23	"=x10 cu ft space"					
non-reusable equipment							
	In out about	total incubation	amt.		1 . II ak	· · · · · · · · · / avala	1
Item CU FT USABLE SPACE	10	space 230	230	cu ft space	bulk cost	actual cost/cycle -	actual cost/year
length HDPE tube/cycle	10	230	0.082	rolls	\$ 113.00	\$ 9.28	\$ 148.51
(lbs) dry hay per cycle	10	230	3.1	bales	\$ 32.00	\$ 24.53	\$ 392.53
overhead/10 cu ft usable space	\$ 1.00	\$ 23.00	\$ 23.00	-	\$ 23.00	\$ 23.00	\$ 368.00
				cost/cycle	\$ 216.00	\$ 93.62	\$ 1,497.85
reusable equipment							
grain jars per cycle	5	45	5.00	pkgs	\$ 45.00	\$ 5.00	
pillow stuffing	5	115	1.15	pkgs	\$ 16.00	\$ 9.20 \$ 14.20	
				COST	φ 01.00	φ 14.20	
aveles per vear	weeks/cycle	weeks/yr	cycles/year		Total pro	duct cost	¢ 1.407.95
cycles per year			10.0		Total prot	luct cost	φ <u>1</u> ,+57.05
Viold (lbc)/incubator							
1.5							
Vield Ibs (insubstar	value ¢ (lb	aran yalyo (ayala	profit/cycle w/	not nyofit (avalo	gross production	total not such	
field, Ibs/incubator	value \$/10	crop value/ cycle	bulk cost)	het pront/cycle	value	total net pront	pront percentage
1.5	\$20.00	\$ 690.00	\$ 474.00	\$ 596.38	\$ 11,040.00	\$ 9,542.15	637.06%
Vield, lbs/incubator	total yield/cycle (lbs)/incubator	total yield/year (lbs)/incubator		cyclic materials	\$ 0.41		
1.5	(199), incubator	(155))		yearly materials	ф 0111		
1.5	13.5	216.0		cost per cu ft	\$ 6.51		
Vield Ibs (insubstar	value ¢ (lb		Total Crop	crop value per cu	net profit /cu	crop value/cu ft	net profit/cu
1.5	\$20.00	\$ 690.00	552	\$ 3.00	\$ 2.59	\$ 48.00	\$ 41.49
		-		-			
Profitable Cycles per Year	16.0						
Net Profit per Year	\$ 9,542.15						
Recycled Profits @ (%)	100.00%						
Allows for Purchase of (x10	\$ 5,542.15						
cu ft grow space)	30						
Totalling (x 10 cu rt grow space) to Begin the Next	59						
Year							
"= # 10-ft logs"/cycle	59						
				Timeline:	Begin Year #	4	Below
	Cost/Profit			Timeline:	Begin Year #	4 4	Below
	Cost/Profit	t		Timeline:	Begin Year # Year#	44	Below
number incubators:	Cost/Profit	t "=x10 cu ft space"		Timeline:	Begin Year # Year#	<u>4</u> 4	Below
number incubators:	Cost/Profit	t "=x10 cu ft space"		Timeline:	Begin Year # Year#	44	Below
number incubators:	Cost/Profit	t "=x10 cu ft space" total incubation	amt.	Timeline:	Begin Year # Year#	4	Below
number incubators: non-reusable equipment item	Cost/Profit	t "=x10 cu ft space" total incubation space	amt. needed/cycle 500	Timeline: units	Begin Year # Year# bulk cost	4 4 actual cost/cycle	Below
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590	amt. needed/cycle 590 0.211	Timeline: units cu ft space rolls	Begin Year # Year# bulk cost \$ 113.00	4 4 actual cost/cycle \$ 23.81	Below actual cost/year \$ 380.97
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 590	amt. needed/cycle 590 0.211 7.9	units cu ft space rolls bales	Begin Year # Year# bulk cost \$ 113.00 \$ 64.00	4 4 actual cost/cycle \$ 23.81 \$ 62.93	Below actual cost/year \$ 380.97 \$ 1,006.93
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle nverhead/10 cu ft usable space	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 295 \$ 59.00	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00	units cuft space rolls bales bag	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry aprin per cycle overhead/10 cu ft usable space	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 295 \$ 59.00	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00	units cuft space rolls bales bag cost/cycle	Begin Year # Year# bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 95.00 \$ 332.00	4 4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 94.04 \$ 59.00 \$ 240.14	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 295 \$ 59.00	amt. needed/cycle 590 0.211 5.9 5.9 \$ 59.00	units cu ft space rolls bales bag - cost/cycle	Begin Year # Year # \$ 113.00 \$ 64.00 \$ 96.00 \$ 59.00 \$ 332.00	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00	Units cu ft space rolls bales bag - cost/cycle	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 345.00	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry par per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 5.00 2.95	units cu ft space rolls bales bag - cost/cycle	Begin Year # Year# bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 332.00	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ \$ 5.00 \$ 23.60 \$ 23.60	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle ((bs) dry hay per cycle ((bs) dry grain per cycle ((bs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing	Cost/Profit	t "=x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 	Units cuft space rolis bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ \$ 5.00 \$ 23.60 \$ 28.60	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry hay per cycle (lbs) dry prain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing	Cost/Profit	t "=x10 cu ft space" total incubation space \$90 590 590 295 \$59.00 45 295 45 295 weeks/yr	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00 5.00 2.95 cycles/year	units cu ft space rolls bales bag 	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 69.00 \$ 69.00	4 4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ \$ 5.00 \$ 23.60 \$ 23.60 \$ 28.60	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 3,842.30 \$ 3,842.30
number incubators: non-reusable equipment item Cu FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year	Cost/Profit	t "=x10 cu ft space") total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48	amt. needed/cycle 590 0.211 5.9 \$ 59.00 2.95 5.00 2.95 cycles/year 16.0	units cu ft space rolls bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 59.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 Total proc	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ \$ 5.00 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 944.00 \$ 3,842.30 \$
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number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (Ibs) dry hay per cycle (Ibs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year 	Cost/Profit	t =x10 cu ft space" total incubation s90 590 295 \$ 59.00 45 295 weeks/yr 48	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 5.00 2.95 cycles/year 16.0	Units cuft space rolis bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 Total proc	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 23.60 \$ 28.60 Juct cost	Below actual cost/year 3 380.97 3 1,006.93 4 1,510.40 3 3,842.30 3 3,842.30
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number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00	units cu ft space rolls bales bag cost/cycle pkgs pkgs cost cost ft/cycle \$ 1,529.86 cyclic materials cost per cu ft	Begin Year #           Year#           \$ 113.00           \$ 113.00           \$ 64.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 59.00           \$ 332.00           \$ 69.00           \$ 69.00           \$ 7000           \$ 69.00           \$ 7000           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 7000           \$ 28,320.00           \$ 28,320.00           \$ 0.41           \$ 0.41	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 240.14 \$ 5.00 \$ 23.60 \$ 28.60 Juct cost total net profit \$ 24,477.70	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30 \$ 3,842.30 \$ 3,842.30 profit percentage 637.06%
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number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value \$ 1,770.00	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs)	Timeline: units cuft space rolis bales bag - cost/cycle pkgs cost co	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 Total proc Total proc \$ 28,320.00 \$ 0.41 \$ 6.51 \$ 0.41	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 240.14 \$ 5.00 \$ 23.60 3 uct cost 4 40 5 23.60 3 24,477.70 5 24,477.70 5 24,477.70	Below  actual cost/year  \$ 380.97  \$ 1,006.93  \$ 1,510.40  \$ 9.44.00  \$ 3,842.30  \$ 3,842.30  \$ 3,842.30  profit percentage 637.06%  net profit/cu ft/year \$ 14,40
