Lettuce and Other Leafy Vegetables

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Does knowing how your salad ingredients have been grown and what has been applied to them interest you? Does growing your own salad ingredients year round interest you? Our society is becoming increasingly more educated about health and nutrition and with this trend, many nutrition-conscious people are growing their own salad makings in small greenhouses where they are in charge of how, and with what substances, they are grown.

As the summer approaches, the warmer weather presents an opportunity to set up a system where nutritious, easy-to-grow salad greens can be grown for family use.

Vegetative Crops

Most of the plants we use for food are in the flowering plants groups. They reproduce by flowering and producing seeds. That process is referred to as the reproductive growth process. Many of the plants we will be discussing here are grown for their vegetation and are harvested before they go into the reproductive or flowering phase of growth. Because many plants are used in the vegetative stage of growth, many people are not familiar with the flowering and fruiting process of plants like lettuce, Swiss chard and kale.

Plants in the vegetative state are less demanding of some of the plant-growing requirements than they are when they get to the fruiting phase of growth, and generally less demanding than are fruiting plants. This can make it easier and less expensive to grow these plants through the lower light and cooler weather of late fall, winter and early spring.

Common vegetative crops include leaf and Bibb lettuces, endives, mustard, kale, beet greens, Swiss chard, spinach, green onions, various herbs and many oriental vegetables.

Most plants need light as an energy source. Vegetative plants can grow well when light is limited, so they can be grown through lower light periods without or with minimal supplemental light. Although their growth rate may be slower, they will eventually grow and develop. In contrast, fruiting plants grown in similar conditions may just grow – not flowering nor bearing fruit because the low light levels keep them in the vegetative state. Since we do not eat tomato and cucumber leaves, vegetative growth is not the goal in these types of plants.

The fertilizer requirements for vegetative plants are rather general. Many varieties of vegetative plants can be grown on the same fertilizer program quite successfully. Different vegetative plants at various stages of growth can be grown simultaneously on the same fertilizer program and in the same growing system. This is very important to the small grower because it greatly simplifies the whole project without compromising plant quality or productivity.
It is when plants reach the fruiting or reproductive growth stage that the specific fertilization program required by each plant becomes more critical. At this stage, the plant’s ability to develop flower and bear fruit hinges on proper fertilization. The proper adjustment for one fruiting plant may be quite different than that for another. At this time, if the grower has plants such as tomatoes, peppers or cucumbers among his hydroponic crop, the plants will need to be cared for according to their specific nutrient needs.

Moving back to the vegetative plants such as lettuces and herbs, a number of vegetative plants of different types and ages can be grown in a relatively small space. Even a space of four by four feet is enough to keep a small to medium-sized family eating salads and greens year round. Larger families and growers who want to grow some of the larger vegetative plants like collards and brussels sprouts will need a larger space.

As plants are harvested from the system, new young plants can be put into their place to keep a continual production plan in place. This requires the seeding of about 25 per cent more plants a week than are actually used or need to be replaced. Overseeding in this way compensates for any lack in germination and enables the grower to select only the best plants at transplant time. This is important if a continual supply of salad fixings and greens is to be maintained.

There is very little cultural work involved with most vegetative plants. You simply seed the plants and get them growing, then transplant into the system and allow them to grow until they are ready to be harvested.

In a small family production area, leaves of lettuces and other plants can be harvested two or three at a time. This allows for a wide variety of ingredients to be harvested for a small two to four-person salad. When only a few leaves are harvested and the plant is left to grow for ongoing production, no more than half the leaf surface of the plant should be harvested at any one time. Harvesting half or less of the leaf surface will allow the plant to continue growing at almost the same growth rate as it had prior to the leaves being picked. If more than half the leaf surface is harvested at one time, the growth rate of the plant will be hampered because there is not enough leaf surface for photosynthesis – needed for continued leaf and plant growth. When the plant has had leaves harvested three to four times it should be replaced. How long a plant is kept in production depends on the kind of plant and the time of the year. Start by harvesting leaves from most plants only three to four times before replacing the plants, and adjust as your experience shows you which plants you can keep in production longer.

**Vegetative Plant Selections**

Lettuces are probably one of the easiest plants to use when starting such a project. Start with Bibb or leaf lettuces – they are fairly easy to grow. As time goes on and you gain experience, add cos lettuces and some endive – plants that usually present more of a challenge. Introduce just a few plants to your system at first. Don’t give up on a lettuce too quickly; some lettuces will grow well at one time of a year and not another. Keep trying with these plants until you have gone through a one-year cycle, taking notes on what time of year you can grow different kinds of lettuce. You should be able to grow some of the commercially-grown Bibb lettuces like Rex all
year long. Other lettuces will be more seasonal. If someone doing the same type of thing is more than a hundred miles north or south of you, their results with some lettuces can be different.

Lettuce seeds do not keep well. Buy only enough seeds for about six months. Store the seeds in a sealed container in the food compartment of the refrigerator until a day or so before you will be seeding them. Return any unused seeds to the same storage after seeding. High temperatures can induce what is called thermal dormancy in lettuce seed. Storing the seeds in the food compartment of the refrigerator should avoid this.

Many herbs can be added to your system as time goes on. Most herbs grow almost as quickly as lettuce, and do not present any additional challenges.

Herbs are usually used in small quantities, so you only need a few plants in your system. To harvest, the amount you need to use is snipped and the plant is allowed to continue to grow. The rule of cutting no more than half the leaf surface of the plant applies with these plants also. Start with sweet basil if you like it and will use it. As time goes on, you can add a plant or two of opal basil, lemon basil or licorice basil if you so choose. All the basils can be started from seed.

