

## AGRICULTURAL EXTENSION SERVICE

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# Growing Fall Gardens

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Every vegetable garden should be planned and arranged to permit the planting and growing of a good fall garden. In normal growing seasons this can be accomplished easily by making succession plantings throughout the spring, summer and fall. Some plants remain in the places where they were started for the entire growing season, while others mature rapidly and occupy the ground only a relatively short time. Those remaining in place during the entire season should be planted together; likewise the crops occupying the ground for only a short time should be planted as a unit. In this way the quickly maturing vegetables may be harvested and fall vegetables planted in their place without interfering with either the long season crops or with general cultural practices.

The fall garden should include both long and short season crops but this discussion deals primarily with the crops that can be planted late in the summer and still mature a crop for table use, canning and storage. Many of the short season vegetable crops will not make their best development and some will not develop at all under the hot and dry conditions of mid-summer. For this reason it is necessary to wait for the cooler temperatures and rains of late summer and early fall before planting these crops.

## Resistance of Vegetables to Frost

Vegetable plants may be divided into four groups according to their resistance to frost; namely, hardy, half hardy, tender, and very tender. The lines between these groups cannot be sharply defined because within each there is a graduation. The hardy crops will withstand considerable frost and need not be fully mature by the time of the first frost in the fall, as under normal conditions they will continue to develop for from one to several weeks after that date. The half hardy plants can withstand only light frosts. These crops should be almost fully developed by the time of the first killing frost. Tender plants are injured by light frosts, although they may not be killed. They

should be as fully mature as possible before danger of frosts. Very tender plants are severely injured if not killed by light frosts, and most of them do not grow as well at low temperatures as they do at the higher summer temperatures. If very tender plants are to be used, therefore, they should be seeded in ample time to avoid low temperature and frosts.

### **Average Date of First Killing Frost**

For any one locality the date of the first killing frost in the fall varies greatly from year to year. In any one year it may be several weeks either before or after the average date of killing frost. There is often as much as a month's difference in the date of the first frost in north and south Missouri. The average date of the first killing frost for most sections in central Missouri is around October 15. For north Missouri it is near October 9 and for extreme south Missouri close to October 25. These average first killing frost dates are very important and should be kept in mind when planning the fall garden, although frost may come much later.

### **The Fall Garden Planting Calendar**

Even though the dates of the first frosts vary greatly, they together with the resistance to frost and length of growing season of the crop to be planted serve as a basis for determining the latest safe planting date. Those vegetables which are quick maturing and resistant to frost can, of course, be planted later than those requiring a longer growing season.

Many of the short season varieties of vegetables are not as heavy producers and may not be as high in quality as those maturing later, but they have a definite place in the fall garden because of their early maturity and subsequent freedom from frost injury.

The vegetable crops listed in the planting calendar are divided into groups according to their latest safe planting date. The different crops may, of course, be planted before the suggested latest date. In fact, most of them will stand a much better chance of producing a satisfactory crop if they are planted earlier. If growing conditions are favorable, August 1 will not be too early to plant in central Missouri all of the crops mentioned. (See calendar, Pages 4 and 5).

The latest safe planting dates given are for central Missouri. For north Missouri the dates will be a week to 10 days earlier, and for south Missouri a week to 10 days later.

The varieties suggested above through observation and experiment have proved to be suitable for planting under most Missouri conditions.

No attempt has been made, however, to include all the varieties adapted to Missouri.

The dates suggested as the latest safe dates for planting any particular vegetable can at the best be only a close approximation. Such factors as temperature, soil moisture, soil fertility, insect and disease injury, along with the variety and the first killing frost have a marked influence upon the growth and development of the crop.

The column giving the average yield per 100' row can be used to compute the size of planting to make for any quantity of produce desired for canning or storage. Upon poor soils and under unfavorable growing conditions, the yield per 100' of row will be reduced. Likewise on good soil and under good growing conditions, the yield will be increased. These fluctuations must be considered in any calculations based upon the average yield.

### Cultural Suggestions

When ground is permitted to lie fallow during the summer so that it can be used as a fall garden, it must be kept free from weeds as the weeds take as much water from the soil as do the regular vegetable crops. During some years it is possible by simply digging a deeper furrow than usual to strike soil moist enough to germinate seed. In other years sufficient moisture is lacking and rains must be waited upon. In such seasons, crops can be started before the rains by opening the furrows and filling them with water. After the water has soaked into the soil, the seed may be placed in the furrow in the usual manner and covered to the usual depth. Whatever method of planting is used, it is well to firm the soil well over the planted seed.