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing Cycles per year Vield, (lbs)/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 295 \$ 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value \$ 1,770.00	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 2.95 cycles/year cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolls bales bag bag cost/cycle pkgs pkgs cost	Begin Year #           Year#           \$ 113.00           \$ 113.00           \$ 64.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 332.00           \$ 332.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 0.41           \$ 6.51           \$ 0.41           \$ 0.51           \$ 0.51           \$ 0.51	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 23.60 \$ 28.60 Juct cost total net profit \$ 24,477.70 Crop value/cu ft /year \$ 48.00	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30 \$ 3,842.30 \$ profit percentage 637.06% 637.06% http://war \$ 41.49
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry ray per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value \$ 1,770.00	amt. needed/cycle 500 0.211 7.9 \$ 59 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolls bales bag cost/cycle pkgs pkgs pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 \$ 69.00 Total proc Total proc \$ 28,320.00 \$ 0.41 \$ 6.51 net profit /cu \$ 2.59	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 24.471.70 total net profit \$ 24,477.70 crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 380.97  \$ 1,006.93  \$ 1,510.40  \$ 9 44.00  \$ 3,842.30  \$ 3,842.30  \$ 7 7 5 3,842.30  \$ 7 7 5 3,842.30  \$ 1,510,40 \$ 1,510,40 \$ 1,510
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59,00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator \$ 1,770.00 \$ 1,770.00	amt. needed/cycle 500 0.211 7.9 5.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolis bales bag cost/cycle pkgs pkgs cost	Begin Year # Year # Vear # \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 \$ 69.00 <b>S</b> <b>Total prod</b> <b>S</b> <b>S</b> <b>S</b> <b>S</b> <b>S</b> <b>S</b> <b>S</b> <b>S</b>	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 240.14 \$ 59.00 \$ 240.14 \$ 24,477.70 Crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 380.97  \$ 1,006.93  \$ 1,510.40  \$ 3,842.30  \$ 3,842.30  \$ 3,842.30  \$ 7 7 5 3,842.30  \$ 1,510,40  \$ 3,842.30  \$ 1,510,40  \$ 3,842.30  \$ 1,510,40  \$ 3,842.30  \$ 1,510,40 \$ 1,510,40 \$ 1,510,40 \$ 1,510,40 \$ 1,510,40 \$ 1,510,40 \$ 1,510
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry par per cycle (lbs) dry grain per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year Net Profit per Year Net Profits @ (%)	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59,00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value	amt. needed/cycle 590 0.211 7.9 \$ 59.00 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolis bales bag - cost/cycle pkgs cost pkgs cost c	Begin Year # Year # \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 332.00 \$ 45.00 \$ 24.00 \$ 69.00 Total pro Total pro \$ 28,320.00 \$ 28,320.00 \$ 0.41 \$ 6.51 \$ 0.41	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 24.014 Cost actual net profit \$ 24,477.70 Crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 380.97  \$ 1,006.93  \$ 1,510.40  \$ 9.44.00  \$ 3,842.30  \$ 3,842.30  \$ 3,842.30  profit percentage 637.06%  net profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year Net Profit per Year Recycled profits @ (%) Recycled profits @ (%)	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value \$ 1,770.00	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cuft space rolis bales bag cost/cycle pkgs cost/cycle pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 332.00 \$ 332.00 \$ 69.00 \$ 24.00 \$ 69.00 <b>Total pro</b> <b>Total pro</b> \$ 28,320.00 \$ 0.41 \$ 6.51 <b>net profit /cu</b> <b>ft/cycle</b> \$ 2.59	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 23.60 \$ 23.60 actual cost total net profit \$ 24,477.70 crop value/cu ft /year \$ 48.00	Below actual cost/year \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 944.00 \$ 3,842.30 \$ 3,842.30 \$ profit percentage 637.06% 637.06% net profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry ray per cycle (lbs) dry ray ner cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Xield, lbs/incubator Xield, lbs/incu	Cost/Profit	t ==x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value	amt. needed/cycle 500 0.211 7.9 5.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolls bales bag cost/cycle cost/cycle pkgs pkgs cost	Begin Year #           Year#           \$ 113.00           \$ 113.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 332.00           \$ 45.00           \$ 45.00           \$ 69.00           \$ 69.00           \$ 69.00           \$ 70tal pro           \$ 28,320.00           \$ 0.41           \$ 6.51           net profit /cu ft/cycle           \$ 2.59	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 24.471.70 Unct cost total net profit \$ 24,477.70 Crop value/cu ft /year \$ 48.00	Below actual cost/year \$ 380.97 \$ 1,016.93 \$ 1,510.40 \$ 3,842.30 \$ 3,842.30 \$ profit percentage 637.06% 637.06%  net profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle grain jars per cycle pillow stuffing cycles per year Vield, (lbs)/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Net Profit per Year Recycled Profits @ (%) Recycled profits @ (%) Allows for Purchase of (x10 cu ft grow space) Totalling (x 10 cu ft grow	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator \$ 1,770.00 \$ 1,770.00	amt. needed/cycle 590 0.211 7.9 5.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolis bales bag cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 113.00 \$ 64.00 \$ 96.00 \$ 96.00 \$ 332.00 \$ 332.00 \$ 24.00 \$ 69.00 \$ 24.00 \$ 69.00 \$ 24.00 \$ 28,320.00 \$ 28,320.00 \$ 0.41 \$ 0.51 \$ 0.41 \$ 0.51	4 4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 59.00 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 240.14 \$ 59.00 \$ 240.14 \$ 59.00 \$ 240.14 \$ 240	Below  actual cost/year  \$ 380.97  \$ 1,006.93  \$ 1,510.40  \$ 3,842.30  \$ 3,842.30  \$ 3,842.30  \$ 7 7 5 3,842.30  \$ 1,510.40  \$ 3,842.30  \$ 1,510.40  \$ 3,842.30  \$ 1,510.40  \$ 3,842.30  \$ 1,510.40 \$ 1,510.40 \$ 1,510.40 \$ 1,510.40 \$ 1,510.40 \$ 1,510.40 \$ 1,510
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDF tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle (lbs) dry grain per cycle pillow stuffing cycles per year Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit	t =x10 cu ft space" total incubation space 590 590 295 \$ 59.00 45 295 weeks/yr 48 crop value/cycle \$ 1,770.00 total yield/year (lbs)/incubator 216.0 crop value	amt. needed/cycle 590 0.211 7.9 \$ 59.00 2.95 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 1,438.00 Total Crop Weight (lbs) 1,416	Timeline: units cu ft space rolis bales bag - cost/cycle pkgs pkgs cost pkgs cost c	Begin Year #           Year#           \$ 113.00           \$ 64.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 96.00           \$ 332.00           \$ 45.00           \$ 24,00           \$ 69.00           \$ 7041           \$ 28,320.00           \$ 0.41           \$ 6.51           met profit /cu           \$ 2.59           \$ 2.59	4 actual cost/cycle \$ 23.81 \$ 62.93 \$ 94.40 \$ 59.00 \$ 240.14 \$ 5.00 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 23.60 \$ 244.71 \$ 24,477.70 Crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 380.97 \$ 1,006.93 \$ 1,510.40 \$ 9.944.00 \$ 3,842.30  \$ 3,842.30  \$ 3,842.30  profit percentage 637.06%  net profit/cu ft/year \$ 41.49

