

CROP NICHE TABLE

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TREES				Yield					Livestock				
Crop	Product	N2 fix	Pest Ctrl	Sun Yield	Part Yield	Shade Yield	Yield Season	Harvest Logistics	Ruminants	Hogs	Guinea	Geese	Other Poultry
Black Locust	timber	yes		100%	50%	n/a			protect young trees	protect young	eat bugs	weed	eat bugs
Chestnut	nuts			100%	n/a	n/a	fall	clean floor for nuts	protect young trees	protect young, clean drops	eat bugs	weed	eat bugs, clean drops
Pawpaw	fruit			100%	100%	25%	fall		protect young trees	protect young, clean drops	eat bugs	weed	eat bugs, clean drops
Pear	fruit			100%	n/a	n/a	fall		protect young trees	protect young, clean drops	eat bugs	weed	eat bugs, clean drops

SHRUBS				Yield					Livestock				
Crop	Product	N2 fix	Pest Ctrl	Sun Yield	Part Yield	Shade Yield	Yield Season	Harvest Logistics	Ruminants	Hogs	Guinea	Geese	Other Poultry
Bush Clover	fodder	yes		100%	50%				browse	browse	eat bugs	weed, graze	eat bugs, graze
Currant	fruit			100%	100%	50%	summer		no	no	eat bugs	weed	eat bugs, clean drops
Hazel	nuts, oil			100%	75%	n/a	summer	clean floor for nuts	protect young	protect young, clean drops	eat bugs	weed	eat bugs, clean drops
Raspberry	fruit			100%	50%	n/a	summer		no	no	eat bugs	weed	eat bugs, clean drops
Sea Buckthorn	fruit	yes		100%	n/a	n/a	summer		protect young	no	eat bugs	weed	eat bugs, clean drops

HERBS				Yield					Livestock				
Crop	Product	N2 fix	Pest Ctrl	Sun Yield	Part Yield	Shade Yield	Yield Season	Harvest Logistics	Ruminants	Hogs	Guinea	Geese	Other Poultry
Alfalfa	fodder, hay			100%	n/a	n/a	summer, fall		graze	graze	eat bugs	graze	graze
Asparagus	shoots			100%	n/a	n/a	spring		no	no	eat bugs	weed	no or brief bugs
Ginseng	medicinal			n/a	50%	100%	fall		no	no	eat bugs	weed	no or brief bugs
Grass-Legume Pasture	fodder, hay			100%	50%	n/a	spring to fall		graze	graze	eat bugs	graze	graze
Perennial Cut Flowers	cut flowers		yes	100%	50%	n/a	spring to fall		no	no	eat bugs	weed	no or brief bugs
Shiitake	mushrooms			n/a	100%	100%	summer, fall		no	no	eat bugs	weed	eat bugs
Strawberries	fruit			100%	n/a	n/a	spring		no	no	eat bugs	weed	eat bugs, clean drops
Tea Herbs	dry tea		yes	100%	75%	n/a	summer, fall		no	no	eat bugs	weed	no or brief bugs
Winter Squash	squash			100%	n/a	n/a	fall		No	No	eat bugs	weed	no or brief bugs

LIVESTOCK NICHE TABLE

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species	products	farm functions						hazards		compatible understory types		
		mow/ graze	clear brush	bugs	till	weed grass only	clean drops	protect young trees	scratch or dig	pasture	annuals	perennial crops
cattle	beef, dairy	yes						yes		yes	no	no
chickens	meat, eggs	yes		yes	yes		yes		yes	yes	till	no
ducks	meat, eggs	yes		yes						yes	some brief	some brief
emu	meat, eggs	yes					yes	yes		yes	no	no
geese	meat	yes				yes				yes	yes	yes
goats	meat, dairy	yes	yes					yes!, to 10 years		yes	no	no
guinea hens	meat			yes						yes	yes	yes
hogs	meat	yes	yes		yes		yes	yes	yes	yes	till	no
muscovy	meat	yes		yes						yes	some brief	some brief
sheep	lamb, dairy, wool	yes						yes		yes	no	no
turkeys	meat	yes		yes			yes		yes	yes	no	no

