



Image courtesy of Sjschen, <http://en.wikipedia.org/wiki/Image:DunhillEarlyMorningPipeMurrays.jpg>

Growing Tobacco in the Home Garden

The Little Handbook



Image Courtesy: William Rafti of the William Rafti Institute,
http://en.wikipedia.org/wiki/Image:Native_American_tobacco_flower.jpg

It is strange that people should go to such lengths to burn and then inhale some vegetable matter. We must find out what is rewarding about it. - Murray Jarvik, the inventor of nicotine patch

Table of Contents

| Chapter | Contents | Page |
|---------|---------------------------------|------|
| 1 | Introduction to Tobacco | 4 |
| 2 | Different Types of Tobacco | 5 |
| 3 | Choosing Good Tobacco Seeds | 8 |
| 4 | Germinating Tobacco Seeds | 11 |
| 5 | Soil Types for Growing Tobacco | 14 |
| 6 | Planting Tobacco | 15 |
| 7 | Maintenance and Fertilization | 17 |
| 8 | Harvesting Tobacco | 21 |
| 9 | Drying and Curing Tobacco | 23 |
| 10 | Different Tobacco Uses | 26 |
| 11 | Interesting Facts about Tobacco | 28 |



c. 6000 BCE: Experts believe the tobacco plant, begins growing in the Americas.

Introduction to Tobacco

"All along the sea routes ... wherever they had trading posts, the Portuguese began the limited planting of tobacco. Before the end of the sixteenth century, they had developed these small farms to a point where they could be assured of enough tobacco to meet their personal needs, for gifts, and for barter. By the beginning of the seventeenth century these farms had, in many places, become plantations, often under native control."

Jerome Edmund Brooks "The Mighty Leaf; Tobacco through the Centuries" Boston, Little, Brown (1952)

A large number of home garden hobbyists intend to grow and propagate tobacco plants in their backyard garden either for ornamental/hobby purposes or for personal uses like smoking. In fact, tobacco plants are very easy and flexible to grow when compared to a number of other hardy garden plants. While growing tobacco is an easy process, it may be quite cumbersome and time consuming to harvest, cure and age ripe tobacco leaves.

Tobacco is a plant that belongs to the nightshade family. Under scientific classification, plant experts place them under a family classification called *Solanacea* that includes many other plants like tomato, pepper, eggplant and a number of other plants. Tobacco's scientific name is *Nicotiana*, and almost all commercial varieties of tobacco belong to *tabacum* species. The *rustica* varieties were used extensively by erstwhile American Indians purely ceremonial and religious purposes; farmers in many parts of Asia are still using same variety.

Other species of Tobacco are also used as ornamental plants throughout the world. Historical chronicles suggest that Tobacco has been cultivated and used in the American continent. American tribal people cherished exotic and fragrant nicotine content of *Nicotiana tabacum* and *Nicotiana rustica*. Wild Tobacco like *Nicotiana rustica* has about 15 times more nicotine than other varieties.

Now, is it possible to grow such a legendary plant in your home garden? Yes, It is possible grow and propagate this wonderful plant in your backyard. Tobacco requires very little attention and care compared to other hardy and difficult ornamental plants. This little handbook provides you very easy to understand and clear instructions and suggestions. This e guide will also provide you a number of practical instructions, growing and maintenance tips, harvesting and curing methods.

Tobacco is a crop riddled with a number of interesting stories, legends, and commercial values. Tobacco is also a plant that is associated with a number of controversies and realities, including a number of health hazards and dangers. One of the most important commercial crops of the world, Tobacco is an all season crop in a number of tropical countries like India, Pakistan, Egypt, Uganda, China, Nigeria, Ghana, Tanzania and Vietnam. Tobacco is also a commercial crop in countries like USA, Mexico, Brazil, Ecuador, Guatemala, Honduras and El Salvador.

Different Types of Tobacco

Many varieties of Tobacco exist in the world and people use these Tobacco varieties for a number of purposes. The type and varieties of Tobacco may vary depending on climate, geography, cultivation practices, methods of fertilization, planting time, harvesting methods and curing systems. The usability and quality of the final products depend largely on these factors and variables.

Here are few of the most common varieties of Tobacco grown and used in the world:

Virginia: Virginia variety is possibly the most famous and widely used Tobacco cultivar in the world. Virginia Tobacco accounts to more than 60% of the Tobacco production in the world. Virginia Tobacco is mild and sweet in its composition and it possess a large amount of simple sugars. Virginia Tobacco can blend very easily with all other Tobacco varieties and it lights up very easily within short time. Pure Virginia Tobacco provides you the best type of flakes, and is medium in overall strength and taste. In the realm of Tobacco, Virginia means purity, sweetness and exquisite taste.

Best known commercial Tobacco brands:

- Dunhill's Light Flake cigarette
- Marlin Flake cigarette
- A&C Petersen- Blue Caledonian Flake

Burly: If you are a pipe smoker, you will definitely know the Burly variety of Tobacco. It is the second most popular and well-known Tobacco in the world and its superb leaves are quite famous to make pipe tobacco blending. It has very little amount of sugar, is drier and possess a superb and full-blooded aroma. Burly can come very hand as a blending tobacco because it can absorb the flavorings very easily. Burly tobacco burns in a slow and gradual manner and its smoke is quite cool as well. Mixing it with other varieties that burn very quickly will provide a harmonious effect to the mix.

The scientific terminology for Burley is "air cured". You can air cure this variety in large open barns, by using the natural airflow, for a period of two months. The color ranges from light brown to mahogany.

Most of the US and Danish Tobacco companies use Burly to make their products. Some of the well-known Burly trademark products are Blue Edgeworth, Old English and Half-and-Half. Apart from these brands, Burly is also the main additive in many of the Danish McBaren brands.

Spice: Spice type of Tobacco is not exactly a species of Tobacco, but a catchy blend of different varieties of Tobacco used to bring a different flavor. A Spice blend of Tobacco may include Oriental, Latakia, Perique and Kentucky. English Tobacco companies just love to use a Spice blend of Tobacco.

Oriental: Who does not like the magnificent flavor and taste of Oriental Tobacco? Oriental Tobacco is a close variety of Tobacco those are endemic to countries like Turkey, the Balkan countries, and erstwhile Russian republic nations. Well-known types of Oriental Tobacco are Izmir, Samsun, Yedigöze, Cavella and Bursa.

Tip: Typical Oriental Tobacco has a dusty, dry and slightly sour aroma. Exotic cigarettes of Egypt, Lebanon, Jordan, Libya, Syria and Tunisia contain various amounts of Oriental Tobacco.

Latakia: A unique Tobacco variety like Latakia is the product of a special curing process that involves fire curing of leaves over controlled embers of aromatic woods and fragrant herbs. Latakia is a special Tobacco variety of Cyprus and Northern Syria and named after the port city of Latakia. Typical curing processes involve drying in tightly closed barns for a month and later smoke curing it under controlled conditions. Smoking process involves hanging dried leaves over fires of oak and pine; this process is quite delicate as it involves adding a very thin layer of smoke over the dried leaves. Too strong and harsh to smoke as it is, it's used as a special "condiment", particularly in English, Balkan, and some American Classic blends.

Fact: Latakia gives a very rich, thick and heavy taste that is quite smoky in its taste and flavor. A number of traditional English blends invariably contain a small portion of Latakia variety. A typical English blend has Latakia in proportions of 50% or even higher. However, these blends tend to be very strong or harsh as they burn quickly and dry out a large portion of mouth and throat.

