

# Where Do I Want To Be?

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- **Business Options Available to Improve Profitability**
- **Goals**
- **Enterprise Budget**
- **Production Efficiency**
- **Marketing Opportunities**
- **Transitioning Out of the Business**



# Business Options Available to Improve Profitability

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## Options to Improve Profitability

When faced with financial stress due to low prices, agricultural producers and fishermen have several options to improve profitability. There are four general options available to increase profits. They are:

- Improve the profit margin
- Expand the business
- Create innovative niches
- Exit and transition to a new business or job

The first two options are described by one of the most basic equations in economics:

$$\text{Profit} = (\text{Price} - \text{Cost}) \times \text{Volume}$$

Profits can be improved by increasing the margin between the market price received for a product and the cost to produce the product or by increasing the amount of the product produced.

## Improving the Profit Margin

There are two components to increasing the profit margin:

- Reducing the cost of production
- Increasing the market price received

Economic forces are squeezing profit margins, but successful managers continue to pry the profit margin apart with a critical eye toward cost control practices and improved marketing.

Controlling the cost of production is always an essential management function of successful businesses. Data shows that there is rarely one area where significant cost reductions can be attained, but rather the more profitable businesses manage many costs two to five percent more efficiently than their competitors.

With tight profit margins, marketing actions that improve the sales price even a few cents may increase profits by significant percentage.

## **Expanding the Business**

Expanding the business is an option that many producers have pursued. As profit margins have tightened, expanding the size of the business has been the most feasible option for many producers.

Additional sales volume may be necessary to cover the overhead costs of the business and to allow the families involved to meet their financial needs. But when considering an expansion, care should be taken when doing financial planning to verify that the expansion will improve your financial situation. If the profit margin is in fact negative, or the added volume will cause overhead costs to increase, an expansion may just put your business in a deeper financial hole.

## **Creative and Innovative Strategies**

Over time agricultural producers have developed many creative and innovative strategies to help increase profitability. These range from adding value to their products through cooperatives or on-farm processing, direct marketing, niche products and markets, marketing recreational and agri-tourism opportunities, and contracts with businesses and municipalities.

Today's producers need to determine which strategy they will pursue - a commodity production strategy or a creative alternative strategy. The commodity strategy generally involves expanding to an adequate size and focusing on being low cost producer. The creative alternative strategy generally means focusing on markets, customers, and innovative niches. Some high-capacity producers are able to pursue both of these strategies.

## **Transitioning to a New Career**

Exiting the business is always an option, although not one that many people want to consider. Commodities that have been certified as eligible for Trade Adjustment Assistance (TAA) are facing financial challenges. Some producers may elect or need to exit the business. Producers should evaluate the skills and resources available or needed to transition to a different business or career. For some finding off-farm employment or downsizing by selling some assets may also be options.

TAA provides retraining and educational resources to help producers who are transitioning to a different career. The Department of Labor provides TAA services through which eligible producers and fishermen may receive reemployment and educational assistance. Reemployment services include employment counseling, case assessment, job development, and self-directed job search services. Education assistance (Trade Readjustment Allowances) pay for up to 104 weeks of full-time education including classroom training, on-the-job training, and employer-based training.

Developed by Kevin Klair, Extension Economist, Farm Management, University of Minnesota.



# Goals

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Most of us would not leave home on a trip to an unfamiliar destination without a road map. We would want to know where food, gas, and lodging were available. Family members would discuss the best route. An arrival time would be estimated to inform family and friends. What about an agricultural business or fishery that is considering a new business model? Before launching into a new business plan, a well-developed “road map” is needed. A successful “road map” starts with discussion of where you want to go—personal and business goals. Steps for generating goals to guide your business decision-making follow.

## **What Are Goals?**

A goal is a statement of what an individual or family wants to achieve. Through goals, each person, family, or business unit identifies its aspirations for the future. Goals change with circumstances and time, and they must be reevaluated and updated periodically.

## **How To Use Goal Setting**

Goals provide focus and direction for management. Attaining high priority goals takes precedence in management decisions. They serve as reference points to monitor how well a business is doing and as a motivation if deadlines are specified. Goals help aid decision making in the face of uncertainty. Finally, achieving goals can serve as a rallying point for the family or business management team.

## **Steps in Goal Setting**

Goal setting requires creative thinking. Goals can be tangible and intangible, short-term and long-term, monetary and non-monetary. Goals are personal and unique to the family since they reflect values and beliefs, the resources available, and the opportunities and limitations faced. Because achieving goals often requires the cooperation of family, the goal setting process should involve discussion and compromise among family members. Seven steps for setting goals follow.

- Assess where the operation was in the past.
- Assess family and farm resources (including self) and planning restrictions.
- Develop a general management plan.
- Identify and establish specific goals or objectives.
- Prioritize goals.
- Develop plans for action and implementing goals.
- Measure progress and reassess goals.

## **Developing SMART Goals**

Other tips for goal setting are to make them SMART: Specific, Measurable, Action-oriented, Reasonable, and established in a Time frame. Write goals down to make them visible and increase commitment. Goals should be measurable, for instance, to increase income by \$8,000 per year. Goals should be challenging, but achievable. To be most effective, set family and business goals jointly, that is, set goals with family members rather than for them. Using realistic deadlines specify when the goal is to be attained.

## **Prioritizing Goals**

Goal priorities can provide clear guidelines for management decisions and make possible a level of consistency that otherwise is difficult to maintain. To help establish goal priorities, ask these questions:

- Which goals are most important for family well-being? Farm well-being?
- Which short-term goals, if attained, would help achieve long-term goals?
- Which short-term goals conflict with, or impede, long-term goals?
- Which short-term goals do not support any long-term goals?
- Which goals are so important that they should be attained even if it prevents reaching other goals?

High priority goals should not receive all the attention and resources while other goals are ignored. Priorities should not be completely either/or decisions, and priority decisions need not be permanent. In prioritizing goals, weigh the importance of each task for long-term and short-term goals. Consider personal life goals as well as business aims. Group similar activities wherever possible and identify links between goals.