At the end of year four, we see projected profits of \$24,000 per year.

## Scenario 2: immediate expansion to 20 incubators, 200 cu ft of grow space used

Using again small-scale parameters and with an initial calculated investment of \$5,294.00, we see the following numbers:

	cost	/turnaround	calculator				
	Table X, "Inc	ubator" Definiti	on				
total number incubators:	20	"=x10 cu ft space"		"incubator" cost \$260.00			
	-		amt.				
item	one incubator	all incubators	needed/cycle	units			
length of HDPE tube	10	200	0.071	rolls			
(lbs) dry hay per cycle (lbs) dry grain per cycle	10 5	100	2.7	bales bag			
grain jars per cycle pillow stuffing	5	100	11.11	pkgs pkgs			
				-			
linked	reference table			Scenar year #	rio values recycled profit %		
item	variable	cost		1	100.00%		
incubator unit	1	\$260.00		3	100.00%		
weight 1 hay bale (lbs) weight 1 bag grain (lbs)	75 50	\$8.00 \$16.00		4			
2 mil HDPE tubing, 3000 ft, 12" dia	2800	\$113.00		6			
heat sealer	1	\$60.00		7			
jars/bag stuffing	9	\$9.00 \$8.00		8			
weeks per cycle	3	٢		10			
growing weeks per year est_overhead cost/10 cu ft	48	۳					
useable space/cycle	0	\$1.00					
Yield, lbs/10 cu ft/cycle	1.5	٢					
value/ (lb)	1	\$20.00					
				Timeline:	Begin Year #	1	Below
	Fxn	ansion scenario	calculator				
14			tatal				
incubation space owned	-\$260.00	1	\$ (260.00)				
incubation space expansion final	\$260.00	20	\$ 5,200.00	AKA Facilitie	s purchase cost		
grain jars 0.5 gal pillow stuffing	\$1.00 \$8.00	100	\$ 100.00 \$ 8.00	or purchase cost pused of	per (10) cubic feet of		
sorghum grain, bag	\$16.00	2	\$ 32.00	used g	ion space		
overhead/ 10 cu ft/cycle	\$1.00	20.00	\$ 20.00				
2 mil HDPE tubing, 3000 ft, 12" dia.	\$113.00	1	\$ 113.00				
		total 1	\$ 5,294,33				
vield/incubator (lbs)	value/lb	cron value total	cycles to profit	weeks to profit	months to profit		
1.5	\$20.00	\$600.00	8.8	26.5	6.6		
cycles until profit	9		Total Crop Weight (lbs)				
profitable cycles per year crop sale profit value /vear	7 \$ 4,200.00		480				
recycled profits @ (%)	100.00%						
allows for purchase of (x10	\$ 4,200.00						
cu ft uable grow space) totalling (# incubators) to	26						
begin the next year "= #10 ft logs"	36						
-							
				Timeline:	Begin Year #	2	Below
	Cost /Brofi	-			Voor#	2	
	COST/ PTON				real#	2	
number incubators:	36	"=x10 cu ft space"					
non-reusable equipment		total incubation	amt.				
item	one incubator	space 360	needed/cycle	units	bulk cost	actual cost/cycle	actual cost/year
length HDPE tube/cycle	10	360	0.129	rolls	\$ 113.00	\$ 14.53	\$ 232.46
(Ibs) dry hay per cycle (Ibs) dry grain per cycle	10 5	360 180	4.8	bales bag	\$ 40.00 \$ 64.00	\$ 38.40 \$ 57.60	\$ 614.40 \$ 921.60
overhead/10 cu ft usable space	\$ 1.00	\$ 36.00	\$ 36.00	- cost/cycle	\$ 36.00 \$ 253.00	\$ 36.00 \$ 146.53	\$ 576.00 \$ 2,344.46
reusable equipment							
grain jars per cycle	5	180	20.00	pkgs	\$ 180.00	\$ 20.00	
pillow stuffing	5	180	1.8	pkgs cost	\$ 16.00 \$ 196.00	\$ 14.40 \$ 34.40	
	weeks/cvcle	weeks/vr	cycles/year				
cycles per year	3	48	16.0		total pro	duct cost	\$ 2,344.46
field, (Ibs)/incubator 1.5							
Yield, lbs/incubator	value \$/lb	crop value/cycle	profit/cycle w/	net profit/cycle	gross production	total net profit	profit percentage
1.5	\$20.00	\$ 1,080.00	\$ 827.00	\$ 933.47	\$ 17,280.00	\$ 14,935.54	637.06%
Yield, lbs/incubator	total yield/cycle (lbs)/incubator	total yield/year (lbs)/incubator		cyclic materials cost per cu ft	\$ 0.41		
1.5	54.0	864.0		yearly materials	\$ 6.51		
	54.0	004.0			, 0.51		
			Total Crop	crop value per cu	net profit /cu	total crop value/cu	total net profit/cu
Yield, Ibs/incubator 1.5	value \$/lb \$20.00	crop value \$ 1,080.00	Weight (lbs) 864	ft \$ 3.00	ft/cycle \$ 2.59	ft \$ 48.00	ft \$ 41.49
Profitable Cycles per Year Net Profit per Year	16.0 \$ 14 935 F4						
Recycled Profits @ (%)	100.00%						
Recycled profits @ (\$) Allows for Purchase of (x10	\$ 14,935.54 57						
cu ft grow space) Totalling (x 10 cu ft grow	5,						
space) to Begin the Next Year	93						