Here are some famous brands of cigarettes made from Latakia Tobacco:

Dunhill:

- Dunhill 965,
- Early Morning and
- London Mixture Dunhill

Rattray:

- Red Rapperee and
- Black Mallory
- Seven Reserve
- Bengal Slices

Perique: This specialized Red Burley tobacco is endemic to a small town called St. James, Louisiana near the city of New Orleans. It is a special, rare, slow burning, harsh-tasting tobacco variety liked by tobacco connoisseurs of the region. It is a costly variety of tobacco and its market value is quite high.

The curing procedure is almost similar to Burley; however, the curing duration is lesser than that of Burley. The curing process involves placing the leaves in large oak barrels under heavy pressure; high pressure will expel some of the juice out of the leaves and the procedure results in a deeply fermented product. Partially fermented leaves are taken out occasionally for repacking and a repeat re-fermentation process. The whole process lasts more than a year.

Fact: The aroma of this Tobacco is full and harsh almost bordering on a deep flavor. Its nicotine is full and overwhelming. Its full flavored taste will not allow it to be used as a single ingredient; manufacturers use this type of Tobacco as a blend (at 5%) in their products. The most common Tobacco variety blended is Virginia. Considered the truffle of pipe tobaccos, this Tobacco is used as an important component of a number of blended pipe tobacco types, but many consider it too strong or harsh to be smoked pure.

Kentucky: Kentucky is a very fine and specially treated Burley Tobacco produced and cured in Kentucky. However, this is Tobacco cure by using controlled flames of fire. Its aroma is very light unlike Latakia; Kentucky is a Tobacco variety with an excellent and aromatic flavor. On the other hand, its nicotine content is very high and one needs to use it in a minimum quantity.

Havana: Havana is a world famous variety of Tobacco. This brand of Tobacco forms a small part of Virginia blends and mixes.

Cavendish: Cavendish is actually a method or a process of treating and curing Tobacco. English Cavendish variety uses fire cured Virginia Tobacco that is later steamed and stored under high pressure for further curing and fermentation. This process may take a number of months. Cavendish tobacco originated in the 16th century, when Sir Thomas Cavendish, discovered that by deep dipping tobacco leaves in sugar solution, it produced a milder and mellower smoke. A typical mix of dipping ingredients would be around 54% tobacco, 22% water, 8% alcohol and the rest small amounts of sugars and specific flavoring compounds.

Though Burley and Virginia are the common varieties of Tobacco used, you can also use all other varieties of Tobacco. The all-original English Cavendish variety is a byproduct of Virginia variety and it is very mild in its nature, dark and black in color, and it is so easy to heat it under very high pressure. However, recent innovations in processing methods ensure that Cavendish is highly flavored and harsh. This special flavoring is called “casting” when manufacturers add a significant amount of additives to the original tobacco. Special blends of Cavendish Tobacco come in a number of forms like cherry, vanilla, rum, chocolate, strawberry, raspberry, mint, bourbon, walnut, and coconut

Some of the well-known blends of English Cavendish Tobacco are:

- Rattray Dark Fragrant
- Rattray Black Virginia Plus
- McConnel’s Maduro

Choosing Good Tobacco Seeds

If you are planning to grow Tobacco in your backyard garden, you may find it very difficult and cumbersome to find tobacco seed of your choice as most of them are grown only in the tobacco cultivated regions. The seeds that you choose may not really grow and thrive in your backyard garden. What grows in one particular area may not even germinate in your garden. More often, it is very tough to make these seeds germinate and grow in your garden container. Well chosen and picked Tobacco seeds may retain their germinating viability for many months, when you store and maintain them under optimal conditions.

Commercially available varieties of Tobacco may not be of much use to a home gardener because most of them possess species-specific traits and characters that fit commercial objectives. However, you can find a number of plant-seed nurseries that sell high quality Tobacco seeds to home gardeners. A simple search on internet will provide you a decent database of Tobacco seed suppliers.

Fact: Tobacco is essentially a tropical plant that grows very well in tropical areas near the equator. However, you can grow Tobacco in your garden by providing it optimal growing conditions with right temperature and fertilization.

Tip: Are you living in a temperate region where the average annual temperature is below 20 degrees Celsius? If yes, you may need to use a protected area to make your seeds germinate and sprout.

Tobacco seeds are very tiny and you can find as many as 300,000 seeds or more per ounce weight. Tobacco seeds are blackish to brownish in color. These seeds are very sensitive to excessive moisture and open sun light. Ensure that you are storing them in a dry and cool area free of sun light and dust.

Tip: Before buying Tobacco seeds, ensure that the pack comes with a certificate of authenticity for both quantity and quality.

A typical pack of Tobacco seeds exhibits a number of characters like:

- Expiry date
- Lot number
- Certificate from a competent authority
- Possible germination percentage
- Seed variety and its name
- Germinating instructions
- The image or photo of the plant
- Growth region

The price of Tobacco seeds vary among different suppliers while the variety may change from region to region. Ensure that you are buying a seed pack suitable for your home garden.

Caution: Make sure that you are buying disease and fungus free seeds that are healthy and robust. Though pellet form of seeds is good for uniform sowing, there may be possibility fungal infections in them.

Varieties of Tobacco seeds

Virginia: Virginia is possibly the most preferred and widely cultivated Tobacco variety in the world. Virginia Tobacco seeds are darkish in color and round in shape. These seeds are tiny and each ounce of seeds may contain as many as 300,000 to 350,000 seeds. A good stock of Virginia seeds may show very high germination rate and with careful germination methods, the rate of sprouting should be more than 90%.

Havana: Just remember the delicious aromatic flavor of Havana Cigars! Tobacco lovers simply adore the magnificent taste and feeling of a Havana Tobacco product. However, it may just be difficult for you to germinate Virginia Tobacco seeds in your home garden especially if you are from a cold and temperate region. Virginia Tobacco seeds are dark to brown in color while the size of individual seeds are little bigger than Virginia Tobacco seeds.

Monte Calm Yellow: Though similar to Virginia plants, Monte Calme has thinner leaves with pointed ends. It is a mild type of Tobacco and it forms a wonderful blend with Havana Tobacco. Monte Calme seeds are almost similar to Virginia seeds in terms of size and color.

Monte Calm Brun: These Tobacco plants are special and original as far as their usability factors are concerned; it is an excellent tobacco for your pipes. Monet Calm's leaves are quite large, thin and voluminous.

Maryland 609: If you are a smoker and like to smoke only the best, then Maryland 609 seems to be the best Tobacco plant for your garden. This Tobacco grows very tall to a height of 2 meters and its leaves are very easy to cure and ferment. Seeds are very small and difficult to handle.

Connecticut Shade: One of the tallest Tobacco variety, this is a perennial favorite Tobacco variety for home gardens. It is thrilling to see this tall plant growing so profusely in your backyard garden! This Tobacco plant works wonderfully as a binder and a cigar wrapper leaf.

Connecticut Broadleaf: A fine Tobacco variety can act as a very good blender along with Havana Tobacco to make exquisite cigars! A prolific Tobacco variety likes profuse sunlight for maximum sunlight. You may need to plant its seeds very early so that you

can grow it to its maximum height. When pruned, Connecticut Broadleaf can stop growing high and instead grow girth to yield the best nicotine content.

Pennsylvania Broadleaf: It is a greenish plant, grown especially as a cigar filler and binder. It can grow very tall to a height of about 6 feet. Pennsylvania Broadleaf provides very broad, greenish colored cured leaves that work very well as cigar filler or as wrapper.