## **Implementing Goals**

To effectively set and implement goals, the business manager must invest time and energy in mapping out goals. A thorough job of planning, with a commitment to the goal-setting process, will help ensure positive results. Make the goal known to others. Relate individual goals to family or team goals. Try to anticipate problems and plan strategies for overcoming them. Do not ignore potential conflicts or restrictions that might prevent reaching goals. Identifying possible problems in the planning stage will



allow time to resolve conflicts or channel efforts to feasible objectives. Beware of the following potential pitfalls:

- Making goals too lofty
- Trying to do too many things at once
- Overemphasizing quantitative aspects
- Vulnerability to unexpected events
- Failing to use all information or include all decision makers
- Ignoring good plans.

## **Summary**

Goal setting, although important for all individuals and families, is especially important for family farms and small businesses because of family and business interrelationships. The development of individual goals, discussion and negotiation of family goals, and business and family priority setting gives structure to the management process. Setting goals as a family at least annually (or whenever circumstances change significantly) should become part of the business management routine. By helping individuals and families work smarter, goal-directed management can improve business efficiency. Achievement of goals should result in a feeling of accomplishment and pride. Use the following worksheet to begin specifying goals for family and business.

Reprinted from Goal Setting for Farm and Ranch Families, Damona Doye, Oklahoma Cooperative Extension Service, Oklahoma State University.



# Enterprise Budget

As discussed earlier, an enterprise budget is a useful tool to quickly evaluate current costs and returns and/or to quickly evaluate the cost effectiveness of changes in production practices. Provided below is a sample budget based on a five-year average yield of 5,000 pounds per acre and estimates of the current average F.O.B. price in South Florida.

**Table 1. Estimated costs and returns for lychee in Miami-Dade County, FL, 2004**

Category	(\$)/Acre/Year	(\$)/Pound
<b>Marketable Yield (5,000 pounds per acre)</b>		
<b>F.O.B Price at South Florida</b>		<b>1.75</b>
<b>Total Revenue</b>	<b>8,750.00</b>	
<b>Operating Costs</b>	<b>1,041.00</b>	
Fertilizer	429.00	
Fungicide	260.00	
Herbicide	85.00	
Insecticide	117.00	
Interest on Operating Capital	150.00	
<b>Miscellaneous</b>	<b>689.00</b>	
Tree Removal and Site Preparation	8.00	
Tree Replacement	14.00	
Top, Head and Prune	219.00	
Set Trees	4.00	
Irrigation	135.00	
Mow Middles	80.00	
Grove Work and Hand Labor	229.00	
<b>Fixed costs</b>	<b>1,280.00</b>	
Land Rent	450.00	
Supervision	176.00	
Overhead	304.00	
Equipment Repairs, Depreciation	350.00	
<b>Total Pre-Harvest Costs</b>	<b>3,010.00</b>	<b>0.60</b>
<b>Harvest and Marketing Costs</b>	<b>3,375.00</b>	
Pick, Haul, and Pack (\$0.50/lb.)	2,500.00	0.50
Sales Charge (@ 10% of \$1.75 F.O.B.)	875.00	0.175
<b>Total Costs</b>	<b>6,385.00</b>	<b>1.28</b>
<b>Net Returns (Total Revenue – Total Costs)</b>	<b>2,365.00</b>	<b>0.47</b>

It should be pointed out that yields and costs for individual operations can vary widely. For instance, yields have been known to range from a low of 600 pound per acre in a very bad year to a high of about 10,000 pounds per acre in an extremely good year.

Table 1 reveals an average per acre total cost of production and marketing of \$6,385 and gross revenue of \$8,750, giving a net return of \$2,365. Total pre-harvest costs are estimated at \$3010 per acre (about \$0.60 per pound) while total harvest and marketing costs amount to \$3,375 or roughly \$0.68 per pound. From Table 1, it is apparent that the greatest costs are **harvesting and marketing**, which account for as much as 52 percent of the total cost of production. Reducing these costs would contribute to improving the returns.

In addition to reducing costs of production to improve profitability, attempts can be made to influence market price through improving fruit quality. Returns can be vastly improved by increasing yields per acre (discussed in later section). Table 2 below shows the estimated net returns for various price and yield combinations in South Florida. The yields chosen reflect expected average yields in 'low,' 'medium' and 'high' years, while the prices reflect the range paid in recent years. Table 2 reveals that with a yield of 3,000 pounds or less, the grower would operate at a loss if the F.O.B. price were \$1.50. However, if the F.O.B. price were to increase from \$1.50 to \$2, net returns would improve considerably even if yields remained at this level. In situations where yields are high (7,000 pounds per acre) and price is close to the \$2 per pound level, growers could achieve net returns in excess of \$6,000. As Table 2 indicates, returns to lychee can vary considerably depending on the type of year and the price received. It also shows quite clearly that a relatively small increase (decrease) in the market price tends to have much more impact on net return than would a similar increase (decrease) in yield. For example, increasing the price from \$1.50 to \$2.00 at the 5,000 pounds per acre level (a 33.3 percent increase) causes the net profit to increase by \$2,250, whereas increasing yields from 5,000 to 7,000 pounds per acre (a 40 percent increase) results in the net profit increasing by \$1,700 (from \$1,240 to \$2,940). Notwithstanding, realizing such improvements through cost reductions would be extremely difficult.

**Table 2. Lychees: Estimated Net Returns for Various Price and Yield Combinations, South Florida, 2004.**

	-----Price (dollars/lb.) F.O.B. Homestead-----		
	\$1.50	\$1.75	\$2.00
Yield (lbs./acre)	Returns/acre (dollars)		
3,000	- \$460.00	\$215.00	\$890.00
5,000	1,240.00	2,365.00	3,490.00
7,000	2,940.00	4,515.00	6,090.00

# Production Efficiency

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In order to improve your production efficiency, reducing or controlling costs is only part of the process. You will need to identify and invest in the inputs and production practices that give you the best returns.