				Timeline:	Begin Year	#,	3	Below
	Cost/Profit	•			Vear#		3	
	COSt/ FTOIL				i cai #		J	
number incubators:	93	"=x10 cu ft space"						
non-reusable equipment								
item	one incubator	total incubation	amt.	units	bulk cost		actual cost/cycle	actual cost/year
CU FT USABLE SPACE	10	930	930	cu ft space	-		-	-
length HDPE tube/cycle	10	930	0.332	rolls	\$ 11	3.00	\$ 37.53	\$ 600.51
(lbs) dry grain per cycle	5	465	9.3	bag	\$ 16	0.00	\$ 99.20	\$ 1,587.20 \$ 2,380.80
overhead/10 cu ft usable space	\$ 1.00	\$ 93.00	\$ 93.00	-	\$ 9	3.00	\$ 93.00	\$ 1,488.00
				cost/cycle	\$ 47	0.00	\$ 3/8.53	\$ 6,056.51
reusable equipment				-				
grain jars per cycle pillow stuffing	5	180 465	20.00	pkgs	\$ 18	0.00	\$ 20.00 \$ 37.20	
				cost	\$ 22	0.00	\$ 57.20	
	weeks/cvcle	weeks/vr	cycles/year					
cycles per year	3	48	16.0		Tota	al prod	uct cost	\$ 6,056.51
Yield, (lbs)/incubator								
1.5								
Yield, lbs/incubator	value \$/lb	crop value/cycle	profit/cycle w/	net profit/cycle	gross product	ion	total net profit	profit percentage
1.5	\$20.00	\$ 2,790.00	\$ 2,320.00	\$ 2,411.47	\$ 44,64	0.00	\$ 38,583.49	637.06%
	total yield/cycle	total yield/year		cyclic materials				
Yield, lbs/incubator	(lbs)/incubator	(lbs)/incubator		cost per cu ft	\$	0.41		
1.5	54.0	864.0		cost per cu ft	\$	6.51		
			Total Crop	crop value per cu	net profit /o	u	crop value/cu ft	net profit/cu
Yield, lbs/incubator	value \$/lb	crop value	Weight (lbs)	ft	ft/cycle	2.50	/year	ft/year
1.5	\$20.00	\$ 2,790.00	2,232	\$ 3.00	\$	2.59	\$ 48.00	\$ 41.49
	16.0							
Net Profit per Year	\$ 38,583,49							
Recycled Profits @ (%)	100.00%							
Recycled profits @ (\$) Allows for Purchase of (x10	\$ 38,583.49							
cu ft grow space)	148							
Totalling (x 10 cu ft grow	241							
Year	241							
"= # 10-ft logs"/cycle	241							
				Timeline:	Begin Year	#	4	Below
	Cost/Profit	•		Timeline:	Begin Year	#	<u>4</u> <u>4</u>	Below
	Cost/Profit	t		Timeline:	Begin Year Year#	#	<u>4</u> 4	Below
number incubators:	Cost/Profit	t "=x10 cu ft space"		Timeline:	Begin Year Year#	#	<u>4</u> 4	Below
number incubators:	Cost/Profit	"=x10 cu ft space"		Timeline:	Begin Year Year#	#	44	Below
number incubators:	Cost/Profit	"=x10 cu ft space" total incubation	amt.	<u>Timeline:</u>	Begin Year Year#	#	4	Below
number incubators: non-reusable equipment item CUFT USABLE SPACE	Cost/Profit	"=x10 cu ft space" total incubation space 2410	amt. needed/cycle 2410	Timeline: units cuft space	Begin Year Year# bulk cost	#	4 4 actual cost/cycle	Below
number incubators: non-reusable equipment item CU FT USABLE SPACE length HOPE tube/cycle	Cost/Profit	*=x10 cu ft space" total incubation space 2410 2410	amt. needed/cycle 2410 0.861	Timeline: units cu ft space rolis	Begin Year Year# bulk cost	3.00	4 4 actual cost/cycle \$ 97.26	Below actual cost/year \$ 1,556.17
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry ray per cycle (lbs) dry ray ner cycle	Cost/Profit 241 one incubator 10 10 5	*=x10 cu ft space" total incubation space 2410 2410 2410 1205	amt. needed/cycle 2410 0.861 32.1 24.1	Timeline: units cu ft space rolls bales baa	Begin Year           Year#           bulk cost           \$           11           \$         26           \$         40	# 3.00 4.00 0.00	4 4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60
number incubators: non-reusable equipment item CU FT USABLE SPACE iength HDPE tube/cycle (lbs) dry pary per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space.	Cost/Profit 241 one incubator 10 10 5 \$ 1.00	*=x10 cu ft space total incubation space 2410 2410 1205 \$ 241.00	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00	Timeline: units cu ft space rolls bales bag	Begin Year           Year#           bulk cost           \$           11           \$           26           \$           40           \$	# 3.00 4.00 0.00 1.00	4 4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space	Cost/Profit	*=x10 cu ft space" total incubation space 2410 2410 2410 1205 \$ 241.00	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00	Timeline: units cu ft space rolis bales bag - cost/cycle	Begin Year Year# bulk cost \$ 11 \$ 26 \$ 40 \$ 24 \$ 1,01	3.00 4.00 0.00 1.00 8.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,159.60 \$ 3,856.00 \$ 15,694.84
number incubators: non-reusable equipment item CUFT USALE SPACE length HDPE tube/cycle (lbs) drh ay per cycle (lbs) drh ay per cycle (lbs) drh ay per cycle overhead/10 cu ft usable space reusable equipment	Cost/Profit	*=x10 cu ft space" total incubation space 2410 2410 2410 1205 \$ 241.00	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00	units cu ft space rolis bales bag cost/cycle	Begin Year           Year#           bulk cost           \$ 11           \$ 26           \$ 40           \$ 24           \$ 1,01	3.00 4.00 0.00 1.00 8.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,159.60 \$ 3,856.00 \$ 15,694.84
number incubators: non-reusable equipment item CUFT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle overhead/10 cu ft usable space	Cost/Profit	*=x10 cu ft space" total incubation space 2410 2410 2410 1205 \$ 241.00 180 1305	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05	units cu ft space rolls bales bag - cost/cycle	Begin Year           Year#           bulk cost           \$           11           \$           \$           40           \$           24           \$           \$           \$           \$           \$           \$           \$	3.00 4.00 0.00 1.00 8.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 96.0	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,159.60 \$ 3,856.00 \$ 15,694.84
number incubators: non-reusable equipment item CUF TUSAELE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing	Cost/Profit	*=x10 cu ft space total incubation space 2410 2410 1205 \$ 241.00 180 1205	amt. needed/cycle 2410 32.1 24.1 \$ 241.00 20.00 12.05	Units cu ft space rolls bales bag  cost/cycle pkgs pkgs cost	Begin Year           Year#           bulk cost           \$           11           \$           \$           11           \$	# 3.00 4.00 0.00 1.00 8.00 0.00 4.00 4.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ \$ 20.00 \$ 96.040 \$ 116.40	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing	Cost/Profit	t *=x10 cu ft space* total incubation space 2410 2410 2410 1205 \$ 241.00 180 1205 weeks/vr	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year	Timeline: units cu ft space rolls bales bag cost/cycle pkgs pkgs cost	Begin Year, Year# bulk cost \$ 11 \$ 26 \$ 40 \$ 24 \$ 1,01 \$ 18 \$ 10 \$ 28	# 3.00 4.00 0.00 8.00 0.00 4.00 4.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 96.40 \$ 116.40	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year	Cost/Profit	t =x10 cu ft space" total incubation space 2410 2410 1205 \$ 241.00 180 1205 weeks/yr 48	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0	Timeline: units cu ft space rolls bales bag - cost/cycle pkgs pkgs cost	Begin Year Year# bulk cost \$ 11 \$ 26 \$ 40 \$ 24 \$ 1,01 \$ 18 \$ 10 \$ 28 \$ 10 \$ 70 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 1	# 3.00 4.00 0.00 1.00 8.00 0.00 4.00 4.00 4.00	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 96.40 \$ 116.40 uct cost	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84 \$ 15,694.84