N.rustica: It is the good-old Tobacco of the Red Indians, who made it a mandatory necessity for a number of ritual and religious purposes. It produces bright yellow flowers that emit an exquisite aromatic flavor. However, germinating its seeds is quite difficult if you are living in a cold and temperate area. If you buy the seeds in the month of April, you can try to germinate the seeds sometime during the end of April to have an early crop before the winter frost sets in during late November.

General tips:

- The soil that you use in the container must be free of seeds of weeds and pests.
- If you want to grow just a few numbers of plants, then you can purchase a small amount of excellent seeds.
- Sprinkle the seeds on an even soil surface taking care to see that they are not too deep inside the soil surface.
- Ensure that you are spraying the water using a mist sprayer. Never ever, pour the water directly over the seedbed.
- Avoid excessive watering as it may lead to growth of dangerous fungus and mold.
- Ensure that you are sowing the seeds early during the spring, sometimes during the month of late April or early May.
- If it is too cold during April, you can wait for some more days until the frost conditions subside to warm conditions of spring.
- Fine sand is an excellent medium to mix Tobacco seeds. For every part of seeds, mix four parts of sand so that you have a very fine seed mixture.
- When the outside temperature too cold, then you may use containers to sow the seeds for better germination and survival.
- Use a heat propagator to provide a warm temperature for the seeds to sprout and germinate to the maximum possible extent.
- The most optimum temperature for maximum germination is 21°C
- You may also need to provide an optimum amount of light to allow for maximum germination.
- Usual germination time is a week or ten days.
- Tobacco seedlings are very tender and delicate. Handle them with maximum care taking care not to damage the tiny leaves or weak roots.
- Tobacco seedlings need immediate transplantation into a bigger and spacious container to allow optimal growth.

Germinating Tobacco Seeds

As is the case with any other seeds, even Tobacco needs proper care throughout the process of germination and transplantation. You are likely to face some sort of problems related to germination especially when you live in a cold and temperate region. Frost can seriously impair Tobacco seeds' ability to germinate and thrive in the soil. Thus using a convenient greenhouse like tools will become imperative to ensure full germination and growth.

Tobacco seeds require a temperature of 7-80 degree F for proper germination and growth.

Tip: Ensure that you are keeping Tobacco seeds moist all the time to retain their viability and germinating ability.

Once Tobacco seeds germinate, you will need to maintain and manage them in the nursery until they are about 3 inches in height. Weaning your plants to withstand harsh exterior environment should be your important goal. You may also need to harden the seedlings very slowly to make them fit enough to adapt to the external weather.

Fact: Tobacco plants are very slow growing and you may need to manage them for a long time until you get your crop. However, Tobacco plants are quite hardy and they can even grow as long as two years under controlled growing conditions.

When the external temperature is very low and frosty, you may need to provide artificial heat in the form of lights to ensure better germination and growth. You can use a convenient seedling or germination tray to sprout Tobacco seeds. The best place to keep the seedling tray is on an open windowsill or on top of a refrigerator.

Tips: You may wish to buy pair of thermometer to check both soil temperature as well as the ambient temperature. These little tools will assist you in identifying any anomaly in the external temperature.

Caution: As Tobacco, plants are endemic to semi-tropical and tropical regions, their requirements for ambient light are quite important and demanding. Thus, you may need to set full spectrum lighting to cover the perceived deficiency during the night. Christmas lights and fluorescent bulbs are the best form of light.

You never really sow Tobacco seeds into the soil, rather you just sprinkle them on top of the soil

However, Tobacco is an easy plant to grow even in cold and temperate areas provided you provide them the optimum growing conditions. Tobacco seeds are very tiny and small. You will need to take care to see that you are not planting the seeds very closely and one above the other. *You may need to plant Tobacco seeds indoors in the seed tray at*

least 4 to 6 weeks before the last frost date. Ensure that the soil mix that you use is free of pests, bacteria and pollution; in fact, the soil used for germination should be sterile and pure. Sprinkle the seeds evenly over the surface of the soil mix taking care to see that the layer is uniform and thin. Take care to see that the seeds are quite moist and wet during the process of germination.

Danger: Never ever, cover the seed mix with any soil, as seeds need light and air for proper germination. Covering the seedbed with soil will impede seed's ability to absorb light and air. Too much soil over the seedbed will obstruct normal germination.

Under normal and usual circumstances, Tobacco seeds will begin to germinate within 10 days after sowing. Some varieties may take two or three weeks to germinate depending on the environmental conditions.

The soil surface should be damp and not too soggy with excess water. On the other hand, a dry seedbed will also result in very poor germination and survival. Never pour water with a container because the force of the water may result in disturbance of soil bed eventually resulting in uprooting of the seedlings.

Transplanting Seedlings:

Soon after germination of seeds, the next important step is to transplant them into a suitable, large sized container like a transplant tray or a big sized pot. Under controlled conditions of germination trays, the seedlings will become large enough to be moved into bigger sized containers.

Note: Transplantation is a delicate process and a big necessity; ensure that you are transplanting the seedlings after three weeks from date of germination.

Tip: You can wait until the size of the largest leaf reaches the size of a coin or a dime. It is easier to handle such seedlings without breaking the stem of the plant.

Before transplantation, make a series of small holes on the surface of the soil bed in an orderly manner. Insert the seedlings carefully into the holes taking care to see that the roots are firm and unbroken. Now, cover the gaps with a little bit of soil and flatten the surface with your finger. Soon after transplantation, fertilize the plant with a starter fertilization solution; ensure that you are using a small dropper to apply the fertilizer.

More Tips:

1. Growing Tobacco in your home is legal and you may need to get a mandatory license if you want to sell it outside.
2. Do you know that just one, single plant of Tobacco can produce thousands of seeds that is enough to cover acres of land?

3. Ascertain that seeds germinate within the month of March; this will ensure that the plant will grow healthy for subsequent transplantation during peak summer months.
4. For proper germination, Tobacco seeds need a temperature of 23-25 degree C. Once they germinate, you will need to provide a minimum temperature of 13 degree C.
5. You can plant about 50 seedlings in an area of about 1X8 m of area.
6. Just one Tobacco plant can yield almost 100 gm of tobacco that is enough for 100+ cigarettes.
7. Tobacco can mature and mellow with age just like wine!
8. Are you using a greenhouse to grow your Tobacco plants? Another use with a greenhouse its role as a curing chamber! You can cure and ferment Tobacco in your greenhouse.
9. Almost all soil types suit Tobacco cultivation. However, you may need to water the plants at least once in a day.
10. Tobacco plants can grow to a height of about 6 feet. Mature plants will bloom beautiful pink flowers.

Pellet Tobacco Seeds:

Pellet form Tobacco seeds are among the most innovative forms of nursery seeds. Coated with an organically certified pellet clay coating, these seeds are extremely durable and useful; these seeds can provide you the best possible germination rates as well.