## Pests and Disease Management

Many insects and other pests and diseases can affect the lychee tree, leaves, flowers and fruit. Most of these pests and diseases can cause significant production loss if not controlled. It has been estimated that up to 50 percent of the crop can be lost. A few of the more important pests and diseases are discussed below.

### **Insect pests of lychee trunk & branches can cause severe economic losses**

- **Bark Scales: *Andaspis punicae*,  
*Pseudaulacaspis sp.* and *Thysanofiorinia  
nephelii***
- **Bark Miner – *Marmara sp.***
- **Longhorn beetle: *Aristobia***
- **Longhorn beetle: Other Species**
- **Ambrosia beetles: *Hypothenemus***

## Lychee bark scales:

### Armored scales

Very small, circular, oval or mussel-shaped with a thin, hard waxy cover (the armor).



Depending on the stage of development, the cover may be separated from the body.

### Armored scales

- Produce no honeydew.
- Feeding can blemish fruit, cause leaf drop.



- Inject toxins into plant tissues and high populations can cause the death of stems, limbs and whole trees.

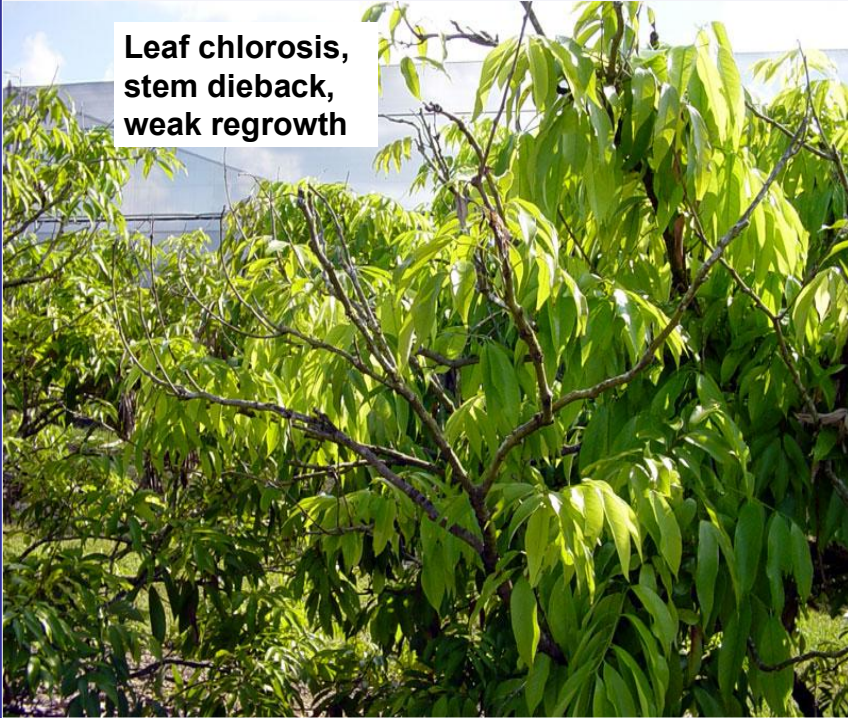
## Feeding effects of armored scales

- Feeds on plant sap.
- Injects toxic saliva when feeding.
- Chlorosis (yellowing) of leaf tissue.
- Discoloration, distortion of woody tissues.
- Disturbs transpiration and photosynthesis.
- Reduces tree vigor, deforms plant parts, produces galls or pits; may cause dieback.
- Alters host physiology and biochemistry.
- Increases susceptibility to diseases.





**Leaf chlorosis,  
stem dieback,  
weak regrowth**



**Leaf chlorosis (iron and  
nitrogen deficiency), stem dieback**







**Armored scale feeding through the bark on plant stems**



**Armored scale stem bark symptoms**

## How to assess a scale infestation?

- Use a 10x (or better) hand lens and check for presence or absence of scales on 5 randomly selected branches per tree; 5 trees per acre.
- Assess parasitism, that is, see if there are emergence holes left by parasites.
- If you have 10 or more live scales per branch and there is no evidence of parasitism....then



## Action levels for scale management

- If more than 10 scales per branch, [if available] release parasitoids.
- If you have crawler emergence: application of a pest control agent to the bark may be considered.

## Currently registered pesticides for scale control

### Registered for lychee

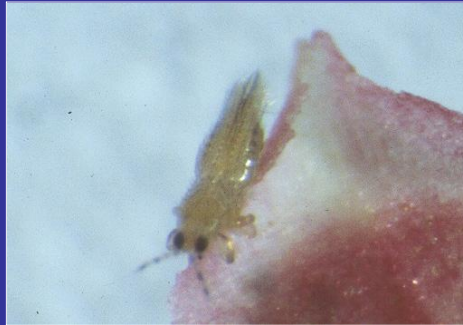
- KNACK (up to 16 oz/acre)
- KNACK plus oil
- APPLAUD 70WP (up to 36 oz/acre) plus oil

## Lychee shipping

- Scale and/or ant infested fruit is of poor quality and is NOT acceptable for shipment, especially to California! Any insect found will cause at the least a delay in the shipment, more likely a rejection for entry.
- The industry, packinghouses, and growers cannot afford to lose California as a destination for Florida fruit.
- Monitor your trees for scales, sooty mold (an indicator of a scale infestation), and ants during the fall, winter, and early spring and control the infestation of scale prior to the fruit set and fruit development period. Treating the fruit after the harvest to kill scale and ants is very difficult and methyl bromide fumigation has not been routinely approved for disinfestations of lychee. Packinghouses should monitor the quality of what they are accepting and packing and reject any scale/ant infested fruit.

## Flower thrips

- Flower thrips – small to very small, elongated, greenish-yellow to clear-yellow to orange-yellow color, spring/hop very quickly when disturbed. Feed on flowers and fruitlets. In high numbers may cause young fruit to drop. Monitor panicles during bloom by hitting panicles onto a paper to look for insects.



## Mirids

- Mirids (Dagbertus sp.) may be of various colors with or without spots or marking. Have a triangular plate on their backs. Feed on opening buds, flowers, and small fruit causing them to drop. Monitor panicles during bloom by hitting panicles onto a paper to look for insects.