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number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year	Cost/Profit	<pre>t *=x10 cu ft space* total incubation space 2410 2410 2410 1205 \$ 241.00  180 1205 weeks/yr 48  crop value/cycle \$ 7,230.00 total yield/year (lbs)/incubator 864.0 crop value \$ 7,230.00</pre>	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 6,212.00 Total Crop Weight (Ibs) 5,784	units cu ft space rolls bales bag cost/cycle pkgs pkgs cost cost cost cost cost cost cost cos	Begin Year.           Year#           bulk cost           \$ 111           \$ 265           \$ 404           \$ 105           \$ 105           \$ 106           \$ 107           \$ 108           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68	3.00 4.00 1.00 8.00 0.00 1.00 1.00 0.00 0.00 11 prod 0.00 0.01 11 prod 0.00 0.01 11 prod 0.00 0.01 11 prod 0.00 0.01 11 prod	4 4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 * 20.00 \$ 96.40 \$ 116.40 uct cost total net profit \$ 99,985.16 crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 1,556.17  \$ 4,113.07  \$ 6,169.60  \$ 15,694.84   profit percentage 637.06%  actual cost/year  f/year  \$ 41.49
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDF tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year Net Profit per Year Recycled Profits @ (%) Bacycled profits @ (%)	Cost/Profit	t "=x10 cu ft space" total incubation space 2410 2410 1205 \$ 241.00 1205 \$ 241.00 180 1205 weeks/yr 48 crop value/cycle \$ 7,230.00 total yield/year (lbs)/incubator 864.0 crop value \$ 7,230.00	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 6,212.00 Total Crop Weight (lbs) 5,784	units cu ft space rolls bales bag cost/cycle pkgs pkgs cost cost ft cost per cu ft cost per cu ft crop value per cu ft \$ 3.00	Begin Year.           Year#           bulk cost           \$ 111           \$ 265           \$ 400           \$ 101           \$ 24           \$ 102           \$ 103           \$ 24           \$ 104           \$ 24           \$ 105           \$ 105           \$ 106           \$ 107           \$ 108           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68	3.00 4.00 0.00 1.00 8.00 0.00 4.00 4.00 4.00 3.00 0.00 0.00 0	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 960.93 \$ 20.00 \$ 966.40 \$ 116.40 uct cost total net profit \$ 99,985.16 crop value/cu ft /year \$ 48.00	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84 profit percentage 637.06% het profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CUFT USALE SPACE length HDPE tube/cycle (lbs) dry pay per cycle (lbs) dry pay per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing Cycles per year Vield, (lbs//incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Profitable Cycles per Year Net Profit per Year Net Profits © (%) Recycled profits © (%)	Cost/Profit 241 one incubator 10 10 10 5 \$ 1.00 5 5 weeks/cycle 3 value \$/lb \$20.00 total yield/cycle (lbs)/incubator 54.0 value \$/lb \$20.00 Cost of the second sec	<pre>t total incubation space 2410 2410 2410 1205 \$ 241.00  180 1205  crop value/cycle \$ 7,230.00 total yield/year (lbs)/incubator 864.0 crop value \$ 7,230.00</pre>	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 6,212.00 Total Crop Weight (Ibs) 5,784	Timeline: units cu ft space rolls bales bag cost/cycle pkgs cost pkgs cost cost pcost cos	Begin Year.           Year#           bulk cost           \$ 11           \$ 26           \$ 400           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 100           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68           \$ 115,68	3.00 4.00 0.00 4.00 4.00 4.00 1 prod 0.00 0.41 6.51 2.59	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 96.40 \$ 116.40 uct cost total net profit \$ 99,985.16 crop value/cu ft /year \$ 48.00	Below  actual cost/year  \$ 1,556.17  \$ 4,113.07  \$ 6,169.60  \$ 15,694.84  \$ 15,694.84  \$ 15,694.84  profit percentage 637.06%  net profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CUF TUSABLE SPACE length HDPE tube/cycle (lbs) dry pary per cycle (lbs) dry pary ner cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Vield, lbs/incubator 1.5 Vield, lbs/incubator Vield, lbs	Cost/Profit	t *=x10 cu ft space 2410 2410 2410 2410 1205 \$ 241.00 1205 weeks/yr 48 crop value/cycle \$ 7,230.00 total yield/year (lbs)/incubator 864.0 crop value \$ 7,230.00	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 6,212.00 Total Crop Weight (lbs) 5,784	Timeline: units cu ft space rolls bales bag cost/cycle pkgs pkgs cost per cu ft cost per cu ft cost per cu ft s 3.00	Begin Year.           Year#           bulk cost           \$ 111           \$ 26           \$ 404           \$ 26           \$ 404           \$ 26           \$ 115           \$ 26           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 18           \$ 100           \$ 115,68           \$ 115,68           \$ 15,68           \$ 15,68           \$ 15,68           \$ 15,68           \$ 15,68	3.00 4.00 0.00 4.00 4.00 4.00 1 prod 0.00 0.41 6.51	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 20.00 \$ 980.93 \$ 20.00 \$ 980.93 \$ 20.00 \$ 980.93 \$ 20.00 \$ 980.93 \$ 980.93 \$ 99.985.16 crop value/cu ft \$ 48.00	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84 \$ profit percentage 637.06% net profit/cu ft/year \$ 41.49
number incubators: non-reusable equipment item CUF TUSABLE SPACE length HDPE tube/cycle (lbs) dry ray per cycle (lbs) dry ray ner cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year cycles per year vield, (lbs/incubator 1.5 vield, lbs/incubator 1.5 vield, lbs/incubator vield, lbs	Cost/Profit	<pre> t *=x10 cu ft space* total incubation     space     2410     2410     2410     2410     1205 \$ 241.00      180     1205      weeks/yr     48  crop value/cycle     \$ 7,230.00  total yield/year (lbs)/incubator     864.0  crop value \$ 7,230.00 </pre>	amt. needed/cycle 2410 0.861 32.1 24.1 \$ 241.00 20.00 12.05 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 6,212.00 Total Crop Weight (lbs) 5,784	<pre>units cu ft space rolls bales bag cost/cycle pkgs pkgs pkgs cost cost cost cost cost cost cost cos</pre>	Begin Year, Year# bulk cost \$ 11 \$ 26 \$ 44 \$ 1,01 \$ 28 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10 \$ 10	3.00 4.00 1.00 8.00 0.00 1.00 4.00 4.00 4.00 4.00 0.00 1 prod 0.41 6.51	4 actual cost/cycle \$ 97.26 \$ 257.07 \$ 385.60 \$ 241.00 \$ 980.93 \$ 241.00 \$ 980.93 \$ 241.00 \$ 980.93 \$ 116.40 uct cost total net profit \$ 99,985.16 crop value/cu ft /year \$ 48.00	Below actual cost/year \$ 1,556.17 \$ 4,113.07 \$ 6,169.60 \$ 3,856.00 \$ 15,694.84 \$ 14,99 \$ 14,99 \$ 14,99 \$ 15,694.84 \$ 14,99 \$ 15,694.84 \$ 15,694.84 \$ 15,694.84 \$ 15,694.84 \$ 15,694.84 \$ 14,99 \$ 15,694.84 \$ 14,99 \$ 14,99\\