CROP ENTERPRISE BUDGETS

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CROPS	Alfalfa	Asparagus	Black Locust	Bush Clover	Chestnut	Currant	Ginseng	G-L Pasture	Hazel
Establishment Y 1 only	12 lbs seed	11,000 plants	300 seedling	4000 plants	200 seedling	2000 plants	seeds	seeds	150 plants
Tillage	\$100.00	\$100.00	n/a	n/a	n/a	n/a	\$100.00	\$100.00	n/a
with Pigs or Chickens	subtract \$100	subtract \$100	n/a	n/a	n/a	n/a	subtract \$100	subtract \$100	n/a
Plants	\$40.00	\$1,500.00	\$600.00	\$400.00	\$1,000.00	\$2,000.00	\$3,000.00	\$25.00	\$750.00
Fertility	\$50.00	\$150.00	\$0.00	\$0.00	\$200.00	\$250.00	\$200.00	\$50.00	\$250.00
Irrigation	\$0.00	\$0.00		\$0.00	\$2,000.00	\$1,200.00	\$0.00	\$0.00	\$1,200.00
Establishment Labor	\$150.00	\$2,000.00	\$1,250.00	\$1,000.00	\$1,250.00	\$1,000.00	\$750.00	\$100.00	\$1,000.00
Fertilizer									
Fertilizer/compost	\$25.00	\$50.00	\$0.00	\$0.00	\$200.00	\$100.00	\$150.00	\$25.00	\$100.00
Fertilizer Labor	\$50.00	\$50.00	\$0.00	\$0.00	\$50.00	\$150.00	\$50.00	\$50.00	\$150.00
with 1/3 N-fixers	n/a	subtract \$25	\$0.00	n/a	subtract \$75	subtract \$75	subtract \$50	n/a	subtract \$75
with N-fixers in shade	n/a	subtract \$10	0	n/a	subtract \$35	subtract \$35	subtract \$25	n/a	subtract \$35
with livestock rotation	subtract \$25	n/a	\$0.00	\$0.00	subtract \$50	subtract \$50	n/a	subtract \$50	subtract \$50
Weed Management									
Weeding labor	n/a	\$1,000.00	\$50.00	\$400.00	\$50.00	\$400.00	\$300.00	n/a	\$400.00
with Geese	n/a	subtract \$500	n/a	subtract \$250	n/a	subtract \$250	subtract \$50	n/a	n/a
Mowing									
Mowing Labor	\$50.00	n/a	\$200.00	n/a	\$200.00	n/a	n/a	\$50.00	\$100.00
with Grazers	subtract \$50	n/a	\$0.00	n/a	\$0.00	n/a	n/a	subtract \$50	subtract \$80
Pest Control									
Pest Control Materials	\$0.00	\$150.00	\$0.00	n/a	\$75.00	\$150.00	\$450.00	\$0.00	\$75.00
Pest Control Labor	\$0.00	\$50.00	\$0.00	n/a	\$75.00	\$50.00	\$100.00	\$0.00	\$50.00
with Bug Eaters	\$0.00	subtract \$25	\$0.00	\$0.00	subtract \$25	subtract \$25	subtract \$50	\$0.00	subtract \$25
with Drop Eaters	\$0.00	n/a	\$0.00	\$0.00	subtract \$25	subtract \$25	n/a	\$0.00	subtract \$25
Management									
Pruning Labor	\$0.00	n/a	\$0.00	\$0.00	\$50.00	\$150.00	n/a	\$0.00	\$200.00
Other (thinning, pollinate)	\$0.00	\$50.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a	\$0.00	\$0.00
Harvest									
Harvest Labor: % of wholesale price	0%	35%	0%	0%	20%	25%	8%	0%	20%