## Currently registered pesticides for thrip and mirid control

Monitor grove from flowering through fruit set and early fruit development. If thrips and/or mirids are in high numbers, control may be warranted. More research on these pests and their effect on lychee needs to be accomplished to establish if they are important.

- SpinTor 2SC (4-10 oz/acre)
- Pyrellin E.C. (1-2 pts/acre)

## Fruit disease on lychee

- Anthracnose caused by *Colletotrichum gloeosporioides* is the major fruit disease on lychee in Florida. In particular, 'Mauritius' is susceptible to the disease. We recommend if this disease has been a problem in your grove, you begin fungicide applications at panicle emergence at least through fruit set. Continued fungicide applications up to harvest may be warranted.





## Fungicides registered for lychee in Florida

- **ABOUND FLOWABLE (6.1-15.4 lbs/acre at a 10-14 day interval, rotate with another fungicide after two applications)**
- **SWITCH 62.5WG (11-14 oz/acre at a 7-10 day interval, rotate with another fungicide)**
- \* **You must have the supplemental labels for these products in your possession at the time of application. READ THE LABELS FOR MORE SPECIFIC USE RECOMMENDATIONS.**

## Additional information

- **Pesticide labels may be found at the CDMS web site at - <http://www.cdms.net/manuf/manuf.asp>**
- **Upcoming Extension activities and updates at:**
  - <http://crane.ifas.ufl.edu>
  - <http://miami-dade.ifas.ufl.edu>
  - <http://calendar.ifas.ufl.edu/calendar/index.htm>
- **Tropical Research and Education Center at <http://trec.ifas.ufl.edu>**

## **Weed Management**

### **Weed Pests**

Weeds can reduce fruit yields by competing primarily for water and nutrients. Although individual weed species may vary regionally, predominant weed species in groves are grasses, sedges, and pigweeds. However, species composition is less important as the trend has been toward use of non-selective, post-emergent herbicides.

## **Fertilizer and Irrigation Practices**

Young trees should be irrigated regularly to facilitate tree establishment and growth. Once trees begin to bear (3 to 4 years after planting), trees should be irrigated regularly, from flowering through harvest. Research from other regions has suggested that mild drought stress during the late fall (September or October) and early winter enhances flowering in late winter or early spring.

### **Lychee crop production strategy**

- **Time N (nitrogen) fertilizer applications to support flowering, fruit development, postbloom vegetative flush, postharvest photosynthesis and carbohydrate accumulation.**
- **Maintain all other nutrients at nonlimiting levels.**
- **Maintain nonlimiting soil moisture from flowering through harvest.**
- **Allow postharvest flush(es) to harden for photosynthesis and carbohydrate accumulation**
- **Designate tree size control program to maintain canopy light exposure and crop production.**

## Lychee plant nutrition strategy

- Recommend N (nitrogen) applications be confined from just before/at flowering to no later than harvest. Split N applications into 2-4 applications per year.
- Do not over apply N, which results in excessive vegetative growth over reproductive growth.
- Apply 90-200 lbs N per acre per yr
- Secondary (Mg, S) and minor (Mn, Zn, Fe) elements should be applied on an as needed basis or maintenance level to maintain tree health.
- Most Florida soils have moderate to poor soil fertility.
- Leaf litter and/or mulching may be beneficial.

## Lychee leaf nutrient levels

Element	Symbol	Unit	Range for mature trees		
			Australia	So. Africa	Israel
Nitrogen	N	%	1.50-2.00	1.30-1.40	1.50-1.70
Phosphorus	P	%	0.14-0.22	0.08-0.10	0.15-0.30
Potassium	K	%	0.70-1.10	1.00	0.70-0.80
Calcium	Ca	%	0.60-1.00	1.50-2.50	2.00-3.00
Magnesium	Mg	%	0.30-0.50	0.40-0.70	0.35-0.45
Sulfur	S	%	0.11-0.14	no data	no data
Boron	B	ppm	25-60	25-75	25-75
Iron	Fe	ppm	50-100	50-200	50-200
Manganese	Mn	ppm	100-250	50-200	40-80
Zinc	Zn	ppm	15-30	15	12-16
Copper	Cu	ppm	10-25	10	no data
Sodium	Na	ppm	<500	no data	300-500
Chlorine	Cl	%	<0.25	no data	0.30-0.35



Production practices for Florida lychee.

Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Disease <sup>1</sup>			Anthracnose →									
Insect <sup>2</sup>	—————							—————				
Fertilizer:												
General <sup>3</sup>			—————			—————		Do not apply nitrogen containing fertilizers				
Micronutrient <sup>4</sup>	- - - - -	- - - - -	—————									
Iron <sup>5</sup>			—————									
Weed control:												
Mow	X		X		X	X	X	X	X	X		X
Herbicide Contact	- - - - -	- - - - -	—————			- - - - -	- - - - -	- - - - -	- - - - -	- - - - -		
Irrigation <sup>6</sup>	Little to none - begin irrigating at panicle emergence through harvest - little to none →											
Harvest						—————						
Hedge and topping <sup>7</sup>						—————						
Frost protection	—————										—————	
Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

## Irrigation strategy for lychee

### Normal crop cycle lychee

- Little or no irrigation from Aug. until signs of bloom (late winter/early spring).
- Regular irrigation from flowering to harvest.
- After harvest, prune to synchronize tree. If no rainfall, then reduce irrigation until new leaves about 1/2 full grown, then reduce/eliminate irrigation from late summer until signs of bloom.

## **Spacing and Pruning**

Lychee trees may grow very large, and frequent pruning of wood greater than 1 inch in diameter may lead to continuous vegetative growth and reduced yields. Trees should be moderately to widely spaced in rows (18 to 30 ft) and spaced 22 ft to 30 ft between rows. A plan for tree removal as the trees grow larger is recommended in high-density (closely-spaced) plantings. Trees planted in the home landscape should be 30 ft or more from buildings and other trees. Tree crowding results in a reduction in light intensity among adjacent trees and decreases the number of hours of light exposure to the canopy, causing a loss of the lower parts of the canopy and reduced fruit set. Training of young trees is usually not required. Annual or periodic pruning of mature trees will maintain adequate light levels in the orchard, reduce the size (diameter) and amount of wood necessary to prune to maintain trees at a manageable size, provide access to the grove for cultural practices, and help to maintain acceptable crop yields. Pruning should be carried out immediately after harvest to allow regrowth and maturation of new shoots and leaves before the onset of cool/cold winter temperatures.

