Section 2: Orchards

After each topic in this section there is a set of questions designed to help you examine and evaluate the orchards component of your business.

Orchard Assessment:

The main income source for many fruit farms are the individual blocks of fruit. Many factors contribute to orchard productivity; soil type, fruit variety, tree density, rootstock, tree age, tree height and structure, water availability, site location and how the orchard is managed (fertilizing, pest control, pruning and other cultural practices).

As consumer demand and world fruit supplies shift, it is important to analyze your current orchards to determine which blocks can contribute to your success in the marketplace.

Analyzing orchards begins with **tree counts**, measuring tree spacing and height, listing varieties within a block, and listing the year planted and rootstock.

EXERCISE: Complete Worksheet #2 Orchard Analysis found in the appendix. It is important that you list each variety in a block order to analyze if it is adequately pollinated and to accurately determine yield and income per acre.

Use worksheet #2 to answer the following questions:

a. **What is the total acreage for all fruit? Does this "acreage" include loading areas, drive lanes and head lands? Calculate "tree acres" separately from""support acres" (loading areas, ditches, drive lanes, head lands).**
Total acres_____ **Tree acres**_____ **Support acres**_____

b. **What is the total acreage for each type of fruit and the age breakdown of each?** ***(Example: Tart cherries versus peaches.) - complete below.***

Type of fruit:	Tree Acres	Type of fruit:	Tree Acres
1 – 4 years	_____	1 – 4 years	_____
5 – 9 years	_____	5 – 9 years	_____
10 – 20 years	_____	10 – 20 years	_____
21 – 35 years	_____	21 – 35 years	_____
greater than 35 years	_____	greater than 35 years	_____
Total Tree Acreage	_____	Total Tree Acreage	_____

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

Type of fruit:

	Tree Acres
1 – 4 years	________
5 – 9 years	________
10 – 20 years	________
21 – 35 years	________
greater than 35 years	________
Total Tree Acreage	________

c. After looking at acreage breakdown by age, is orchard age in balance? Yes No

d. Have you regularly removed and replanted blocks to renew orchards? Yes No

e. Sort apple orchards by intended market. List below acreage for varieties on your farm:

Fresh

	Tree Acres		Tree Acres		Tree Acres
High-Value Fresh varieties:					
Gala	_____	Linda Mac	_____	Macoun	_____
Honeycrisp	_____	Fuji	_____	Red Jonagold	
Other:		Other		Strains	_____
_____	_____	"very red"	_____		
		Total Tree Acres in High-Value Fresh Varieties			_____
Moderate-Value Fresh varieties					
Royal Empire	_____	Marshall McIntosh	_____	Redcort	_____
		Total Acres in Moderate Value Fresh Varieties			_____
Low-Value Fresh varieties:					
Law Rome	_____	Red Delicious	_____	Other:	_____
Jonagold -Reg. strains	_____	Spur McIntosh	_____	Regular Empire	_____
		Total Acres in Low-Value Fresh Varieties			_____

Peelers

High-Value peelers					
Idared	_____	Rome	_____	Goldens	_____
Crispin	_____	Jonagold	_____	Granny	
NY674	_____	Gala	_____	Smith	_____
		Total Acres in High-Value Peeler Varieties			_____
Moderate-Value peelers					
McIntosh	_____	Empire	_____	Ginger Gold	_____
Early Gold	_____	Paula Red	_____	Jersey Mac	_____
		Total Acres in Moderate-Value Peeler Varieties			_____
Low-Value peelers:					
Cortland	_____	Wayne	_____	Twenty Ounce	_____
Greening	_____	Monroe	_____	Late Odd	_____
		Total Acres in Moderate-Value Peeler Varieties			_____

Juice/Cider

Total Tree Acres in Juice/Cider _____

f. What percent of orchards are in:

Fresh Varieties		Process/Peeler Varieties	
High-Value varieties	_____%	High-Value varieties	_____%
Moderate-Value varieties	_____%	Moderate-Value varieties	_____%
Low-Value varieties	_____%	Low-Value varieties	_____%

1. Orchard Production Assessment:

EXERCISE: Complete **Worksheet #3, the Apple Production/Delivery Summary** and **Worksheet #4, Four-Year Production Summary** which can be found in the appendix.

Use worksheets #3 and #4 to answer the following questions.

a. What was your total production in the past year by fruit variety? _____

b. What is your average yield per tree acre by apple variety? _____

c. What is your 4-year average yield per tree acre for all apples? _____

d. What is your 4-year average yield per tree acre by apple variety? _____

2. Evaluating Potential to Increase Orchard Yields

Review your apple blocks and answer the following questions for each block: **(Copy this page for completing this evaluation)**

a. Considering tree density. What is the maximum expected production? (bushels per tree x number of trees per acre) = _____

b. What percent of trees are missing, dead or dying? _____%

c. Is the orchard adequately pollinated? Yes No

- Do varieties within the orchard bloom at the same time? Yes No
- Are there crab apple pollinators in the orchard? Yes No
- Are the crab apple pollinators blooming at the right time? Yes No
- Are the crab apple blooms white or red in color? White Red
- Are the pollinators correctly positioned? Yes No
- How many beehives are normally rented? _____
- Are bees brought into the orchard at the right time? Yes No

d. What is the average tree height? _____

- Can tree height be increased? Yes No

e. How often is this orchard dormant pruned? Every year / Every 2 years / Every 3 years / More than 3 years

f. Have trees been trained and pruned to improve air and light penetration to the center of the tree (thus improving pest control and fruit bud initiation)? Yes No

g. Are the trees in the orchard pest free? Yes No

Has an adequate disease control program been implemented to control powdery mildew and apple scab? Yes No

Is the area under the tree weed free from May 1 until Aug. 15? Yes No

Do leaves appear a healthy green or are they bronzed? Green Bronze

Are trees defoliating in late summer due to insect pests? Yes No

Are nutritional deficiencies apparent in leaves? Yes No

Has a leaf analysis been done recently? Yes No

h. Are trees chemically thinned adequately each year? Yes No

Does the orchard show a pattern of biennial bearing due to over cropping? Yes No

Have you used an application of ethyrl in late June to encourage re-bloom the following year? Yes No

i. Do you know the pH of the orchard? Yes No

When was the last time lime was applied?_____

How often do you apply lime? _____

How much lime is used per acre as maintenance application and how often?_____

j. What is your typical fertilizer program?

Normal fall applications of potassium & boron Yes No

Spring applications of nitrogen, potassium & boron Yes No

Do you split nitrogen applications between April and early June? Yes No

Do you apply foliar nutrients? Yes No

k. Was soil tested (for phosphorus, magnesium and calcium levels) before the orchard was planted? Yes No

Were these nutrients applied, as recommended, **before** planting? Yes No

Orchards Planning Summary

Refer back to your responses to the questions in this section and complete this summary
List below the areas of orchard improvement you have identified.

Orchard Areas for Improvements
1.
2.
3.
4.