CROP ENTERPRISE BUDGETS

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CROP	Pawpaw	Pear	P. Cut Flrs	Raspberry	Seaberry	Shiitake	Strawberries	Tea Herbs	W. Squash
Establishment Y 1 only	200 grafted	390 grafted	seeds	1800 plants	1400 plants	500 logs/year	12000 plants	seeds	seeds
Tillage	n/a	n/a	\$100.00	\$100.00	n/a	n/a	\$100.00	\$100.00	\$100.00
with Pigs or Chickens	n/a	n/a	subtract \$100	subtract \$100	n/a	n/a	subtract \$100	subtract \$100	subtract \$100
Plants	\$2,000.00	\$2,750.00	\$1,320.00	\$1,800.00	\$4,200.00	\$2,000.00	\$1,200.00	\$1,000.00	\$30.00
Fertility	\$200.00	\$200.00	\$150.00	\$250.00	\$100.00	n/a	\$250.00	\$150.00	\$150.00
Irrigation	\$2,000.00	\$2,000.00	\$1,000.00	\$1,200.00	\$1,200.00	n/a	\$1,000.00	\$0.00	\$0.00
Establishment Labor	\$1,250.00	\$1,250.00	\$300.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$300.00	\$150.00
Fertilizer									
Fertilizer/compost	\$200.00	\$200.00	\$150.00	\$200.00	\$25.00	n/a	\$150.00	\$150.00	\$150.00
Fertilizer Labor	\$50.00	\$50.00	\$50.00	\$150.00	\$20.00	n/a	\$50.00	\$50.00	\$50.00
with 1/3 N-fixers	subtract \$75	subtract \$75	subtract \$50	subtract \$75	n/a	n/a	subtract \$50	subtract \$50	subtract \$50
with N-fixers in shade	subtract \$35	subtract \$35	subtract \$25	subtract \$35	n/a	n/a	n/a	subtract \$25	n/a
with livestock rotation	subtract \$50	subtract \$50	n/a	subtract \$50	n/a	n/a	n/a	n/a	subtract \$35
Weed Management									
Weeding labor	\$50.00	\$50.00	\$1,000.00	\$1,000.00	\$400.00	n/a	\$1,500.00	\$500.00	\$500.00
with Geese	n/a	n/a	subtract \$500	subtract \$250	n/a	n/a	subtract \$750	subtract \$300	subtract \$300
Mowing									
Mowing Labor	\$200.00	\$200.00	n/a	n/a	\$100.00	n/a	n/a	n/a	n/a
with Grazers	\$0.00	\$0.00	n/a	n/a	subtract \$80	n/a	n/a	n/a	n/a
Pest Control									
Pest Control Materials	\$75.00	\$75.00	\$150.00	\$400.00	\$30.00	n/a	\$300.00	\$75.00	\$300.00
Pest Control Labor	\$75.00	\$300.00	\$50.00	\$200.00	\$50.00	n/a	\$100.00	\$25.00	\$100.00
with Bug Eaters	subtract \$25	subtract \$75	subtract \$50	subtract \$25	subtract \$25	n/a	subtract \$100	subtract \$50	subtract \$200
with Drop Eaters	subtract \$25	subtract \$75	n/a	subtract \$25	subtract \$25	n/a	n/a	n/a	n/a
Management									
Pruning Labor	\$50.00	\$1,500.00	\$0.00	\$600.00	\$1,000.00	n/a	\$500.00	\$0.00	\$0.00
Other (thinning, pollinate)	\$500.00	\$200.00	\$0.00	\$0.00	\$0.00	n/a	\$0.00	\$0.00	\$0.00
Harvest									
Harvest Labor: % of wholesale price	15%	15%	20%	25%	15%	30%	45%	15%	20%

LIVESTOCK STOCKING RATES & BUDGET TABLE

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STOCKING RATES @ 1 animal unit per acre

For every acre of pasture or fodder:

1 cow or
4 pigs
or 5 sheep or goats
or 250 poultry

All animals are assumed to be stockers (bought in spring and sold in fall).

All animals are rotationally grazed.

Remember to discount fodder and pasture productivity in shade as per crop niche table.

All numbers are per acre.

	cattle (1)	goats (5)	sheep (5)	hogs (4)	poultry (250)
brooder setup	n/a	n/a	n/a	n/a	\$200
animals	\$250	\$375	\$375	\$200	\$300
fencing	\$250	\$250	\$250	\$250	\$250
water system	\$250	\$250	\$250	\$250	\$250
grain	n/a	n/a	n/a	\$2400	\$2500
veterinary	\$25	\$75	\$75	\$60	\$50
shelter	\$50	\$50	\$25	\$50	\$250
salt	\$10	\$10	\$10	\$0	\$0