Advantages of pellet-form Tobacco seeds:

1. Coating does not contain any synthetic materials
2. It is durable and long lasting
3. It is user friendly and easy to use
4. It is easy to manage and administer
5. It has excellent uniformity and consistency
6. The seeds have excellent porosity and it can help easy exchange of oxygen, air and other nutrients
7. Almost all certifying agencies and firms approve it.
8. Pellet seeds are easy to use and store

Soil Types for Growing Tobacco

The type and quality of nursery soil for growing Tobacco seeds are very critical and important. Bad quality and pest-infested soil could be very dangerous and detrimental to Tobacco seeds. To enable Tobacco seeds sprout in home containers, you may wish to prepare your own garden soil that is free from pests and insects. Here are some tips and suggestion on how you can germinate and grow tobacco plants in your home garden

- Tobacco thrives very well in a sunny location. Ensure that you are providing at least 6 hours of sunlight for proper and healthy growth.
- The soil used for germination and growth should be well drained; poor drainage may result in very poor growth and death of seedlings
- On the other hand, excessive draining could result in shortage of water; drought conditions may impede the growth and survival of both seedlings and plants.
- Lack of sunlight will result in curly and weak plants as well as thin leaves.
- Tobacco plants used for making cigars need some amount of shade to preserve their leaf characters and desirable attributes.
- Never ever, use soil infested with nematodes and insects.
- Keep changing the soil every year to ensure better soil chemistry and fertilization; it is desirable to rotate the crop system from year to year. Never use crops like tomato and pepper on the same soil. Viruses and bacteria may attack tomato, pepper and tobacco with similar mode of destructive action.
- Soil pH of about six will ensure best growth of tobacco plants; if you want to raise the pH of the soil, dolomite is possibly the best option because of its high magnesium content.
- pH values in excess of 7 may adversely impact the growth of tobacco

Most suitable soil mix for growing tobacco could be:

Equal parts of black and red soils along with finely sieved sand
+
some parts of organic mulch
+
a dash of finely powdered clay
+
Few grams of micro-nutrient mixture
+
Basic fertilizer mixture depending on the weight of soil used

Planting Tobacco

Tobacco seedlings are transplantable to an open area when they reach the stage in about 3 weeks. A transplantable tobacco seedling will have two well formed leaves along with a healthy root system. You can transplant tobacco plants with their bare roots with out any need for any soil attached to the root system. The method that you use to transplant the tobacco seedlings is entirely different than the one used in the open fields. If you are planning to plant tobacco in your backyard garden, you may like to use large planting containers or flats. Ensure that you are choosing a deep container to allow for proper development of root systems.

Tobacco plant has a shallow rooting system with one mother root going deep inside the soil.

Planting tobacco seedlings on soil bed requires prior preparation of soil and the ground. First, you may need to assess the number of plants you are planning to transplant on the soil bed. Obviously, a home garden can hold just a few numbers of plants unless the area is too big. If you are planning to grow tobacco plants near a window sill or in a greenhouse, the techniques used for plant growth is entirely different than the one used for open field.

Tip: You will need to control all growth parameters like temperature, moisture and plant nutrients in case you are planning to grow tobacco in a greenhouse.

Caution: Transplantation is a transition process when the plant tries to adapt to the new ambience by slowly absorbing nutrients and water. In fact, this is a very critical stage in the life of the plant.

Tip: Transplant shock is a condition when the leaves start to wilt and become yellowish in color. However, this is a temporary phase in its life and the plant will bounce back once the root system starts to absorb water and nutrients. The plant will start to grow and flourish within a week. If you are planning to grow tobacco in a greenhouse or indoors near a window sill, then you may need to harden your plants by feeding with a well balanced liquid fertilizer. Ensure that the plants are not weak and spindly in nature. You can even reject those plants that are lethargic and short of quality. A week's hardening will suffice, but consider two weeks of hardening to be sure of high quality transplants.

Fact: As far as possible restrict your tobacco gardening to just one variety. Tobacco is a self pollinating plant with an ability to fertilize its own flowers with the help of insects, bees and moths. Planting a single variety tobacco will ensure production of high quality seeds, with a very high degree of vitality.

Methods to transplant into garden:

Tobacco is a very heavy feeder and its needs lot of nutrients and water for optimum growth. Its heavy feeding nature makes it imperative that you change the soil used for growing tobacco every year without fail. In fact, you can choose two different areas for growing tobacco; it is possible to alternate your tobacco crop from year to year by planting in a specific location. Tobacco also requires large amounts of nitrogen and potash for proper growth. Feeding plants with good and well balance compost will provide all the essential nutrients. Alternatively, you can also use good garden fertilizer mixtures that contain specific quantities of all nutrients.

Preparation of plant soil bed:

Outdoor backyard garden planting of tobacco plants require a well prepared soil bed. Choose a well lit and sunlight rich area in your garden and demarcate the bed; choosing a rectangular area will provide you better results when compared to a square. A typical soil mixture will contain equal parts of red and black soil along with finely sieved sand. Add small parts of organic compost and a sprinkle of garden fertilizer mixture. Now, raise the plant bed by hoeing and heaping the soil. This will ensure that the soil will have a good drainage property.

- Now, space the tobacco seedlings 3 feet apart in the row and you can space the row about 4 feet across to facilitate better growth.
- Take a small garden hoe and make a series of holes at predetermined spacing of 3x4 feet.
- Insert the tobacco seedlings slowly into the hole taking care not to damage either the leaves or root system.
- By holding the plant firmly with your fingers, slowly fill up the gap with garden soil taking care to expel the trapped air.
- Firm up the area of planting with the finger so that plants stand in an upright position
- Once you transplant the seedlings, water the entire bed with liquid fertilizer enriched solution thoroughly. You will need to water the plants everyday either in the morning or in the evening, when the sun is low down in the horizon.
- The roots of tobacco plants can grow very quickly when you provide them optimum growing conditions. The root structure of tobacco is shallow with thousands of small hair like roots that grow very close to the surface.
- Never ever, disturb the soil surface either by hoeing or tilling until the plants become tough and robust.
- Keep the entire area of the bed free from weeds and pests.
- Once the plants are strong enough, you can perform a simple hoeing operation by gently arranging the soil near the base of the plants.
- Tobacco leaves are very long and broad in their structure. As you water the plants, the water will trickle down slowly and pool around the bottom. Ensure that you are providing a fine mist of water on the leaves.

Maintenance and Fertilization

Like any other crops, even tobacco plants need periodic crop maintenance and fertilization to enable full growth, flowering and harvesting. Pests and insects could pose a big problem to the plant, while insufficient soil nutrition will result in poor growth and subsequent low harvest.

Here are some of the most common problems associated with the tobacco plants:

1. Uncontrolled growth of weeds and grasses around the plants
2. Infestation by soil nematodes, stem borers, leaf cutters, caterpillars, blight viruses and tobacco viruses.
3. Poor growth accompanied by wilted leaves
4. Stunted growth and retarded root system

Tip: If you are purchasing small tobacco plants from a nursery for planting purposes, you should be aware of any individual plants that show signs of mottling, dwarfing, stunted growth, diseased and discolored leaves. Avoid buying tobacco plants that show visible signs of yellowish and discolored leaves as they may be affected with a number of diseases.

As an avid gardener, you should follow the same set of procedures suggested for greenhouse gardeners while handling other garden plants. The same principle applies to your own tobacco nursery as well! If you see any diseased or mottled plants, separate them out and destroy them. You may also wish to use some intuitive control methods like “rouging” to remove diseased plants from the lot. When you observe signs of pests and insects, take care to remove them from the plant.

Be sure to wash your hands thoroughly with an anti-septic solution.

Caution: The most common and frequent method of transferring viruses and pests from one plant to the other is a set of highly contaminated tools and utilities.

Here are some simple tips that you need to follow while transferring tobacco plants:

- When you are transplanting seedlings from the nursery to the soil bed, wash your hands thoroughly with soap and water.
- If you are a smoker, refrain from smoking until you finish transplantation.
- Before transplanting seedlings, ensure that you are using cleaned tools and utilities. Dipping tools in a mild bleach solution may not be effective against virus contamination. Virus is a serious problem in tobacco plants.
- Any seedlings that possess visible symptoms of tobacco mosaic virus must be removed and destroyed.
- You may also need to burn all plants that show signs of diseases and disease like symptoms.