## **Postharvest Handling**

A major constraint to the production of lychee is that the fruit only ripens on the tree and has a relatively short shelf life. Factors contributing to quality loss during harvest, handling and marketing include: rapid loss of water in pericarp (peel) resulting in a dramatic decrease in fruit quality within 24 hours when not cooled and kept humidified; browning of the peel (desiccation); water loss from the peel resulting in hardening of the peel, i.e., the peel becomes brittle; and cracking of the peel which promotes decay. In combination these result in reduced commercial value or total loss of fruit quality.

### **Common pre- and postharvest peel disease organisms**

- ***Colletotrichum gloeosporioides*** (pre- and postharvest)
- ***Alternaria* sp.** (postharvest)
- ***Cladosporium* sp.** (postharvest)
- ***Penicillium* sp.** (postharvest)

## **Other factors contributing to fruit quality loss include**

- 1. Short harvest season, resulting in limited availability of fruit.***
- 2. Improper handling, i.e., not cooling the fruit immediately after harvest.***
- 3. No cooling or inadequate cooling prior to shipping or during shipping.***

## **Other factors contributing to quality loss include**

- 1. Handlers and retailers often unfamiliar with handling requirements.***
- 2. Lack of U.S. grade standards.***
- 3. Perceived quality vs. actual quality (i.e., lychees with brown peel can still have high-quality pulp). However, brown lychee may not be marketable.***

## **Recommendations**

- 1. Use clean, low-height, field containers to minimize bruising and introduction of decay organisms.***
- 2. Harvested fruit should be placed immediately in the shade and/or covered with a light colored material to shade the fruit which will begin to lower the fruit temperature. The key is to remove the field heat and keep the fruit peel exposed to a high relative humidity.***

**Postharvest treatment options** (note: cooling time is shorter and more effective if fruit is precooled prior to bagging and packing)

- Hydrocool fruit as soon as possible after harvest. Hydrocooling is the preferred method of removing the field heat in the fruit. Hydrocooling consists of submersing fruit and/or spraying the fruit with cold water or cold water-ice mixture (32°F-34°F), pH 6.8-7.3, and 100 ppm to 150 ppm free chlorine to lower the fruit pulp temperature to 41°F. This method generally takes much less time than forced-air cooling. After cooling, allow excess water to drain from fruit, then de-stem, sort, and pack fruit in a cold room. Pack fruit in vented polyethylene lined boxes that have some holes for aeration. After packing, place boxed fruit into cold storage at 41°F for 'Mauritius' and 38°F for 'Brewster' and at 90 to 95% relative humidity.***

## **Recommended postharvest treatment options**

- ***Forced air cooled as soon as possible after harvest. Forced-air cooling consists of creating a difference in air pressure on opposite faces of stacks of vented containers. The difference in air pressure forces air through the stacks and around the fruit carrying the heat in the fruit away. However, control of the relative humidity is more difficult with this method. After cooling, then de-stem, sort, and pack fruit in a cold room. Pack fruit in vented polyethylene lined boxes that have some holes for aeration. After packing, place boxed fruit into cold storage at 41°F for 'Mauritius' and 38°F for 'Brewster' and at 90 to 95% relative humidity.***

## **Recommended postharvest treatment options**

- ***If hydrocooling or forced-air cooling is not available or feasible then de-stem, sort, and pack fruit in a cold room. High humidity is essential to maintaining lychee fruit color and peel hydration. Spray fruit with water and cover the unpacked fruit in the cool room with a clean, wet cloth. This will keep fruit moist and increase relative humidity. Pack fruit in vented polyethylene lined boxes that have some holes for aeration. After packing, place boxed fruit into cold storage at 41°F for 'Mauritius' and 38°F for 'Brewster' and at 90 to 95% relative humidity.***

## **Recommended postharvest treatment options**

- *In a comparison of hydrocooling (HC; 32°F, 100 ppm free chlorine), forced-air-cooling (FA; 2.5 cm static pressure difference, 38-41°F, 80-90% RH), and room cooling (RC; 38-41°F, 90% RH) of lychee, it took only 12-15 minutes to HC, 60 minutes to FA, and 13 hours to RC. Furthermore, de-stemmed fruit maintained better color and fruit quality during storage than fruit left on the panicle. HC and de-stemmed fruit had the best quality fruit compared to FA and RC after 15 days of storage.*
- *There is some evidence that hydrocooling with low pH water is more effective for maintaining lychee peel color than neutral and high pH water.*

## **Other options – controlled atmospheric storage**

- *For extended storage from 21 to 28 days - use refrigeration + controlled or modified atmosphere storage (CA or MA storage):*
- *a) 'Mauritius': 41°F (5°C)/85-90% relative humidity; 4% oxygen/7.5% carbon dioxide*
- *b) 'Brewster': 38°F (3°C)/85-90% relative humidity; 2% oxygen/5% carbon dioxide*

## **Other options – not legal in U.S.**

- *In addition to some type of precooling a postharvest fumigation of lychee fruit with sulfur dioxide gas then an acid dip. This treatment reduces postharvest fungal diseases and “fixes” the fruit with a reddish peel color. Special fumigation rooms and acid baths are required to use this procedure. In addition, sulfur dioxide levels in the fruit flesh must be monitored to be sure they are below 10 ppm. Fruit flavor may be affected and the color of the fruit may look artificial. This treatment and fruit treated with sulfur is illegal in many countries including the U.S.*

## **Other options – not available or not legal**

- *Prior to precooling, lychee fruit are destemmed and then exposed to high steam heat for about 2-3 seconds which “fixes” the peel color. Fruit are immediately hydrocooled and treated as above.*
- *Postharvest fungicide dipping of lychee to prevent postharvest disease decay. No chemicals are legally registered to use for this purpose in the U.S.*