CROP PRICES & VOLUME BY MARKET

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CROP	PRODUCT	INFRASTRUCTURE	Direct Price	Wholesale Price	VOLUME in pounds by Market			
					Farm Stand	Farmers Mkt	Web Direct	Wholesale
asparagus	fresh	cooler	\$3	\$1	2000	2000	0	no limit
chestnut	nuts	cooler	\$5	\$1	1000	200	0	no limit
	flour	drier, hammermill	\$15	\$4	20	20	500	no limit
currant	fresh	cooler	\$5	n/a	200	200	n/a	n/a
	smoothie	freezer, commercial kitchen	\$5	n/a	500	n/a	n/a	n/a
	leather	drier, commercial kitchen	\$0.50	\$0.25	1000	1000	5000	no limit
ginseng	dry	drier, commercial kitchen	\$20	\$8	20	20	500	no limit
hazel	nuts	barn	\$5	\$1	200	200	0	no limit
	oil	oil press, bottler, commercial kitchen	\$35	\$10	20	20	1000	no limit
pawpaw	fresh	cooler	\$5	n/a	200	200	n/a	n/a
	smoothie	freezer, commercial kitchen	\$5	n/a	500	n/a	n/a	n/a
pear	fresh	cooler	\$3	\$0.50	2000	2000	n/a	no limit
	smoothie	freezer, commercial kitchen	\$3	n/a	2000	n/a	n/a	n/a
	leather	drier, commercial kitchen	\$0.50	\$0.10	1000	1000	5000	no limit
peren. cut flowers	fresh	cooler	\$5	\$1	500	500	500	n/a
	dry	drier	\$10	\$2	2000	2000	10000	no limit
raspberry	fresh	cooler	\$3	\$0.50	2000	2000	n/a	no limit
	smoothie	freezer, commercial kitchen	\$5	n/a	500	n/a	n/a	n/a
	leather	drier, commercial kitchen	\$0.50	\$0.10	1000	1000	5000	no limit
seaberry	fresh	cooler	\$5	n/a	200	200	n/a	n/a
	smoothie	freezer, commercial kitchen	\$5	n/a	500	n/a	n/a	n/a
	leather	drier, commercial kitchen	\$0.50	\$0.10	1000	1000	5000	no limit
shiitake	fresh	cooler	\$5	n/a	250	250	n/a	n/a
	dry	drier, commercial kitchen	\$0.50	\$0.10	1000	1000	10000	no limit
strawberry	fresh	cooler	\$3	\$0.50	2000	2000	n/a	no limit
	smoothie	freezer, commercial kitchen	\$5	n/a	500	n/a	n/a	n/a
	leather	drier, commercial kitchen	\$0.50	\$0.10	1000	1000	5000	no limit
tea herbs	dry	drier, commercial kitchen	\$5	\$1	25	25	200	no limit
winter squash	fresh	barn	\$0.50	\$0.20	2000	2000	n/a	no limit

LIVESTOCK PRICES & VOLUME BY MARKET

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At 1 animal unit per acre, assume 500lbs meat.

Farmers' market requires freezer truck

Assuming all wholesale sales are of live animals

LIVESTOCK	PRODUCT	Equipment needed	Slaughter cost per animal unit	Direct Market Price	Volume in Pounds by Market		
					Farm Stand	Farmers Mkt	Wholesale (\$/animal unit)
cattle	beef 1/4	livestock trailer, freezer	\$335	\$5	5	5	n/a
	beef cuts	livestock trailer, freezer	\$550	\$7.50	300	300	n/a
	live cattle	livestock trailer	n/a	n/a	n/a	n/a	\$750
goats	goat cuts	livestock trailer, freezer	\$35	\$5	40	300	n/a
	live goat	livestock trailer	n/a	n/a	n/a	n/a	\$500
sheep	lamb 1/4	livestock trailer, freezer	\$35	\$5	200	8	n/a
	lamb cuts	livestock trailer, freezer	\$135	\$7.50	150	150	n/a
	live lamb	livestock trailer	n/a	n/a	n/a	n/a	\$500
pigs	sausage	livestock trailer, freezer	\$250	\$7.50	150	150	n/a
	pork cuts	livestock trailer, freezer	\$250	\$7.50	150	150	n/a
	live hog	livestock trailer	n/a	n/a	n/a	n/a	\$600
chicken	broilers	livestock trailer, freezer	\$650	\$15	100	100	\$1250
guinea	broilers	livestock trailer, freezer	\$650	\$25	15	15	n/a
turkey	roaster	livestock trailer, freezer	\$650	\$45	100	100	\$3000
geese	roaster	livestock trailer, freezer	\$650	\$45	20	20	\$2500
duck	roaster	livestock trailer, freezer	\$650	\$25	30	30	\$2500

MARKETING & PROCESSING EQUIPMENT COSTS

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PROCESSING EQUIPMENT			
	startup	annual	annual labor
drier	\$5000	\$500	10% retail
bottler	\$2000	\$1000	10% retail
commercial kitchen	\$20000	\$2000	10% retail
cooler	\$2000	\$1000	n/a
flour mill	\$3000	\$250	10% retail
freezer	\$2000	\$2000	n/a
livestock trailer	\$2500	\$0	10% retail
oil press	\$5000	\$500	10% retail

MARKETING EQUIPMENT			
	startup	annual	annual labor
direct market website	\$5000	\$2000	20% retail
farm stand (also need commercial kitchen)	\$2000	\$2000	\$9,000
farmers market fees (each)	\$1000	\$1000	n/a
farmers market rig	\$1000	\$200	\$3,000 each market
freezer truck	\$10000	\$3000	n/a
van	\$10000	\$1000	n/a