Several insects and pests could also pose big problems to tobacco plants. The most common pests and insects expected during production cycle could belong to classes of worms like budworms, aphids and hornworms. Cutworms are possibly the most common works that trouble tobacco plants. On the other hand, several diseases can also affect tobacco plants. Disease organisms may include those that attack other plants or they may be very specific to the plant themselves.

Note: Identify the disease or pest problems before they damage your tobacco plants. Consult a qualified garden expert to seek solutions for the problems.

Common diseases and pests that affect tobacco plants:

Cutworms are an occasional pest of tobacco in seedling and transplanting beds. You may need to remove the weeds from the bed to avoid infestation by this worm. Some gardeners use *Bacillus thuringiensis* (BT) to control the pest.

Flea beetles are often a troubling pest in seedling and growing beds. Bed sterilization, as well as controlling vegetation around the bed can control the infestation. You can also cover the plants with tobacco cloths or similar covering agents to physically prevent the pest attacking the plants

Tobacco Mosaic Virus: It is a serious tobacco pest that can kill your plants. Most probably, this infestation starts right in the nursery bed. Proper sterilization of seed bed and garden soil is the first right step towards complete control. You can also try other methods like washing your hands and garden tools with a good anti-septic solution before and after transplantation. You can also stop using tobacco products like smoking cigars, cigarettes and pipes while working with tobacco plants.

Tip: One simple organic and home made controlling method is using skimmed milk as a treatment to prevent Tobacco Mosaic Virus disease. A basic solution of 5 liters of milk in 100 liters of water works fine for mist spraying over the plants. Prepare the required solution by mixing the required quantities of skimmed milk.

You can also use the following maintenance methods to protect tobacco plants:

- Rotating the tobacco crop to a new location every other year
- Provision of good air, sufficient sunlight, water drainage and complete nutrition
- Creating smaller transplanting beds so have better management
- Early sowing during the month of April
- Reducing plant densities
- Proper watering and fertilization
- Safe and proper transplantation
- Periodic management methods to remove pests and disease organisms
- Removing weeds and wild grasses from the area.

Additional Management Tips:

As a gardener, you may want to grow tobacco plants for a number of purposes such as:

- Ornamental purposes, for growing flowers;
- Plants grown to make cured tobacco should be topped and pruned off as soon as the flower buds form

Tip: When you prune the top of the tobacco plants, you will make them grow larger, profuse and thicker

Priming: It is a simple procedure that allows you to pull off the lower leaves of the tobacco plants as soon as the leaves start yellowing and withering.

Suckering: It is another process that allows you to pull off new buds forming on the main stalk. This will prevent plants from branching outwards.

Topping: It is the process of breaking off the top portion of the tobacco plant to help prevent it from producing flowers and seeding.

Note: These simple methods will produce broader, healthier and supple tobacco leaves.

Tips for fertilization:

Tobacco plants need an excellent fertilization regimen to grow and thrive better in your home garden. Supplementary fertilization will ensure not only better growth but also healthy root system, broad leaves, disease free stems and enhanced harvest. Here are some of the common nutrients that a tobacco plant needs for better growth:

Nitrogen: Nitrogen is an essential nutrient needed to provide greenish hue to the tobacco. However, you will need to be very careful while applying an excessive amount of nitrogen as extra amounts of nitrogen may accumulate in cured tobacco leaves.

Phosphate: You will need to manage this nutrient with extreme caution to avoid excessive amounts of phosphate in tobacco leaves; extra amounts of phosphate can adversely influence the burning properties of cured leaves.

Potash: A high level of potash is quite useful in preventing some tobacco diseases like angular leaf spot and leaf spots.

Magnesium: Inadequate levels of this nutrient may result in a condition called sanding down and this is a nutritional disorder of tobacco plants. You will need to incorporate required amounts of Magnesium to make plants better.

Tips: Chlorine enriched fertilizers like Potassium chloride may seriously affect tobaccos ability to provide expected burning quality.

Note: Ensure that a pH level of 5.5 to 6.5 is maintained in your garden soil. Supply a calcium level five times than that of other nutrient, magnesium. At higher pH levels, tobacco plants are more likely to catch black root rot disease.

Fact: Fertilization process for tobacco is almost similar to the one used for crops like tomato, pepper and potato. You may also need to apply the fertilizer solution in split doses and two times a day, in the morning and evening. Never apply too much fertilizer at the same time as there will be an uncontrolled growth in some plants that may eventually dwarf other plants.

Organic compost Vs Garden fertilizers:

More often people tend to get confused as what to apply to their tobacco plants. Traditionally speaking, applying compost is a safe solution provided the compost applied to the plant does not contain pests, insects and disease bearing organisms. Organic compost will maintain the soil chemistry as well as its condition. However, tobacco is a voracious feeder and the quantity of compost applied may be too insufficient. Hence, you may need to add additional fertilizer in the form of garden fertilizer that contains a range of balanced nutrients.



Harvesting Tobacco

If you are planning to harvest a good crop of tobacco in your home garden, you may wish to adapt very high standards of cultivation. There are a number of important issues that you need to keep in your mind for a high quality cured leaf.

Tip: If you want to harvest priming type of tobacco, then you will need to wait until such a time when the leaves turn greenish-yellow in color.

Lower part of the stalk contains more amount of moisture than the upper stalk plant. Thus, you will need to harvest tobacco leaves when they are completely dry. You can hand harvest the lower leaves of the plant to ascertain a good quality in the leaf. Hand harvesting will provide you complete control on what part is harvested; this simple procedure will allow you to harvest the leaves with out damaging them.

Time to harvest:

Determining the exact time to harvest tobacco leaves depends on a number of conditions such as:

1. The maturity of leaves: Mature tobacco leaves will appear thick and rough. The central stalk portion of the leaf will be significantly brow in color as well.
2. The color of the leaves: Mature and harvest ready tobacco leaves are yellowish in color. Mature leaves turn brown with each passing day.
3. The degree of shrinkage: Mature tobacco leaves shrink by a marked degree and the leaves tend to droop with its own weight
4. Moisture content: Mature leaves will not have much moisture during harvesting. A simple technique to find out if too much moisture exists in the leaves is to tear a small portion of the leaf, make a small ball and press it between your fore and index finger. If there is too much moisture, you can feel a watery residue on your fingers.

Tip: The type and the condition of tobacco leaves largely determine the final quality of cured leaves.

Hobby gardening of tobacco may provide you joy and thrill of growing and making tobacco flower in the home backyard garden. On the other hand, if you are planning to grow tobacco for curing, then it may be a bit difficult to raise tobacco plants just for curing purposes. Ageing tobacco leaves is a lengthy process involving more than two years of hard work. However, some enthusiastic home gardeners have developed a series of simple techniques to age cure tobacco leaves in their homes.

You can easily harvest tobacco leaves either by removing leaves from the talk or by cutting the stalk off from the ground level up. In the second method, you may need to

hang the entire plant upside down in the curing chamber for curing and maturing. When the leaves cure after some time, you can remove the leaves from the stalk by plucking them out. Tobacco leaves may not mature and become yellow at once and together. You may need to harvest the leaves selectively one by one by looking at their color.

Note: It is possible to harvest leaves soon after topping operation and when those leaves show light yellow discoloration. If you want to allow the entire plant for later harvesting, you can allow a time period of 4 weeks after topping operation. However, the leaves at the lower portion of the plant may deteriorate and fall off in this period.

Harvesting and curing tobacco is a difficult exercise. Your time schedule and plans for harvesting tobacco leaves depends on a number of issues and scenarios, including the variety and type of the tobacco grown on your garden, the age of the plant, the of the water content at harvest time and the position or the location of the leaf on the stem.