At the end of year four, we see a projected profit of \$99,985.16 per year.

## Scenario 3: immediate expansion to medium-scale production, 1000 cu ft (100 x 10 ft <u>"logs")</u>

The following scenario takes on a significant change to the input cost side of things and uses large-scale parameters; a 1600 lb round bale of hay costs approximately \$100, instead of a 75lb square bale costing \$8.00. Purchasing hay in this quantity is appropriate and cost effective for production at this scale. Incubation unit cost is changed from \$26.00/cu ft to \$10.00 per cubic foot, or, for the purposes of these tables, \$100.00 per incubator. The researcher feels this is a more relevant cost estimation from the scale perspective . At this scale, cultivation would take place in a larger, cheaper, less mobile, scaled-up version of the modified refrigeration unit. Sale prices is figured as wholesale at \$12.00/lb

With an initial calculated investment of \$11,000, we see the following numbers:

	cost	/turnaround	calculator				
	Table X, "Inc	ubator" Definiti	on				
total number incubators:	100	"=x10 cu ft space"		"incubator" cost \$100.00			
			amt.				
item	one incubator	all incubators	needed/cycle	units			
length of HDPE tube	10	1000	0.357	rolls			
(lbs) dry nay per cycle (lbs) dry grain per cycle	10 5	500	0.6	bales bag			
grain jars per cycle pillow stuffing	5	500 500	55.56 5	pkgs pkgs			
				-			
linked	reference table			Scenar year #	rio values recycled profit %		
item	variable	cost		1	100.00%		
incubator unit	1	\$100.00		3	100.00%		
weight 1 hay bale (lbs) weight 1 bag grain (lbs)	1600 50	\$100.00 \$16.00		4			
2 mil HDPE tubing, 3000 ft, 12" dia.	2800	\$113.00		6			
heat sealer	1	\$60.00		7			
jars/bag stuffing	100	\$9.00		9			
weeks per cycle	3	٢		10			
growing weeks per year est_overhead cost/10 cu ft	48	٢					
useable space/cycle	0	\$1.00					
Yield, lbs/10 cu ft/cycle	1.5	٢					
value/ (lb)	1	\$12.00					
				Timeline:	Begin Year #	1	Below
	Fun	ansion constic	calculator				
	Exp	ansion scenario	calculator				
item incubation space owned	cost per -\$100.00	multiplier 0	total \$ -				
incubation space expansion final	\$100.00	100	\$ 10.000.00	AKA Facilitie	s purchase cost		
grain jars 0.5 gal	\$1.00	500	\$ 500.00	or purchase cost p	per (10) cubic feet of		
sorghum grain, bag	\$16.00	10	\$ 40.00	used gi	row space		
wheat straw hay, bale overhead/ 10 cu ft/cycle	\$100.00 \$1.00	0.6	\$ 62.50 \$ 100.00				
2 mil HDPE tubing, 3000 ft, 12" dia.	\$113.00	1	\$ 113.00				
		total 1	¢ 11.035.50				
			\$ 11,055.50				
1.5	\$12.00	\$1,800.00	6.1	18.4	4.6		
cycles until profit	7		Total Crop Weight (lbs)				
profitable cycles per year	9		2,400				
crop sale profit value /year recycled profits @ (%)	\$ 16,200.00						
recycled profits @ (\$) allows for purchase of (x10	\$ 16,200.00						
cu ft uable grow space)	162						
begin the next year	262						
= #10 it logs	262						
				Timeline	Begin Year #	2	Below
	Cost/Profi	t			Year#	2	
number incubators:	262	"=x10 cu ft space"					
non-reusable equipment			_				
item	one incubator	space	amt. needed/cycle	units	bulk cost	actual cost/cycle	actual cost/year
CU FT USABLE SPACE length HDPE tube/cycle	10 10	2620 2620	2620 0.936	cu ft space rolls	- \$ 113.00	- \$ 105.74	- \$ 1,691.77
(lbs) dry hay per cycle (lbs) dry grain per cycle	10 5	2620	1.6	bales	\$ 200.00 \$ 432.00	\$ 163.75 \$ 419.20	\$ 2,620.00
overhead/10 cu ft usable space	\$ 1.00	\$ 262.00	\$ 262.00	-	\$ 262.00	\$ 262.00	\$ 4,192.00
				cost/cycle	\$ 1,007.00	\$ 950.69	\$ 15,210.97
reusable equipment grain jars per cycle	5	1310	145.56	pkas	\$ 1.314.00	\$ 145.56	
pillow stuffing	5	1310	13.1	pkgs	\$ 112.00	\$ 104.80	
				COSL	\$ 1,420.00	\$ 250.56	
cycles per year	weeks/cycle 3	weeks/yr 48	cycles/year 16.0		total pro	duct cost	\$ 15,210.97
cycles per year	weeks/cycle 3	weeks/yr 48	cycles/year 16.0		total pro	duct cost	\$ 15,210.97
cycles per year Yield, (lbs)/incubator	weeks/cycle 3	weeks/yr 48	cycles/year 16.0		total pro	duct cost	\$ 15,210.97
cycles per year Yield, (lbs)/incubator 1.5	weeks/cycle 3	weeks/yr 48	cycles/year 16.0		total pro	duct cost	\$ 15,210.97
cycles per year Yield, (lbs)/incubator 1.5	weeks/cycle 3	weeks/yr 48	cycles/year 16.0 profit/cycle w/	not profit /cycla	total pro gross production	duct cost	\$ 15,210.97
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	weeks/cycle 3 value \$/lb \$12.00	weeks/yr 48 crop value/cycle \$ 4.716.00	cycles/year 16.0 profit/cycle w/ bulk cost) \$ 3.709.00	net profit/cycle \$ 3.765.31	total pro gross production value \$ 75,456,00	duct cost total net profit \$ 60,245,03	\$ 15,210.97 profit percentage 396.06%
cycles per year Vield, (Ibs)/incubator 1.5 Vield, Ibs/incubator 1.5	weeks/cycle 3 value \$/lb \$12.00	weeks/yr 48 crop value/cycle \$ 4,716.00	cycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00	net profit/cycle \$ 3,765.31	total pro gross production value \$ 75,456.00	duct cost total net profit \$ 60,245.03	\$ 15,210.97 profit percentage 396.06%
Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year	cycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00	net profit/cycle \$ 3,765.31 cyclic materials	total pro gross production value \$ 75,456.00	total net profit \$ 60,245.03	\$ 15,210.97 profit percentage 396.06%
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (lbs)/incubator	rofit/cycle w/ bulk cost) \$ 3,709.00	net profit/cycle \$ 3,765.31 Cyclic materials cost per cu ft yearly materials	total pro gross production value \$ 75,456.00 \$ 0.36	duct cost total net profit \$ 60,245.03	\$ 15,210.97 profit percentage 396.06%
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (lbs)/incubator 6288.0	rofit/cycle w/ bulk cost) \$ 3,709.00	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft	total pro gross production value \$ 75,456.00 \$ 0.36 \$ 5.81	total net profit \$ 60,245.03	\$ 15,210.97 profit percentage 396.06%
cycles per year Vield, (lbs)/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5	weeks/cycle 3 value \$/Ib \$12.00 total yield/cycle (Ibs)/incubator 393.0	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (lbs)/incubator 6288.0	rofit/cycle w/ bulk cost) \$ 3,709.00	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft	total pro gross production value \$ 75,456.00 \$ 0.36 \$ 5.81	total net profit \$ 60,245.03	\$ 15,210.97 profit percentage 396.06%
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/yaar (lbs)/incubator 6288.0 crop value	cycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs)	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft cost per cu ft trop value per cu tt	gross production value \$ 75,456.00 \$ 0.36 \$ 5.81 net profit /cu tf/cycle	total net profit \$ 60,245.03 total crop value/cu ft	s 15,210.97 profit percentage 396.06% total net profit/cu
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (lbs)/ncubator 6288.0 crop value \$ 4,716.00	rcycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft t \$ 1.80	total pro           gross production           value           \$ 75,456.00           \$ 0.36           \$ 5.81           net profit /cu           \$ 1.44	total net profit \$ 60,245.03 total crop value/cu ft \$ 28.80	<ul> <li>\$ 15,210.97</li> <li>profit percentage</li> <li>396.06%</li> <li>total net profit/cu</li> <li>ft</li> <li>\$ 22.99</li> </ul>
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00 16.0	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (Ibs)/incubator 6288.0 crop value \$ 4,716.00	cycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft crop value per cu ft \$ 1.80	total pro           gross production value           \$         75,456.00           \$         0.36           \$         5.81           net profit /cu         \$           \$         1.44	total net profit \$ 60,245.03 total crop value/cu ft \$ 28.80	\$ 15,210.97 profit percentage 396.06% total net profit/cu \$ 22.99
cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5 Profitable Cycles per Year Net Profit per Year Recycled Profits @ 1%-b	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (Ibs)/incubator 6288.0 crop value \$ 4,716.00	rofit/cycle w/ buik cost) \$ 3,709.00 Totai Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft crop value per cu ft 1.80	total pro value \$ 75,456.00 \$ 0.36 \$ 5.81 net profit /cu \$ 1.44	total net profit \$ 60,245.03 total crop value/cu ft \$ 28.80	s 15,210.97 profit percentage 396.06% total net profit/cu ft 22.99
cycles per year     Vield, (lbs)/incubator         1.5     Vield, lbs/incubator         1.5     Vield, lbs/incubator         1.5     Vield, lbs/incubator         1.5     Vield, lbs/incubator         1.5     Profitable Cycles per Year     Net Profits @ (%)     Recycled Profits @ (%)	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00	weeks/yr           48           crop value/cycle           \$ 4,716.00           crop value           \$ 4,716.00	rcycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cut cost per cut ft \$ 1.80	total pro           gross production           \$         75,456.00           \$         0.36           \$         5.81           net profit /cu         ft/cycle           \$         1.44	total net profit \$ 60,245.03 total crop value/cu ft \$ 28.80	\$ 15,210.97
cycles per year     Vield, (lbs)/incubator     1.5     Vield, lbs/incubator     Allows for Purchase of (x10     cut 8 grows space)     cut 8 grows space)	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00 value \$/lb \$12.00 \$10.00 \$60,245.03 100.00% \$60,245.03 602	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/year (lbs)/incubator 6288.0 crop value \$ 4,716.00	rofit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft crop value per cu ft \$ 1.80	total pro value \$ 75,456.00 \$ 0.36 \$ 5.81 net profit /cu \$ 1.44	total net profit \$ 60,245.03 total crop value/cu ft 28.80	s 15,210.97
cycles per year Vield, (lbs)/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator 1.5 Vield, lbs/incubator Profitable Cycles per Year Net Profits @ (%) Recycled Profits @ (%) Allows for Purchase of (x10 cu ft grow space) Totalling (x 10 cu ft grow space) to Begin the Naxt	weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0 value \$/lb \$12.00 \$0,245.03 100.00% \$60,245.03 602 864	weeks/yr 48 crop value/cycle \$ 4,716.00 total yield/yaar (lbs)/incubator 6288.0 crop value \$ 4,716.00	rcycles/year 16.0 profit/cycle w/ bulk cost) \$ 3,709.00 Total Crop Weight (lbs) 6,288	net profit/cycle \$ 3,765.31 cyclic materials cost per cu ft yearly materials cost per cu ft crop value per cu ft \$ 1.80	total pro value \$ 75,456.00 \$ 0.36 \$ 5.81 net profit /cu \$ 1.44	total net profit \$ 60,245.03 total crop value/cu ft \$ 28.80	\$ 15,210.97