Further sources of information:

1. Hardenburg, R.E., A.E. Watada, and C.Y. Wang. 1986. The commercial storage of fruits, vegetables, and florist and nursery stocks. USDA-ARS Agriculture Handbook no. 66.
2. Pornchaloempong, P., S.A. Sargent, and C.L. Moretti. 1997. Cooling method and shipping container affect lychee fruit quality. Proc. Fla. State Hort. Soc. 110:197-200.
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# Marketing Opportunities

## Marketing – Introduction

### Potential increased returns from:

- Cooperatives
- Alliances with gift fruit marketers
- Direct market to consumer
- Pick your own
- Value added products
- Organic production
- Diversify products



Virtually all lychees produced in Florida are sold fresh, because the volume of production is too small to justify large-scale commercial processing facilities. Further, the production season is very short, only five or six weeks long. The short season and relatively limited production by individual growers makes it costly and difficult to establish and sustain marketing programs for lychees with major food retailing chains. Higher returns may be obtained many ways, but each alternative presents both time and money costs to consider.

Common alternatives include:

- Establishing and participating in a cooperative
- Directly marketing your fruit through roadside stands or “green markets”
- Promoting use of lychees in recipes, i.e., sorbets, martinis, salads, marinades
- Moving to an organic production system to command a higher price
- Selling related products to allow you to extend your sales season
- Diversifying into alternative product uses, i.e., dooryard fruit trees

## **Cooperative Marketing**

- **Better price with larger volume of lychees**
- **Provide member-growers with marketplace bargaining power**
- **Take greater control of your product**
- **Find cooperative marketing publications at: <http://www.rurdev.usda.gov/>**



Members of a cooperative can usually negotiate better prices because they have larger volumes to sell. They may also have reduced costs for inputs and harvesting labor bought as a group. Member-growers save time and eliminate wasted product left in the field. You will need to make a commitment to selling your product through the co-op in order to sustain the overall group effort, and stand to gain a chance for better returns for your crops. A co-op requires skilled financial and time management, and it may be necessary to hire an experienced individual with excellent decision-making skills on a part-time seasonal basis.

You can find information for farmers' cooperatives by following this link <http://palmm.fcla.edu/feol/> to find "Florida Environments Online." Then use this site's path finder entitled "Florida Agriculture and Rural Life" to search for the publication "Co-operative agriculture in Florida: a survey of the development of the cooperative ventures in Florida and the United States," by Doyle Edgar Timmons. Although this publication is quite old, it remains an excellent source of cooperative farming information. The entire publication is available for download and printing purposes.

## **Pick your own markets**



- **Advertise with road-side signage, in local newspapers and on the Florida Department of Agriculture and Consumer Service's Web Site at <http://www.doacs.state.fl.us>**
- **Provide parking, restrooms, pole-mounted picking aids**

A pick-your-own operation will provide you with more profits, but takes considerable time during the harvest season.

You will need to advertise with road-side signage, in local newspapers and on the Department of Agriculture Web Site at: <http://www.doacs.state.fl.us>

You will need to provide parking, pole-mounted picking aids, and containers. You may also want to provide restrooms and drinking water. Also, you will need to be there to supervise and help. It will take time to build up your business with repeat customers.

Close supervision will be required to prevent damage to trees and to assure patrons' safety. Particular attention should be paid to covering irrigation wells and to controlling insects such as fire ants and wasps.

You will also need to investigate if you need to carry extra liability insurance (pick-your-own operations are often outside the bounds of regular farm liability insurance).

## **Farmers' Markets**

- **Considerable time investment and transportation expenditures**
- **Requires timely harvest of lychees**



The USDA's Agricultural Marketing Services website has a link to contact names, location addresses and hours of operation for farmers' markets found throughout the state of Florida: <http://www.ams.usda.gov/farmersmarkets/States/Florida.htm>. In addition, the Florida Department of Agriculture and Consumer Services' Bureau of State Farmers' Markets has links to State Farmers' Markets, Fairs and Expositions, and Community Farmers' Markets as well as how-to publications and research articles: <http://www.florida-agriculture.com/markets.htm>

Many South Florida farmers' markets have minimal produce available that coincides with the brief lychee season, so there may be limited operational hours at nearby farmers' markets locations. It is important to contact managers at these locations early on to arrange for space and determine hours of operation.

## **Roadside Markets**

**Location! Location! Location!**



Example: <http://www.Redlandriot.com>

A few growers sell various fruits and vegetables roadside in the Homestead area. The advantages are that you get all of the money and the returns are immediate. Roadside markets require increased investment in equipment and a packing building in a retail outlet. In some cases this has been expanded with other retail sales of food. For more information on South Dade (Homestead) roadside stands, see:

<http://www.Redlandriot.com>

and click on “Burr’s Berry Farm,” “Knaus Berry Farm,” and “Robert Is Here.”

## **Organic Markets**

**Major growth in consumer demand for organic produce over the past twenty years.**



**Difficult to follow strict organic practices in South Florida growing climate due to year-round pests and disease.**

Given the ever-increasing market demand for organically-grown, or “green,” produce, we recommend lychee growers work with university and extension specialists to experiment with ways to successfully develop and produce viable organically-produced lychees. Currently, the cultural technology faces an array of problems, due in large part to the hot humid climate that characterizes South Florida, which severely limits production of organic lychees.



## Value Added Products

**Fresh Frozen Lychees**

**Canned Lychees**

**Lychee Jams**

**Dried & Candied Lychees**

**Lychee Honey**



Adding value to lychees can be done by canning, freezing, jamming, drying or combining with other products like fruit cups or bakery goods. All of these processes serve to extend the shelf life of the lychees and present a key marketing diversification approach, given the extremely limited supply window. In this product form, lychees can be marketed year-round to supermarkets and food service outlets in Florida.