Simple Methods for easy harvesting:

- Most common harvest period is soon after 60 days of transplanting seedlings
- Always start at the bottom of the plant and go on plucking the leaves as when they show signs of maturity.
- Each leaf in the plant has its own specific chemical characteristics. The leaf at the bottom of the stem will always be better matured chemically when compared to the top most leaves.
- Ensure that you are harvesting your tobacco leaves in the morning soon after the drying up of morning dew; this simple process will prevent additional moisture accumulating on the leaves.
- It is also possible to pick up leaves in the afternoon when the sun is in the horizon.
- Make small holes on the tobacco stem for stringing on the sticks. You can use a spear to thread the stalks on to the stick.



Drying and Curing Tobacco

Tobacco curing is perhaps the most difficult and sensitive operation that needs considerable skills and techniques of during and subsequent curing of fresh and wet tobacco leaves. The final quality of cured tobacco leaves is very critical to tobacco curing plants because the factors of aroma, fragrance and taste play an important role in deciding the final selling price of cured tobacco leaves. Curing tobacco leaves has two main goals that eventually decide the quality of the finished product.

1. Curing tobacco leaves is a fine process of controlling both temperature and humidity parameters that will eventually lead to the development of desirable changes in chemical and biological properties.
2. To provide the best quality to the dried leaves by introducing well calibrated drying process.

Tip: Curing is much more than just drying off the wet leaves. It is a process of changing or transforming a number of physical and chemical characteristics in the wet leaves so that the final product is of very high quality and standard.

Two important phases or stages of tobacco production are harvesting wet leaves and curing them to get tobacco leaves. Traditionally, harvesting and curing of tobacco leaves took almost 200 hours per acre of leaves especially when people used the age old stick type barns. However, highly advanced machineries and curing tools ensure that you spend just 50 hours per acre. However, one will need to arrive at some important logistical decisions before using such methods.

1. Initially, you may need to decide the type of harvester to be used and check, if the existing barns are enough for the operation.
2. Later, finalize if you need to clean the priming from the plants or just leave them there.

Harvesting is perhaps the most important phase of tobacco curing and the final quality of cured leaves depends upon the time of harvesting as well as the condition of harvested leaves. Fully ripened tobacco will provide you the best quality cured leaves, while immature and green leaves will end in very poor quality dried and cured leaves. Under normal growing conditions, green tobacco leaves will ripen very slowly at the rate of two to four leaves per plant per week. It means that you will need to harvest just 4 leaves per plant for a period of five to seven weeks.

The final quality and desirability of tobacco in terms of maturity and harvest rate depends on a number of factors that may include:

1. Proper application of balanced fertilizers
2. Proper mulching methods
3. Sufficient time for ripening of leaves.
4. Proper coloring of wet leaves from light yellow to golden yellow color.

5. Amount of sunlight provided throughout the season

Tip: To get the quality leaves, ensure that you are harvesting only mature and ripened leaves. Fully matured leaves show a slight yellowish color and slight wrinkles between the veins. Fully ripened leaves can detach very easily from the stalk of the plants. Fully matured leaves can cure very easily when compared to immature leaves. You will get quality cured leaves when you allow the wet tobacco leaves to ripen fully in nature and in the field.

Fact: There are four different types of maturity in tobacco leaves: premature, mature, ripe and over-ripe. The final quality of cured tobacco leaves depends on the ripening stages of wet tobacco leaves.

Here are some of the qualities of cured tobacco graded depending on the ripeness of tobacco leaves:

| | |
|----------------------|---|
| Ripened stage | Best color, overall quality, weight and pleasing aroma |
| Over-ripe stage | Bad color, poor yield, poor final quality and average selling price |
| Premature and mature | Very poor quality cured leaves, bad color and aroma. |

Premature tobacco is not recommended for drying and curing. When you mix harvest tobacco leaves at a time, you will need to segregate them depending on their ripeness.

Loading is a process of introducing the wet leaves into the curing barns. Bulk curing barns have been used until now in a number of countries. However, you will need to load the container in a uniform manner for better drying. You can use racks, big boxes and small boxes to load wet tobacco leaves.

Tip: Never ever allow large packets of air into contact with the leaves. Make sure that you are spreading the layers of tobacco in a uniform manner. Too much packing may result in very heavy and compact pots where the curing process may not reach in a proper manner. Also allow uniform and gentle air flow to reach all parts of the container. However, the rate of ripeness will decide how tight tobacco leaves can be packed in the chamber. Choose high quality, straight and upright leaves and pack the chamber at the rate of about 15 pounds per cubic feet. The natural tendency of tobacco is to swell with extra moisture early in the morning and become wilted late in the evening.

Curing tobacco is an ancient art! Several civilizations of the past have fine tuned the art of curing tobacco; ancient Chinese, Indians, Egyptians and Romans are known to have invented a number of methods to cure wet tobacco leaves. Recent advancements in curing techniques have resulted in superior cure quality and excellent aroma. Advanced management skills like controlling temperature and air flow, using harvesting technology and controlling humidity will help you produce the best quality cured leaves.

Curing tobacco leaves has several purposes:

1. Preservation of quality, aroma and flavor.
2. Inducing an excellent color to the final product.
3. Enhance the shelf life of the leaves

Fact: The color of the cured leaves has a lot of bearing on the market value of the final product.

Expert curing professionals strive hard to maintain biological life in the cured leaves, until all biological process is completed during the curing process. A typical curing flowchart involves conversion of starch into sugar, removal of moisture from the leaves and slow drying of leaves to preserve aroma and taste.

While curing tobacco, you will need to inspect and monitor quality parameters like:

1. Temperature
2. Humidity
3. Color

Yellowing is a process that needs very close inspection and monitoring, as an excess amount of air and moisture may lead to mold growth and mal-odor. Dry and wet bulb thermometers will help you record ambient temperature of the barn and the ensuing moisture. Up-draft and down-draft barns ensure that air is circulated in an orderly manner.

The curing process is influenced by a number of factors like:

1. **Humidity:** Humidity level plays an important role in influencing the yellowing and drying processes. As curing intensifies, you can observe a quick curing process and drying. The relative humidity also drops steeply as drying stage reaches its maximum. You may need to exchange and control the air inflow and outflow by using a vent system. When you control the humidity, you can impart a very good color to the cured leaves. However, when you open the vents, you can quicken the drying process.

Tips:

1. *Higher air temperature induces increased drying at a given humidity level.*
2. *At any given relative humidity level, a temperature value of 105 degree F will contain twice the humidity as air at a temperature value of 85 degree F.*
3. *Always use dry and wet bulb thermometer to measure temperature and humidity levels of the curing chamber.*

2. **Temperature:** You may advance the dry and wet bulb temperature by making suitable adjustments to the air inflow and outflow. You may wish to increase the temperature of the chamber by turning the heater to yellow range. Do not raise the temperature suddenly as it may result in charring of leaves.

3. Color: Color is the most important parameter that plays a vital role in determining the overall quality of the cured leaves. In a typical curing season, you may have a number of curing batches running concurrently with each other. To get the best color for the leaves, you may need to make minor adjustments in curing conditions by changing both wet and dry bulb temperatures. Once you harvest each batch of tobacco, the next important step is to create schedules to induce the best possible color to the tobacco leaves. Thick and mature leaves may need more time to dry and cure, while thin leaves will need lesser drying curing and drying time. Tobacco leaves with higher moisture need quicker removal of moisture to avoid fungal infestation and excessive curling.