It may be necessary to water the young plants thus produced once or twice before the fall rains, but at times this watering will enable the grower to have a growing season longer by several weeks before the first killing frost. When watering is done, the water should be applied in sufficient quantities to soak the soil well. Frequent and light watering may do more harm than good. Placing dry soil over the watered areas after the water has soaked into the ground, or cultivating will prevent the ground from packing and cracking.

Cultivation in a fall garden, as at other times, should be shallow and just enough to keep down weeds and prevent packing of the surface soil. Deep cultivation may be decidedly harmful.

When setting out transplants for the fall garden, it is well to water them thoroughly before removing them from the seed bed. They should be taken up with as much dirt as possible around the roots. When set in the garden, depress the soil slightly around each plant to aid in

## FALL GARDEN PLANTING CALENDAR

Vegetables to be Planted in Central Missouri Between August 1 and 10 for their Latest Safe Planting Date.\*

Vegetable	Suggested Varieties	Resistance to Frost	Approx. Feet of Row per Person	Seed or Plants Per 100' of row	Planting Distance Between Rows in Inches		Inches Between Plants in row	Average Yield per 100' of row
					Horse Cult.	Hand Cult.		
Bush Beans, Green	Stringless Green Pod Bountiful, Tendergreen	Tender	30	1 qt.	30	20	4	2 bu.
Bush Beans, Wax	Brittle Wax, Sure Crop	Tender	30	1 qt.	30	20	4	2 bu.
Chinese Cabbage	Chihili, Wong Bok	Hardy	20	1/3 oz.	28	18	12	85 heads
Carrots	Red Cored Chantenay French Forcing, Scarlet Horn	Half hardy	10	1/2 oz.	24	12	2	1 1/2 bu.
Kohl-rabi	Early White Vienna	Hardy	30	3/4 oz.	24	18	4	2 bu.
Okra	Dwarf Stalked, White Velvet	Very Tender	10	1 oz.	36	30	18	900 pods
Parsley	Moss Curled	Hardy	2	3/4 oz.	28	12	4	90 bu.
Peas	Alaska, Laxtonian	Hardy	30	1 1/2 pts.	30	20	2	2 bu. pods

Vegetables to be Planted in Central Missouri Between August 10 and 15 for their Latest Safe Planting Date.\*

Beets	Crosby's Egyptian	Half Hardy	10	2 oz.	30	18	2	2 1/2 bu.
Chard, Swiss Cabbage Plants	Detroit Dark Red	Half Hardy	5	1/4 oz.	28	18	8	50 lbs.
	Lucullus	Hardy	40	65-80	30	24	18	200 lbs.
	Jersey Queen							
	Golden Acre							

Vegetables to be Planted in Central Missouri Between August 15 and 20 for their Latest Safe Planting Date.\*

Lettuce, Leaf	Grand Rapids	Half hardy	3	½ oz.	24	12	4	25-50 lbs.
Kale	Dwarf Scotch	Hardy	5	¼ oz.	30	20	18	60 bunches
Turnips	Globe, Strapleaf	Hardy		½ oz.	24	18		2 bu.

Vegetables that may be Planted as late as September 10 in Central Missouri for their Latest Safe Planting Date.\*

Mustard	Giant Curled	Hardy	5	¼ oz.	24	12	2	3 bu.
Radish, Summer	Scarlet Turnip, Saxa	Hardy	5	1 oz.	24	12	1½	100 bunches
Radish, Winter	China Rose, Long	Hardy	5	1 oz.	24	12	1½	100 bunches
Spinach	Black Spanish							
	Bloomsdale, Savoy							
	Bloomsdale Long Standing	Hardy	5	1 oz.	30	28	12	90 lbs.

\*For North Missouri the dates will be a week to ten days earlier, and for South Missouri a week to ten days later.

watering. Plant a little deeper in the fall than in the spring. Water well as soon as transplanted. If transplanting can be done just before rain falls, best results usually follow.

Plants susceptible to frost can be protected by covering them with some material such as paper, boards, cloth, etc. Care must be taken, however, to keep the covering material from touching the plants. Tin cans and other materials which are good conductors of heat should not be used as covers for the plants, as they conduct the heat away from the plant and thereby may cause more damage than if the plants were left uncovered.

After all the fall garden crops are harvested, the old leaves, vines and plant refuse left on the ground should be cleaned off and burned, thus destroying many insects and their eggs and various disease spores that would otherwise live over the winter in this material. This is a most important practice in helping to control insects and diseases in the garden the following year. This done, the gardener will be ready to put on a heavy application of barnyard manure and then plow or spade the garden before the ground freezes, leaving the garden plot in condition to work early in the spring.

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