Thyme, marjoram, parsley, sage, spearmint and savory can also be grown from seeds and can be used in cooking or in salads. One or two plants of each of these are all that should be started until it is established that you would use more if you had it available.

Tarragon and peppermint are grown from cuttings. Unless you particularly want these herbs, avoid bringing any plant into your greenhouse that has been started somewhere else. It is easy to introduce disease and insect problems by bringing plants into your greenhouse.

Herb seeds are viable for several years. They can be bought a year or more ahead. However, they should not be exposed to high temperatures or humidity.

Slow growing herbs like rosemary should be grown in a pot in the corner or in a hanging basket. Slower growing plants do better in an environment by themselves. They don’t get in the way of the harvesting and replacing of the plants in your main system that have a more rapid turnover.

Green onions of various kinds, onion chives and garlic chives can be grown in the salad greenhouse. They are very nutritious and flavorful, grow fairly rapidly and don’t require much room. Onion and garlic seeds are viable for a few years, and can be purchased a year or more ahead. They can be kept in their original package, re-closing the package after seeding, and kept out of high temperatures and humidity.

Crucifers are a group of very nutritious and rapidly growing plants. They include radishes, mustard greens, kale, turnip greens, and many of the leafy oriental vegetables. Broccoli, cauliflower, turnips and kohlrabi can be grown for their leaves. The leaves can be eaten raw in salads or steamed. Either way, they are very nutritious. If you choose to try them and have the space, you can allow some of the crucifer plants to approach maturity so that they produce the storage organ or flower stalk and buds, which can be harvested and eaten.
Seeds for crucifers are usually viable for several years. They can be bought a year or more ahead. They also should be protected from extremes of heat and kept dry.

Beets and Swiss chard produce greens that can be used in salads or steamed, providing color and nutritional value in either form. Some of the beets can be allowed to produce storage roots and be harvested for that. A little extra room in the system needs to be provided if this is to be done.

The seeds of Swiss chard and beets come in the seed balls produced by the plant. If you plant what you might think is a single seed, you may actually get several plants. This fact should be factored in when making plans for these in your production space.

Spinach is a leafy crop that can be used in salads or as a steamed vegetable. Most commercial growers do not try to grow it during the warm weather. Late fall, winter and early spring should be considered the seasons to try spinach if you are so inclined. It’s best that you get some successful experience growing other salad ingredients before you try spinach.

Spinach is not an easy plant to grow even in the cooler times of the year. The seeds will germinate at cool temperatures as low as 45 degrees Fahrenheit, and temperatures above 60 degrees should be avoided during the germination process. A single batch of spinach seeds will germinate over 3 or 4 years, and can be bought a year or more ahead. They have a very tough outer layer that does not readily let water pass through, so the seeds should be soaked for a while before they are placed in any media for germination. Seeds should not be soaked for more than a few hours without the water being oxygenated.

**Edible Flowers**

A few edible flowers can be grown in the system or in hanging baskets in the greenhouse. They add color, interest and nutritional value to a salad. Some starter suggestions include nasturtiums, pansies and marigolds, since they are relatively easy to grow from seed. There are other flowers that are edible. If you are interested, you may someday want to do some research and include some of them in your salad greenhouse.

Flower seeds can be purchased a year or more ahead. They will remain viable for at least 2 to 3 years. Keep them in their original packages with the tops closed and rolled down, storing them away from heat. They also can be stored in the food compartment of your refrigerator.

**Bedding Plants**

Many of the plants mentioned above can be purchased as bedding plants in the spring. This is an expensive way to stock your greenhouse, but can be a faster way if you are just getting started and want to shorten the time until harvest. Some of the edible flowers or other plants that you are including in small numbers could be brought in as bedding plants. This is a way to try a few plants without buying a packet of seeds for them. However, remember that bringing in plants from other locations, even reputable nurseries, can bring disease or insects into your greenhouse.
Production Systems

Many production systems could be used for your year ‘round salad greenhouse. Because many of the production systems have been discussed in a previous article, (“Greenhouse Plant Growing Systems”, Maximum Yield Indoor Gardening, USA, July / August 2005), only a couple will be mentioned here. It is best to keep your system simple and effective. If you are growing your salad ingredients for your family’s use, you are interested in the results rather than the details of the production process.

The Nutrient Film Technique (NFT) System is the simplest hydroponic system to set up in a small family salad greenhouse. Pre-made NFT channels are made for commercial use, but it is very practical to put together a small system from these for a small greenhouse.

If you want to produce your salad ingredients in an “organic” setting, that is also possible. Commercial “organic” greenhouse production systems can be downsized to be used in a family salad greenhouse. This system will take a little closer monitoring than the NFT system mentioned above, and it will not produce as much, as fast. If you are growing for your own use, there is no need for you to seek organic certification. You can follow the guidelines yourself and grow for your own consumption.

Diseases and Insects

Keeping disease and insects from gaining access to the greenhouse is the best means of control. If you avoid bringing any plant into the greenhouse from outside sources, you will reduce the risk of introducing diseases or insects into the greenhouse. Many people are tempted to bring a favorite garden or patio plant into their greenhouse as cold weather approaches.

To help keep plants – even those you have started yourself – disease-free, use a little wider plant spacing in your greenhouse than what is used by commercial growers. For example, lettuce is usually grown on an 8 by 8 inch spacing in commercial greenhouses. By increasing the distance between the channels, you reduce the number of plants in a given area but you increase the air flow between plants, assuring optimal health.

Keep outside gardens and shrubbery away from your greenhouse. They can harbor insects and disease that can gain entry to the greenhouse as you go in and out. Avoid visiting your own garden or shrubbery before going into your greenhouse. This way, you are less likely to carry something into your greenhouse from outside.