4. Curing duration: The process of yellowing is different for different sets of leaves. The position of tobacco stalks is also a critical factor. Normal time curing time allowed for priming is around 30 hours, while up-stalk tobacco may require as many as 60+ hours to reach the desired color. Yellowing period can be extended for some varieties of tobacco.

More tips:

1. Take off as much moisture as possible during the yellowing stage. The recommended removal rate is around 20%. A typically cured tobacco leaf will display a yellowish tinge at the leaf tip with slight greenish hue along the main stem of the leaf, veins and the butt. Good cured tobacco leaves show a tendency to tuck and curl with a uniform dash of yellow color throughout the leaf. Once the desired color is achieved, ensure that the rate of drying and heating is increased.

2. Wilting is common before the leaves yellow at an optimal dry bulb temperature of 105°F. However, major wilting takes place at a temperature of around 118 degree F. Wilting results in loosening of tobacco leaves. Soon after complete wilting of leaves, the leaves must be dried immediately. The drying process is very critical because of the extreme sensitive of leaves to extreme temperature changers. Improper drying process may lead to leaves turning brown or scalded. Air flow and drying temperature can influence the curing process in a significant manner. Ensure that the wet bulb temperature is maintained at 100 degree F. Stems of wet leaves need little higher temperature to cur and dry as it contains higher amount of moisture.

Common curing problems:

Curing problems are very common in a tobacco curing yard. Most of them occur because of a number of factors like:

1. Improper packing of containers
2. Wet tobacco leaves that are not fully ripened.

Common problems are:

1. **Soft rotting:** Thicker and heavier lower stalk and lugs are prone to soft rotting. These leaves are close to the wet ground in the field and thus they contain a lot of fungus and mold organisms. Once you move such leaves to the curing chambers, these organisms start to grow and thrive with the ambient temperature and moisture. Fungal rot and bacterial growth can badly damage the overall quality of leaves. Affected leaves display a subtle black color and irregular drying. You may need to decrease the barn rot by operating a fan with dampers turned wide open and by reducing the heat until the surface moisture is completely removed. The entire procedure may take as many as 48 hours.

2. **Sweating:** Sweating is the direct result of over-crowded leaves and inefficient ventilation especially during yellowing and wilting phases. You can speed up the drying rate to prevent sweating. Ensure that ventilation is open during the drying process.

4. **Brown Spot:** Tobacco leaves infested with brown spot should yellow at very high yellowing temperature.

Different types of leaves:

Immature and Slick: Such leaves are short of quality in terms of grain, weight and color. The surface area of such leaves is very smooth, while they lack the required texture as well. Leaves will be devoid of required elasticity and oil. Such tobacco leaves also lack a desirable color and aroma. Immature and slick leaves could have been the result of bad fertilization, over-crowded plants and high amount of shading. It could also be due to over irrigation or excessive rainfall.

Green leaves: Green color in cured leaves occur because of functional failure of weak leaves to produce enough chlorophyll during the curing process. Several factors affect the color of the tobacco leaves such as:

1. Harvesting un-ripe leaves. Some leaves may even be affected with leaf rot diseases.
2. Severe droughts conditions may lead to premature ripening of leaves, even through biological process are still going on inside the leaves.
3. Applying a fertilizer that is too rich in nitrogen. This will lead brown colored cured leaves
4. Plucking leaves before leaves turning yellow in color before drying. These leaves will become harsh and bitter in taste.

Sponged leaves: Sponged leaves are those well grained, porous and over-ripe tobacco leaves that look overtly dull and brownish in color. When you allow tobacco leaves to over-ripe in the field, or when there is too much low temperature during the growing season, or when there is high humidity coupled with very low curing temperature, tobacco leaves will undergo severe degradation on the quality.

Toady leaves: Toady type of cured tobacco leaves display a very slick, highly dense and leathery appearance that look very iron grayish in color. Such leaves are of very poor

quality, as they do not have the required amount of grains nor do they possess the suggested compactness. These cured leaves are high in sugar, look soggy and very starchy.

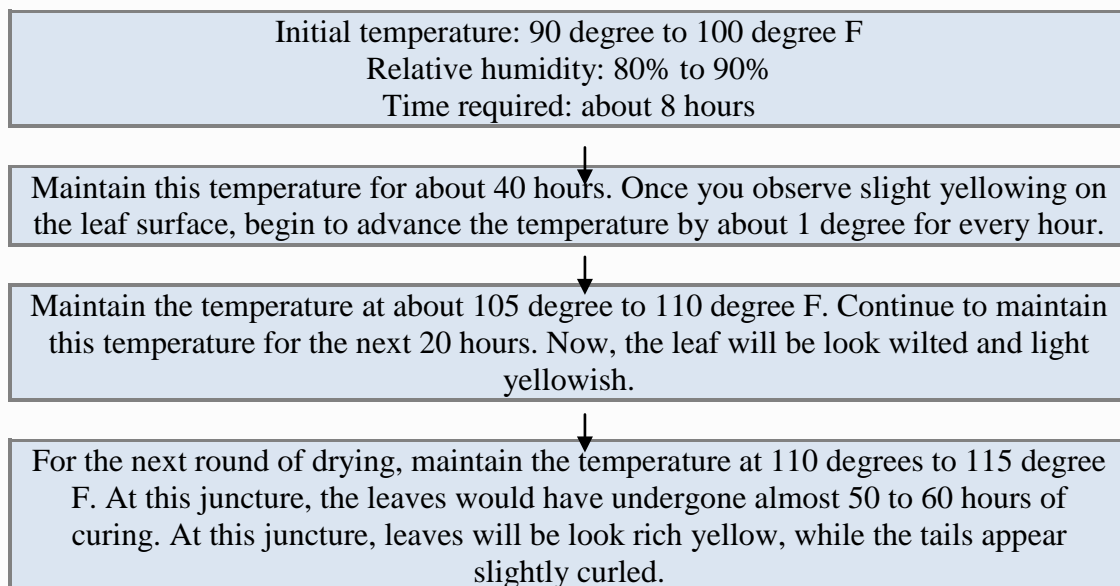
Moisture-laden run back type of leaves: Dark pink or reddish areas that run along the top portion of leaves and lateral veins are known as moisture laden run back type of leaves. This condition is caused by lowering of processing temperature, when the leaf gets dry, without removing all the moisture from the leaves. The rich moisture of the midrib area slowly seeps back to the leaf and causes a dark spot on the leaves.

Barn Scald leaves: Barn scald leaves are dark and chocolate in appearance and this may occur because of high humidity, over stuffing of leaves and insufficient ventilation in the curing chamber. Further, it may also occur because of a high dry bulb temperature in the chamber. Cured leaves look cooked and digested, while the color of the leaves tend to be scalded in look and appearance.

Scorched leaves: A high temperature that exists during the curing process may lead to scorching. The cured leaves that undergo scorching process exhibit bad taste, aroma and a foul odor when exposed to the air.

Tip: Soon after the curing process, the ensuing moisture content of the leaves will be too low. Now, the leaves are difficult to handle as they are too brittle and weak for touch. Thus, you may need to add extra moisture to bring up the level to about 15%. Once the moisture content reaches 15%, the leaves will become easy to handle and manageable. You may use a spray injection system to incorporate additional moisture to the cured leaves. Never add water directly on to the leaves as too much moisture may lead to reduced product quality.

Flow Chart of Curing Process **Yellowing stage**



Note: Under well controlled conditions of temperature and moisture (in very tight barns with good ventilation), it is possible to yellow the leaves by removing the moisture level in a gradual manner. Forced ventilation will help you remove moisture in a rapid manner.

