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Orchard Site Rating Sheet

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Introduction

Selecting the proper site for a new fruit orchard is critical for its success. Since the fruit trees will remain in the same spot for at least 15 years, it is easy to understand the importance of proper site selection and preparation before planting. A one-year delay in planting an orchard, in order to better prepare the site for a planting, will pay back in increased tree growth, health, and yield.

In order to assure the development of a successful and productive orchard, the following information and rating sheet have been designed to assist growers in determining site suitability for fruit production by quantifying the difficulty of overcoming limitations to production.

Soil Factors

- Fruit trees prefer a well-drained soil. Avoid areas with a high water table or river bottoms. If a well-drained site is not available, drainage tiles are highly recommended.
- If the soil has a shallow hardpan or is not deep enough (ideally 3 ft or more), tree fruits will benefit from planting on raised beds. Beds should be 6-8 inches high and as wide as the mature tree's spread.
- Loam, clay loam, or sandy loam soils are better-suited for fruit trees than very sandy or heavy clay soils.
- A pH range of 5.5 to 7.0 is recommended for most trees. If a soil test indicates low levels of phosphorus or potassium, incorporate phosphate or potash fertilizers into the soil before planting.

Physiographic Factors

- Fruit trees require good air drainage. Low spots where cold air settles and sites surrounded by buildings or shade trees result in winter cold and spring frost injury.
- Most fruit trees are best suited for north or east facing slopes that delay bud break in the spring, reducing the chances of spring frost injury.
- In Kentucky with our hot summers, regular irrigation is necessary for proper growth and cropping, particularly if the soil is shallow or the orchard is a high-density planting.

Climatic Factors

- Fruit trees need about 8 hours of sun each day. Choose a planting site that receives full sun as early in the day as possible. Morning sun dries dew off the foliage quickly which minimizes disease incidence.
- Plant fruit trees away from taller shade trees in order to provide adequate light and to minimize root competition.

	Rating Value	Actual Score
I. Soil Factors		
A. Texture		
Coarse Loam	30	_____
Loamy Sand	25	_____
Fine Loam	25	_____
Sand or predominantly Sand	10	_____
Clay	10	_____
Silt Clay (very fine)	5	_____
B. Drainage		
Tiled	40	_____
Well Drained	40	_____
Moderately Well Drained	30	_____
Somewhat Poorly Drained	20	_____
Poorly and Very Poorly Drained	10	_____
C. Restrictions to Rooting		
No Restrictions to 48"	30	_____
Orchard Tiled	10	_____
Restrictions 24" to 48"	10	_____
Pans or Restrictions Less Than 24"	0	_____
Bedrock Less Than 36"	0	_____
Salinity and Alkalinity are not serious issues in Kentucky. Still, check your soil for any issues.		
Soil Factors Total Score	**100**	**_____**
II. Physiographic Factors		
A. Slope		
2-12%	35	_____
0-2%	30	_____
12-18%	15	_____
Over 18%	10	_____
B. Elevation above Spring Freeze Line		
More than 100 ft	30	_____
50-100 ft	25	_____
20-50 ft	20	_____
Less than 20 ft	0	_____

C. Air Drainage

Uninterrupted airflow to major air storage basin	35	_____
Minor obstruction to major air storage basin	25	_____
Major airflow obstruction to air storage basin	5	_____
Physiographic Factors Total Score	**100**	**_____**

III. Climatic Factors

A. Spring Temperatures: Probability of damaging freeze or cold weather during fruit set in a 10-year period.

2 in 10	60	_____
3-4 in 10	30	_____
5-6 in 10	10	_____

B. Winter Temperatures: Probability of extreme cold winter temperature in a 10-year period.

2 in 10	40	_____
3-4 in 10	10	_____
5-6 in 10	0	_____
Climatic Factors Total Score	**100**	**_____**

Summary of Scores

Section I: Soil Factors	100	_____
Section II: Physiographic Factors	100	_____
Section III: Climatic Factors	100	_____
Total Score	**300**	**_____**

Interpretation of Fruit Site Ratings

Total Score	Fruit Site Suitability
290 - 300	Excellent
225 - 285	Very Good
170 - 220	Moderate
Less than 165	Poor

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