				Timeline:	Begin Year #	3	Below
	Cost/Profit	<b>-</b>			Vear#	3	
		L 			Tear w		
number incubators:	864	"=x10 cu ft space"					
non-reusable equipment							
item	one incubator	total incubation space	amt. needed/cycle	units	bulk cost	actual cost/cycle	actual cost/year
CU FT USABLE SPACE	10	8640	8640	cu ft space	- 452.00		-
length HDPE tube/cycle (lbs) dry hay per cycle	10	8640 8640	3.086	rolis bales	\$ 452.00 \$ 600.00	\$ 348.09 \$ 540.00	\$ 5,578.97 \$ 8,640.00
(lbs) dry grain per cycle	5	4320	86.4	bag	\$ 1,392.00	\$ 1,382.40	\$ 22,118.40
overhead/10 cu ft usable space	\$ 1.00	\$ 864.00	\$ 864.00	- cost/cycle	\$ 864.00 \$ 3,308.00	\$ 864.00 \$ 3,135.09	\$ 13,824.00 \$ 50,161.37
					Ψ	4 0,000	ψ
reusable equipment	5	1310	145.56	nkas	¢ 1,314.00	¢ 145.56	
pillow stuffing	5	4320	43.2	pkgs	\$ 352.00	\$ 345.60	
				cost	\$ 1,666.00	\$ 491.16	
	weeks/cycle	weeks/yr	cycles/year				
cycles per year	3	48	16.0		Total pro	duct cost	\$ 50,161.37
Yield, (lbs)/incubator							
1.5							
Yield, lbs/incubator	value \$/lb	crop value/cycle	profit/cycie w/ bulk cost)	net profit/cycle	gross production value	total net profit	profit percentage
1.5	\$12.00	\$ 15,552.00	\$ 12,244.00	\$ 12,416.91	\$ 248,832.00	\$ 198,670.63	396.06%
	total yield/cycle	total yield/year		cyclic materials	0.05		
Yield, lbs/incubator	(lbs)/incubator	(lbs)/incubator		cost per cu ft	\$ 0.36		
1.5	393.0	6288.0		cost per cu ft	\$ 5.81		
			Total Crop	crop value per cu	net profit /cu	crop value/cu ft	net profit/cu
Yield, lbs/incubator	value \$/lb	crop value	Weight (lbs)	ft 1.80	ft/cycle	/year	ft/year
1.5	\$12.00	\$ 15,552.00	20,750	\$ 1.00	\$ 1.77	\$ 20.00	\$ 22.55
Profitable Cycles per Vear	16.0						
Net Profit per Year	\$ 198,670.63						
Recycled Profits @ (%)	100.00%						
Recycled profits @ (>) Allows for Purchase of (x10	\$ 198,070.00						
cu ft grow space)	1986						
Totalling (x 10 cu ft grow space) to Regin the Next	2850						
Year	2000						
"= # 10-ft logs"/cycle	2850						
				Timeline:	Begin Year #	4	Below
	Cost/Profit			Timeline:	Begin Year #	4 4	Below
	Cost/Profit			Timeline:	Begin Year # Year#	44	Below
number incubators:	Cost/Profit	t "=x10 cu ft space"		Timeline:	Begin Year # Year#	4	Below
number incubators:	Cost/Profit	t "=x10 cu ft space"		Timeline:	Begin Year # Year#	4	Below
number incubators: non-reusable equipment	Cost/Profit	t "=x10 cu ft space" total incubation	amt.	Timeline:	Begin Year # Year#	4	Below
number incubators: non-reusable equipment item ru FT IIGABLE SPACE	Cost/Profit	t "=x10 cu ft space" total incubation space 28500	amt. needed/cycle 28500	Timeline: units	Begin Year # Year# bulk cost	4 4 actual cost/cycle	Below
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle	Cost/Profit 2850 one incubator	t "=x10 cu ft space" total incubation space 28500 28500	amt. needed/cycle 28500 10.179	Timeline: units cu ft space rolis	Begin Year # Year # bulk cost \$ 1,243.00	4 4 actual cost/cycle \$ 1,150.18	Below actual cost/year \$ 18,402.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry nam per cycle	Cost/Profit	t "=x10 cu ft space" total incubation space 28500 28500 28500 14250	amt. needed/cycle 28500 10.179 17.8 285	Timeline: units cuft space rolls bales bag	Begin Year #           Year #           bulk cost           -           -           -           -           -           -           -           -           -           -           -           -	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4 560.00	Below actual cost/year \$ 18,402.86 \$ 28,500.00 * 72 960.00
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00	*=x10 cu ft space" total incubation space 28500 28500 28500 14250 \$ 2,850.00	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,855.000	Timeline: units cu ft space rolls bales bag	Begin Year #           Year#           bulk cost           -           \$ 1,243.00           \$ 1,243.00           \$ 1,800.00           \$ 4,560.00           \$ 2,850.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry hay per cycle (lbs) dry agrain per cycle overhead/10 cu ft usable space	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00	t *=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00	amt. 28500 10.179 17.8 285 \$ 2,850.00	units cuft space rolls bales bag - cost/cycle	Begin Year # Year# bulk cost \$ 1,243.00 \$ 1,243.00 \$ 4,560.00 \$ 2,850.00 \$ 10,453.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 45,600.00 \$ 45,600.00 \$ 155,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment	Cost/Profit	t *=x10 cu ft space" total incubation space 28500 28500 28500 14250 \$ 2,850.00	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00	units cuft space rolls bales bag 	Begin Year #           Year#           \$ 1,243.00           \$ 1,243.00           \$ 4,560.00           \$ 2,850.00           \$ 10,453.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00	t "=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 1310	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 \$ 2,850.00	Units cu ft space rolls bales bag - cost/cycle	Begin Year # Year# bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 2,850.00 \$ 10,453.00 \$ 1,314.00 \$ 1,314.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 145.56	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00	*=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 14250 \$ 2,850.00 1310 14250	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5	Timeline: units cu ft space rolls bales bag - cost/cycle pkgs pkgs cost	Begin Year #           Year#           bulk cost           - <tr< td=""><td>4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56</td><td>Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86</td></tr<>	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE iength HDPE tube/cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing	Cost/Profit 2850 0ne incubator 10 10 5 \$ 1.00	*=x10 cu ft space* total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5	Units cu ft space rolls bales bag - cost/cycle pkgs pkgs cost	Begin Year #           Year#           bulk cost           - <tr< td=""><td>4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56</td><td>Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86</td></tr<>	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year	Cost/Profit 2850 0ne incubator 10 10 10 5 \$ 1.00 5 5 weeks/cycle	t *=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 145.56 142.5 cycles/year 16.0	Timeline: units cuft space rolis bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 10,453.00 \$ 10,453.00 \$ 1,314.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,2458.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 1,140.00	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86 € 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 5 weeks/cycle 3	t *=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0	units cuft space rolls bales bag 	Begin Year #           Year#           bulk cost           \$ 1,243.00           \$ 4,560.00           \$ 1,0,453.00           \$ 1,314.00           \$ 1,144.00           \$ 2,458.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 Juct cost	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Vield. /(bs)/incubator	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 weeks/cycle 3	t =x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0	Units cuft space rolls bales bag 	Begin Year # Year # \$ 1,243.00 \$ 1,800.00 \$ 2,850.00 \$ 10,453.00 \$ 1,314.00 \$ 1,314.00 \$ 2,458.00 Total pro	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 Juct cost	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 45,600.00 \$ 45,462.86 \$ 165,462.86 \$