## **Marketing Alternatives**

**Market through gift fruit and florist associations**



**Sell smaller lots of product through other lychee firms**



**Develop individual or group websites for Internet sales**



The Florida Gift Fruit Association (<http://www.fgfsa.com/>) specializes in shipping Florida-grown citrus products nationally and internationally, and many of their member firms may consider adding lychees or lychee products to their gift baskets.

The Florida Department of Agriculture and Consumer Services offers promotional assistance including website development and hosting, promotional materials, demographic consumer information, current research articles, etc. There is also extensive material available concerning the “Fresh from Florida” Florida Agricultural Promotional Campaign, which can be viewed on <http://www.florida-agriculture.com/marketing/index.htm>

Larger lychee firms may be willing to purchase small lots of lychees, such as LycheesOnline.com, which offers a form for growers to submit online in order to arrange for delivery and final sales of your product through their organization.

## **Market Alternative Product Uses**

### **Dooryard trees for shade and fruit production**



'Maritius' lychees © Ian Maguire/UF TREC



The lychee tree is a handsome, dense, slow-growing tree that can grow to 30 to 100 feet high and nearly as broad. Air-layered trees begin to produce fruit within two to five years after planting and continue to do so for over one hundred years, making it both an attractive and edible sweet treat for home and business owners throughout South Florida. Lychee trees could be marketed to residential and commercial nursery outlets and businesses.

## Online Site References for Lychee Photos Used in the Marketing Section

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4. <http://lightworksnursery.com/lychpink.jpg>
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7. <http://cgsd.com/rlatham/HiloMarket/Lychees625.jpg>
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10. <http://www.apfrozen.com/images/jelly/lychee.jpg>
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# Transitioning Out of the Business

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For some farmers and fishermen, exiting the business may be the best financial and family option. For some it may be the only option. Transitioning to a new career, business, or to retirement can be an emotional and complex experience. This is particularly true when financial stress is forcing a change or exit from the business. Some producers and their families may be ready for a change or for retirement, but others may be in the process of being forced out of their business for financial reasons. If you are facing a potential transition out of your business you should discuss your options and goals with family members, creditors, and financial advisors. You might also seek additional assistance from TAA technical assistance providers.

There are different transition issues that need to be addressed depending each individual's situation, but some general factors should be considered by most producers or fishermen faced with exiting their business. These include future sources of income, family and emotional well-being, tax and credit issues, and retaining and education opportunities for TAA eligible producers and fishermen.

## **Future Sources of Income**

If you are transitioning out of your business, you need a new means to support yourself and your family. Your source of future income will depend significantly on your stage of life. Your stage in life will determine whether you are willing to start over with a new career or business, seek additional education and training, or plan for partial or full retirement.

## **Different Business or Career**

An earlier section of the TAA technical assistance package, Inventory of Resources and Talents, discussed your skills and resources. This same inventory can be very useful to assess your opportunities to transition to new business or career. The education and experience that you have obtained will have a significant impact on the alternative sources of employment and income available. The management, technical and people skills obtained in farming or fishing can often be leveraged into valuable assets for other types of employment or in other businesses.

Farmers and fishermen possess a set of entrepreneurial skills that are valuable when starting a new business. But starting a new business is rarely easy. The statement is frequently made that 80 percent of new businesses are gone within five years. Farmers and fishermen may possess the experience and management skills to give them the edge to overcome the odds when starting a new business, but should still seek advice and assistance. Small Business Development Centers (SBDC's) are located throughout the country and provide help with financial, marketing, production, organization, engineering and technical problems and feasibility studies. To locate the nearest SBDC visit (<http://www.sba.gov/sbdc/>) or call 1-800-8-ASK-SBA.

You may be interested in starting a new career as an employee, rather than starting a new business. You probably have numerous relationships with businesses in your area. If you are seeking off-farm employment, your existing relationships are one of the most valuable tools available to assist you in your job search. As the producer of a TAA certified commodity, you also have access to employment counseling services at your state department of labor (<http://www.doleta.gov/tradeact/contacts.cfm>). Location may also be a major factor in determining how you will seek future income. In many rural areas job availability is limited, many jobs may not pay enough to maintain your standard of living, or available jobs may not include health insurance benefits. Determining whether you are willing to relocate may be a major issue for you and your family.

Regardless of whether you are considering a new business or a new job, your attitude is critical to success. You have the opportunity to create a new future for yourself. You can take the attitude that your future is in your hands or you can have the attitude that you are a victim of circumstances beyond your control, of imports, overproduction, and lost markets. Your attitude may be the single most important factor in determining the success of your new career or business.

## **Retirement**

The average age of agricultural producers in the U.S. is in upper 50's. For many producers, retirement may be a viable option when facing the choice of exiting the business or struggling financially to keep it going. If retirement is an option for you, there are a number of questions you should answer before making the decision to retire.

Do you have sufficient financial resources to sustain you through the retirement years? You should project your retirement income and your retirement expenses to determine if you will have adequate income for your retirement. If you aren't sure how to project your financial needs or how to evaluate income from your investments and capital assets, you should seek the assistance of a financial planner. How will you handle your capital assets? For many producers, the bulk of their wealth is tied up in capital assets such as land, buildings, and equipment. Will you sell the capital assets and invest the proceeds or will you lease out the assets to provide retirement income? Do you know how much social security you will receive if you retire? Do you have the annual statement you receive from Social Security Administration detailing how much you will receive at

various retirement ages? You may want to contact your local social security office (<http://s3abaca.ssa.gov/pro/foi/foi-home.html>) or call 1-800-772-1213 to determine your specific retirement benefits.

Health is a major issue for most senior citizens. Do you want to retire early while your health is good? If you retire now will you have adequate health care coverage to cover you until you are eligible for Medicare? Should you wait to retire due to health care affordability?

## **Supplemental Income and Leasing Assets**

You have probably considered supplementing your income with off-farm or non-fishing income. Have you exhausted all the possibilities for supplemental income? There are certainly trade-offs associated with finding a second job. You may not have the time to successfully manage your business. The impact on your quality of life or family life may cause you to decide supplemental income is not worth the cost.

