K-STATE
Research and Extension
Douglas County

For more information, contact:

Roberta Wyckoff
Ag & Nat. Res. Agent
785.843.7058
rwyckoff@ksu.edu

Tom Buller
Horticulture Agent
785.843.7058
tombuller@ksu.edu

Fruit and Vegetable Production in the Home Garden

The benefits of home food production go well beyond supplying fresh, healthy food to the dinner table. Gardeners are also interested in growing their own food because it gives them control over the production practices used, provides physical activity, is an interactive way of engaging neighbors and friends, reduces food cost during the season and beyond, and can sometimes be the only way to get that special variety that isn't commercially produced. Regardless of why you're interested in producing food you'll need reliable information to refer to along the way.

Success in the garden can bring about all of the benefits listed above, but anything less than success can result in frustration. Proper site selection, crop choice, soil, water and nutrient management, insect, disease, and weed management and harvest timing and procedure along with postharvest handling all play a critical role in the level of success that is achieved.

SITE SELECTION:

Nearly all fruits and vegetables need full sun exposure. A minimum of 6 hours of direct sunlight during the middle of the day is needed for best results, but more is better. In situations where sunlight is limited, crops may also be disadvantaged by competition for water and nutrients by the trees and shrubs that cause the shady conditions. Furthermore, perennial fruiting plants are susceptible to yield loss by late spring frosts, so sites with relatively low elevation should be avoided for these crops.

Soil quality may also need to be considered when selecting a site for a fruit and/or vegetable garden. Generally, a rich, well-drained soil is desirable. Where ideal soil conditions do not exist, improvements may be made, but this can take several years of adding compost or other organic matter. For more immediate improved soil conditions, consider raised beds.

Further information:
Selecting a Garden Site (Penn State)
Making and Using Compost (K-State)
Raised Bed Gardening (K-State)

Recommended Varieties

A wide range of fruits and vegetables can be grown in Kansas. A number of factors, including personal preference will go into the decision of what to plant in the garden. Fruits and vegetables range greatly in their amount of space required. Some vegetables require only a few square inches per plant while other will occupy upwards of 100 sq. ft. per plant. Other factors to consider in selecting crops include days to maturity, disease resistance, flavor, productivity, and size, shape, and color. Rigorous studies have been conducted to evaluate the performance of numerous varieties of vegetables. As more varieties are introduced, lists may be updated.

Further information:
Recommended Veg. Varieties (K-State)
Small- and Tree-Fruit Cultivars (K-State)

PLANNING THE GARDEN:

A well-designed garden plan serves as a road map to be used throughout the season. It is important to provide an adequate yield of fruits and vegetables and helps to ensure that garden space is utilized in a way to maximize productivity.

Knowing how much space to allocate to each fruit or vegetable planting is an important consideration. Both plant size and quantity of produce desired will influence the space needed for each crop. Keep in mind how the produce will be used – if you plan to freeze, store, or can certain items in addition to fresh eating, you'll want to dedicate more space than if you intend only to eat produce fresh from the garden. Total yields will likely vary from year-to-year and experience will go a long way in helping to determine how many feet of row or plants to grow.

Further Information:
Veg Garden Planting Guide (K-State)

SITE PREPARATION:

Good soil is the foundation from which garden plants get most of the resources they need to perform well. In many instances, soils benefit from improvement efforts. Those efforts may include nutrient and/or pH alterations or physical improvement. Both the chemical and physical properties of garden soil predicate the potential of high yields.

A good place to start is through a soil test. These inexpensive, often free, tests reveal the chemical nature of the soil – specifically the nutrient and pH condition of the soil. Recommendations for improving these conditions are a part of any good soil test. Consult your Extension Agent for information on collecting an appropriate soil sample from the garden.

The physical characteristics of soil are affected by both the inherent properties of the soil and past management. In cases where increased soil infiltration and drainage are desired, additional organic matter is the best answer. Mechanical incorporation of organic matter results in more effective soil improvement and this may be justifiable in new gardens for the first few years. However, frequent tillage can be destructive to soil quality, so it should be reserved only for incorporation of amendments that will offset the negative effects of tillage.

Further Information:
Soil Prep of the Vegetable Garden (eXtension.org)

WATER MANAGEMENT:

Irrigation is a critical need for gardens in the Midwest. Rainfall is rarely timely enough and in appropriate quantities to fully deliver the water needs of most fruit and vegetable plantings, particularly annual crops that lack extensive root systems.

Early-season rainfall can be both beneficial and detrimental to new plantings of annual crops. It is not uncommon for excessive moisture to stunt developing seedlings or transplants.

There are myriad delivery techniques for irrigation water – some more efficient than others. Generally, systems that deliver water only to the root zone of the crop is both more efficient (thus, less expensive in the long-term) and results in fewer weeds and diseases. For these reasons, gardeners are wise to invest in drip irrigation systems.

Mulch is another important component of a good water management plan. While there are many benefits to using mulch, none are as compelling as its ability to conserve soil moisture – especially during the heat of summer. Mulch may best be deployed after the threat of saturating spring rains since the soil often benefits from direct solar evaporation in very wet situations.

Further Information:
Drip Irrigation Basics (K-State)
Mulch (MU Extension)

PEST MANAGEMENT:

All gardeners will face weed, insect, and disease issues. How well you are prepared to prevent and respond to these issues will have implications on the success of your gardening efforts.

Further Information:
Integrated Pest Management (eXtension.org)

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