Color Setting and Leaf Drying

Increase the temperature in a gradual manner for the next 15 hours (total processing time of 50 to 75 hours). The temperature increase must be slow and gradual with a range of 2 or 3 degree per hour (from 115 degree to 130 degrees). Be careful not increase the temperature suddenly and above 130 degrees, as leaves may scald and become brown due to over heating. Ensure that the moisture level is reduced very slowly as well.



For the next 5 hours or so, increase the temperature slowly from 130 degree to 150 degree F, taking care to increase the temperature level at a rate of about 3 degree per hour.



The last stage is a very critical stage, when you kill the leaves to induce accumulation of sugar, enhance taste, increase aroma and odor. Increase the temperature at the rate of about 5 degree per hour, until you reach a maximum allowed temperature of 165 degree. This signals the end of formal curing process and by the end of curing; you will have a highly desirable product with the right type of odor, color, taste and texture.

Storing Tobacco Leaves:

Cured tobacco must be stored in a room that is dry, dark and air tight; ensure that the air flow is well controlled to avoid excessive drying. The area where you store tobacco leaves must be free of pests, insets and rats. Wrap the tobacco in small bundles and use air tight plastic bags to store cured tobacco leaves. All individual packs must be placed in air tight boxes or cartons that have a moisture resistant inner layer. Weevils and excessive moisture are the known enemies of cured tobacco leaves; controlling these parameters will help you preserve the leaves for a long time

Different Tobacco Uses

Tobacco is one of the exquisite products used widely all over the world for a wide variety of uses. As an enthusiastic user of tobacco, you can enjoy its exquisite taste and flavor by using a number of tobacco products. Here are a number of tobacco products that you can use as a dedicated tobacco user

Note: Tobacco smoking is the process of inhalation of smoke resulting from burning dried or cured tobacco leaves. Cigarettes are the most widely used forms of tobacco products in the world. Smoking is a wide spread habit.

Cigarettes:

Cigarettes are mild enough for smoking because of the extreme nature of ageing process, when compared to cigars or pipe tobacco. A number of additives and flavored components make cigarettes very popular among people. Europeans like rolled up cigarettes, while Americans prefer formally manufactured products. Some people use cigarettes in their original form, while others may like to smoke them by using a cigarette holder. In some Asian countries like India, people preferred to smoke another form of rolled tobacco called *beedis*.

Cigars:

Who can forget those splendid and tasteful Havana cigars? Havana cigars are world famous and they are the ultimate creations of perfectly cured tobacco. A simple cigar is product that is puffed and not inhaled through the mouth. A cigar is a tightly and firmly rolled bundle of dried, cured and fermented tobacco, which ignites when you light the fire. Cigar tobacco is cultivated in significant and commercial quantities in countries like Brazil, Cameroon, Cuba, Dominican Republic, Honduras, Indonesia, Mexico, Nicaragua, the Philippines, and the United States.

Cigars come in many forms and flavors such as:

1. Parejo
2. Corona
3. Cigarillo
4. Robusto
5. Figurado

This main classification also consists of a number of smaller known varieties of cigars. Little cigars are different than the regular cigars and they weigh less than cigars and cigarillos. Natural cigars undergo the normal curing and ageing process while Maduro type of cigars undergoes a series of subsequent ageing and fermentation processes. Irregularly shaped cigars are *figurados* and they are more difficult to make and produce because of the tough curing and ageing process.

Pipes:

A pipe is a special tool used for smoking. It consists of a small bowl or a chamber to burn the tobacco mixture, and a thin stem projecting out of the chamber as a mouth piece. Pipes are created from a number of materials like clay, wood, glass, metal, bamboo and briar. Tobacco mixture used for pipe is chemically treated to transform smell and aroma. Most of the mixtures used for pipes contain similar ingredients of cured Burley and Virginia tobacco varieties. Latakia and Perique types of tobacco are the other tobacco varieties used for pipes. Pipes can be an art collector's item because there are scores of designs and forms made out of superb materials. Pipes also vary and differ across a wide platform of cost and designs, from the traditional hookahs created with glass materials and adorned with precious metals. Smoking a pipe demands skill and technique than smoking a cigarette or even cigar.

Hookah or Shisha or Nargilah:

Hookah is a single or multi-stemmed water pipe used for smoking. Originally created and used in India, it is currently used widely in West Asia. You can use a hookah by smoking filtered and purified smoke by subjecting the raw smoke by water filtration and indirect heat.

Tobacco varieties used for hookah are:

- Tobamel
- Ma'sal
- Tumbâk
- Jurâk

People also use a number of flavors along with a number of flavored components like:

- vanilla,
- coconut,
- rose,
- jasmine,
- honey,
- strawberry,
- watermelon,
- mint,
- cherry,
- orange,
- apple,
- apricot,
- chocolate,
- licorice,
- coffee,

Interesting Facts about Tobacco

Tobacco is a commercial agricultural crop that is legendary and famous for its exquisite aroma, smell and taste. Though controversial and questionable in its nature, Tobacco has its own portion of stories and anecdotes. Tobacco is also crop that rides on ageless fables and stories dating back to thousands of years. Here are some interesting facts and figures about Tobacco:

1. Tobacco is a plant that is endemic to South and North America. It belongs to the family of potato, pepper and tomato
2. The seeds of Tobacco are too small and tiny and a single ounce of tobacco seeds may contain as many as 350,000 seeds.
3. The first recorded cultivation of tobacco was in the Americas sometime during 6000 BC.
4. American Indians used tobacco for a number of religious and ritualistic purposes.
5. Tobacco was a material used for a number of diseases and conditions like fevers, wound healing and as a pain killer
6. It is believed that Columbus offered tobacco as a gift to the American Indians.
7. Europeans used Tobacco for a number of medicinal and healing properties
8. Tobacco became a social symbol when people used it as a form of money. Tobacco was as precious as gold.
9. By the end of 16th century, medicinal experts first noted the ill effects of smoking tobacco; in fact, they considered tobacco as an addictive substance.
10. It was illegal to smoke tobacco in the US as late as 1632. It was only during that year that the government legalized smoking!
11. P. Lorillard is the oldest and the most famous tobacco company in the U.S.
12. During the American War of Independence, Tobacco acted as physical collateral to finance the war expenditure¹
13. Phillips Morris established its tobacco company in the US in 1847.
14. R.J. Reynolds Tobacco Company establishes its first facility in 1875.
15. The British Phillip Morris establishes its office in the US and introduces the famous brand called Marlboro

16. In 1913, R.J. Reynolds introduces the famous Camel brand of cigarettes.
17. The above mentioned brand becomes the market leader in the US market. It controls almost 45% of the US market.
18. The American Tobacco Company introduces the famous Lucky Strike brand to counter the onslaught of Camel. It becomes the largest cigarette seller when it introduces another brand of cigarette called Pall Mall.
19. The first micronized filter cigarette called Kent makes its appearance in 1952. P. Lorillard introduces this brand throughout the country.
20. In 1954, RJ Reynolds introduces a well filtered cigarette brand called Winston. On the other hand, Reynolds introduces the most famous Salem brand which is perhaps the first filter tipped menthol flavored cigarette.
21. The first health hazard report on ill effects of smoking cigarette appears in the year 1964.
22. Throughout the later parts of 20th century, several governments across the world publish health hazard reports on the serious side effects of smoking tobacco products.
23. Cigarettes become famous throughout the world during the same time
24. Many famous tobacco companies cough up a large amount of damages to aggrieved customers.
25. Cigarettes are still most sought after tobacco products throughout the world.