You may want to explore the possibility of terminating your business while retaining control of your business assets. Leasing your land, equipment, or boat to other farmers or fishermen when combined with an off-farm or non-fishing job may allow you to support yourself financially. This alternative may allow you to keep the land or boat to which you have emotional ties, while providing sufficient income for your family. Exiting the business while retaining control of the assets is dependent on the amount of debt you have against those assets and your overall financial situation.

## **Family and Emotional Well-Being**

When considering a transition or exit from your business, family concerns are one of the major issues that will impact your decision making. What are the goals of your family? How much emotional impact will leaving the business, possibly your way of life, or a potential move have on you and your family? Where will you live, can you stay living on your farm or in your community?

### **Goals**

The previous Goals section of the TAA technical assistance package discussed setting and implementing goals for your business and family. Goals are important when you are considering a major career change. Even though exiting your business may be the best financial decision or in some cases you may not have a choice about exiting, considering your family goals as explore the next step is important.

### **Emotional Stress and Counseling**

Transitioning out of your business and your way of life may be one of the most stressful events you will ever experience. This is especially true if you are exiting due to financial

stress. Although you might not believe it now, many farmers and fishermen have successfully and happily transitioned to a different career. Many successful business people started out with a farming background and took their work ethic and skills into another field. During this time of emotional stress, it may be very important for you get help. Counseling help is usually available. You might start by checking with your local county human services department or a member of your local clergy. If you don't know where to ask for help, contact your local Extension Service and ask them where to find assistance.

## **Living Situation**

What options do you have to continue to live in your home and in your community? The answer may depend on many of the issues discussed above, can you find alternative employment or start a new business that will financially support you in your current living situation? If you live on a farm, can you retain ownership of it and rent out the land? If you need to sell the land, can you keep the farmstead and continue to live in your home? If you need to move to a different community to find employment, will you be able to continue to own a farm that may have been in your family for several generations? One of the most important aspects of these topics is whether you are willing to seek the help of friends, family, or business advisors to help you think through your options? Often times someone else can help you think about options more broadly and also, others can look at the situation without the emotional stress you may be experiencing.

## **Tax and Credit Issues**

Taxes are one of the major issues you will need to address if you exit your business. If you are planning to sell your business or assets owned by your business, meet with a qualified tax advisor first. You should also keep your lender informed about your plans. Many assets have security agreements in which they are used as the collateral for the outstanding debt used to purchase the asset. Proceeds from assets sold with security agreements must be used to pay off the credit owed for the asset.

## **Income Taxes**

Taxes can consume a major portion of the sales value of a business's assets. Tax planning is critical if you are transitioning out of your business and selling business assets. When selling capital assets you must pay income tax on the difference between the selling price and the tax basis of the asset. Tax basis is the generally the amount you paid for the asset minus any tax depreciation you have claimed on it. Some assets, such as land, are not generally depreciated, so the tax basis is simply the difference between the selling price and the original purchase price. Most assets owned more than 12 months qualify for capital gains tax rates. Capital gains rates are either 5% or 15% depending on your income level. For assets that have been depreciated below their market value, the



difference between the sales price and depreciated value will be taxed at your normal income tax rate.

There are ways to reduce the amount of tax you will pay on the sales of your capital assets. One method is installment sales of property. The installment method allows you to spread out the taxation proportionally over the years that principal payments are made. Another strategy is to sell assets over several years. Both the installment method and selling assets over time will often allow you to keep more taxable income in lower tax brackets. If you are selling a farm that includes your personal residence, up to \$250,000 (\$500,000 for married filing jointly) of capital gain on the residence can be excluded from taxation. In every case you should consult a tax advisor.

### **Self-Employment Tax**

Income tax must be paid on the sales of all farm or fishing assets, but self-employment tax is only due on current assets, such as, crop and livestock inventories. You may want to consider selling all of your current assets in a single year if it will push your income over the self-employment tax limit. In 2003, self-employment tax is only charged on the first \$87,000 of income. The self-employment tax threshold increases each year. Sales of capital assets including equipment, machinery, buildings, and land are not subject to self-employment taxes.

### **Collateral and Security Agreements**

You have probably been discussing your situation with your lenders, but before you sell any assets you should contact the appropriate lenders to check on security agreements. You should repay outstanding loans against assets that you are selling or discuss a repayment plan and security release with your lender. Frequently there is considerable debt against farming or fishing assets. Liquidating some assets may only generate enough cash to pay the outstanding debt or in some cases the sales revenue may be insufficient to cover the debt. You should keep lenders informed throughout the process and work with them.

### **TAA Retraining and Education Opportunities**

Producers of commodities that are eligible for TAA benefits are also eligible for substantially more retraining and educational benefits than the typical producer or fisherman facing an exit from their business. To learn more about TAA retraining and educational benefits available, contact the Department of Labor TAA coordinator in your state (<http://www.doleta.gov/tradeact/contacts.cfm>). For some producers and fishermen the TAA educational benefits may be the most significant benefit available under TAA. For others, such as those approaching retirement or unable to relocate to an area where jobs are available, the educational benefit may be less valuable.

The TAA Department of Labor program provides retraining and reemployment services tailored to help individuals prepare for employment in another job or career. Producers or fishermen may receive up to 104 weeks of approved training in occupational skills or basic or remedial education.

There are some conditions that you need to meet to receive the educational benefits. You must be able to complete your educational program within 104 weeks and be job ready at the end of that time. Generally that means that will need to earn some type of degree within the 104 weeks. The educational program must be fully paid for by the Department of Labor. You can't supplement government payments with your own funds. This means that there are limits to how much the program can cost and on when you must complete it. Individual state labor agencies responsible for TAA have lists of educational programs in which TAA participants may enroll.

## **Summary**

Whether to make the pivotal move of transitioning out of your farm or fishing business is a very personal decision that each person has to think through with the support of his or her family. Analyzing the financial viability of your business, determining the availability of alternative sources of income, working through the emotional and family issues, examining the tax consequences, and exploring retraining opportunities are important parts of the process. Assistance is available for all of these issues related to transitioning out of your business, but only you and your family can make the final decision.

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