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00 5 \$ weeks/cycle 3	*=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 145.56 142.5 <b>cycles/year</b> 16.0	Units cuft space rolis bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year# bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 2,850.00 \$ 10,453.00 \$ 1,144.00 \$ 2,458.00 Total pro	4 actual cost/cycle 5 1,150.18 5 1,781.25 5 4,560.00 \$ 2,850.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 Juct cost	Below actual cost/year s 18,402.86 28,500.00 s 72,960.00 s 165,462.86 s 165,462.86 s 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 weeks/cycle 3	*=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0	Units Cuft space rolls bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost 5 1,243.00 \$ 1,800.00 \$ 1,800.00 \$ 1,850.00 \$ 10,453.00 \$ 10,453.00 \$ 1,144.00 \$ 1,144.00 \$ 2,458.00 Total pro	4 4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 Juct cost	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE iength HDPE tube/cycle (lbs) dry pary per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Vield. lbs/jincubator	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 5 weeks/cycle 3 value \$/lb	t *=x10 cu ft space" total incubation space 28500 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/	Timeline: units cuft space rolis bales bag - cost/cycle pkgs pkgs cost	Begin Year # Year # bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 10,453.00 \$ 10,453.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,2458.00 Total pro	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 Juct cost	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86 \$ 165,462.86 \$
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry hay per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 \$ 1.00 value \$/lb 5 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	t *=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 * 2,850.00 * 48 * 51,300.00	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) € 40,847.00	Timeline: units cuft space rolls bales bag - cost/cycle pkgs cost cost - - - - - - - - - - - - -	Begin Year # Year # bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 10,453.00 \$ 1,314.00 \$ 1,314.00 \$ 2,458.00 Total pro gross production value \$ 2,0800.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655.337.14	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HOPE tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 \$ weeks/cycle 3 value \$/lb \$12.00	t *=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 14250 1310 14250 weeks/yr 48 crop value/cycle \$ 51,300.00	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 40,847.00	Timeline: units cuft space rolls bales bag bag cost/cycle pkgs pkgs cost cost cost 40,958.57	Begin Year #           Year#           bulk cost           \$ 1,243.00           \$ 1,243.00           \$ 4,560.00           \$ 1,314.00           \$ 1,314.00           \$ 1,314.00           \$ 2,458.00           Total pro           gross production           \$ 820,800.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655,337.14	Below           actual cost/year           \$ 18,402.86           \$ 28,500.00           \$ 72,960.00           \$ 165,462.86           \$ 165,462.86           \$ 165,462.86
number incubators: non-reusable equipment item Cu FT USABLE SPACE length HDF tube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00 5 5 weeks/cycle 3 value \$/lb \$12.00 total viald/cycle	t =x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48 crop value/cycle \$ 51,300.00	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 40,847.00	Timeline:     units     cuft space     rolis     baig     bag     cost/cycle     pkgs     pkgs     pkgs     cost      for the profit/cycle     \$     40,958.57      cuclic materials	Begin Year #           Year#           \$ 1,243.00           \$ 1,243.00           \$ 4,560.00           \$ 2,850.00           \$ 1,314.00           \$ 1,3144.00           \$ 2,458.00           Total pro           gross production           \$ 820,800.00	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655,337.14	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 45,600.00 \$ 165,462.86 \$ 165,462.86 profit percentage 396.06%
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDP Etube/cycle (lbs) dry rain per cycle (lbs) dry rain per cycle overhead/10 cu ft usable space reusable equipment grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator	Cost/Profit 2850 one incubator 10 10 5 \$ 1.00 5 weeks/cycle 3 value \$/lb \$12.00 total yield/cycle (lbs)/incubator	*=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48 crop value/cycle \$ 51,300.00 total yield/year (lbs)/incubator	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 40,847.00	Timeline: units cu ft space rolis baig cost/cycle pkgs pkgs cost	Begin Year #           Year #           bulk cost           \$ 1,243.00           \$ 1,243.00           \$ 1,243.00           \$ 1,250.00           \$ 1,314.00           \$ 1,314.00           \$ 1,314.00           \$ 2,458.00           Total pro           gross production           \$ 820,800.00           \$ 820,800.00	4 4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655,337.14	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 45,600.00 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE length HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle overhead/10 cu ft usable space reusable equipment grain Jars per cycle pillow stuffing Cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 333.0	*=x10 cu ft space" total incubation space 28500 28500 14250 \$ 2,850.00 1310 14250 weeks/yr 48 crop value/cycle \$ 51,300.00 total yield/year (lbs)/incubator 6288.0	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 40,847.00	Timeline: units cuft space rolis bales bag - cost/cycle pkgs pkgs cost co	Begin Year # Year # bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 10,453.00 \$ 10,453.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,2458.00 \$ 1,2458.00\$ 1,2458.00\$ 1,2458.00\$ 1,2458.00\$ 1,2458.00\$ 1,2458.00\$	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655,337.14	Below actual cost/year \$ 18,402.86 \$ 28,500.00 \$ 72,960.00 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86 \$ 165,462.86
number incubators: non-reusable equipment item CU FT USABLE SPACE iength HDPE tube/cycle (lbs) dry grain per cycle (lbs) dry grain per cycle grain jars per cycle pillow stuffing cycles per year Yield, (lbs)/incubator 1.5 Yield, lbs/incubator 1.5	Cost/Profit 2850 one incubator 10 10 10 5 \$ 1.00 5 \$ 1.00 5 value \$/lb \$12.00 total yield/cycle (lbs)/incubator 393.0	t *=x10 cu ft space" total incubation space 28500 28500 28500 14250 \$ 2,850.00 1310 14250 * crop value/cycle \$ 51,300.00 total yield/year (lbs)/incubator 6288.0	amt. needed/cycle 28500 10.179 17.8 285 \$ 2,850.00 145.56 142.5 cycles/year 16.0 profit/cycle w/ bulk cost) \$ 40,847.00	Timeline: units cuft space rolis bales bag - cost/cycle pkgs pkgs cost co	Begin Year # Year # bulk cost \$ 1,243.00 \$ 1,800.00 \$ 4,560.00 \$ 10,453.00 \$ 10,453.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,144.00 \$ 1,2458.00 \$ 1,2458.00\$ \$ 1,245	4 actual cost/cycle \$ 1,150.18 \$ 1,781.25 \$ 4,560.00 \$ 2,850.00 \$ 10,341.43 \$ 145.56 \$ 1,140.00 \$ 1,285.56 duct cost total net profit \$ 655,337.14	Below           actual cost/year           \$           18,402.86           \$           28,500.00           \$           72,960.00           \$           165,462.86           \$           165,462.86           \$           \$           165,462.86
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At the end of year four, we see projected profits of \$655,337.14 per year.

## **FUTURE RESEARCH**

- Rehydration tests<sup>x</sup>
  - o Rehydration of spent colonies in nutrient solution
  - Analysis: growth notes
- Alternative bulk substrate
  - Alfalfa hay, soybean meal
  - Analysis: nutrition profile analysis of mushroom tissue vs. nutrient content of substrate(s)
- Over-insertion of genes responsible for enzymes capable of breaking down Bakelite (polyphenolic resin) plastics
  - Analysis: possible?

## CONCLUSIONS

The proprietary research generated numbers that showed more profit and shorter crop times than originally expected. The researcher feels the information obtained is substantial and reliable enough to seek investment and move forward with implementing the business plan. Additionally, the researcher plans to use knowledge and skills obtained through this research and apply it to future research projects and likely profitable economic ventures.

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