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Research Article

TOBACCO CULTIVATION IN HUNSUR TALUK

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ABSTRACT

Among the crops classified as stimulants tobacco is by far the most important commercial crop grown in many countries of the world. It was used by the Indian for medicinal and ceremonial purposes. The English word 'Tobacco' takes its origin from the red Indian word 'Tobacco' (Spanish) which the name of the pipe used by the red Indians for smoking's. The people of old world come to know about tobacco and its products only after Columbus and his party in 1492 landed on the shores of what is known as Cuba. It was he after obscuring the narcotic values of tobacco, introduced in to Europe it is considered to be a source of pleasure to the smokes and a perpetual fountain of revenue to both the forming community and the government. Tobacco is consumed in one form or the other all our the world and as such it is a rich man's solace, a poor man's comfort and a lonely mans companion. (Gopalchari, 1984). In spite of its adversaries, the use of tobacco and its products is still associated with pear, relaxation, contentment and employment to millions of people through farming, trade, industry as well as ancillary industries and transport.

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INTRODUCTION

Tobacco in one of the important commercial crops and grown in several countries in the world. it is an important economic commodity, not only as a source of income and foreign currency for a number of countries. The top ten countries which grow tobacco are china, USA, India, Brazil, Turkey, Zimbabwe, Indonesia, Greece, Italy and Malay.

Tobacco was introduced to India in 16th century by the Portugal. India has the unique feature of cultivating different types of tobacco like FCV, BIDI, BURLY, NATU, and cheroot, Hookah, Snuff Chewing and Cigar under different agro climatic zones in the states like Andrapradesh, Karnataka, Gujarat, Bihar, west Bengal, Tamilnadu, Maharashtra, Orissa and Uttar Pradesh. Through tobacco is cultivated only 0.3percent of land get contribution to Indian economy amounts to 10percent of the total excise collection and nearly 6.7percent of the value of agricultural exports. It is third among the top ten excise revenue yielding commodities from tobacco, India earns as central excise and 1060 corers foreign exchange. In addition over 26 million people are dependent for their lively hood on tobacco industry; this includes one million tobacco formers; five million form workers and 1.5 million retailers. India ranks 3rd in production and fifth in export of tobacco in the world.

Through India produces 500 million kegs of tobacco. The export in sustained mainly by the flue cured Virginia tobacco (Fcv).

FCV tobacco produced in India from a large numbers of small and fragmented holdings with limited resource. Hence the coverage yield and hands 1000 to 1200 kg's/ha, as compared to 2500 kg/ha in Zimbabwe and Brazil. Indian FCV tobacco still sustain in international market because FCV good neutral better quality and low production cost much lower than USA, Brazil and Zimbabwe.

Objectives

- To study about tobacco cultivation and harvesting clearly
- To study the tobacco price in different years.

REVIEW OF LITERATURE

"Economic History of Tobacco Production In India"

-Professor S.K.Goyal -DR.Pratap Chandra biswal -Dr K.V.K Ranganathan

India is the world second largest producer of tobacco endowed with rich agro-climatic attributes such as fertile soils, rainfall and ample sunshine, India produces various types of tobacco. Currently, Indian tobacco is exported to more than 80 countries spread over all the continents

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“India’s Agricultural Exports: Some Challenges”

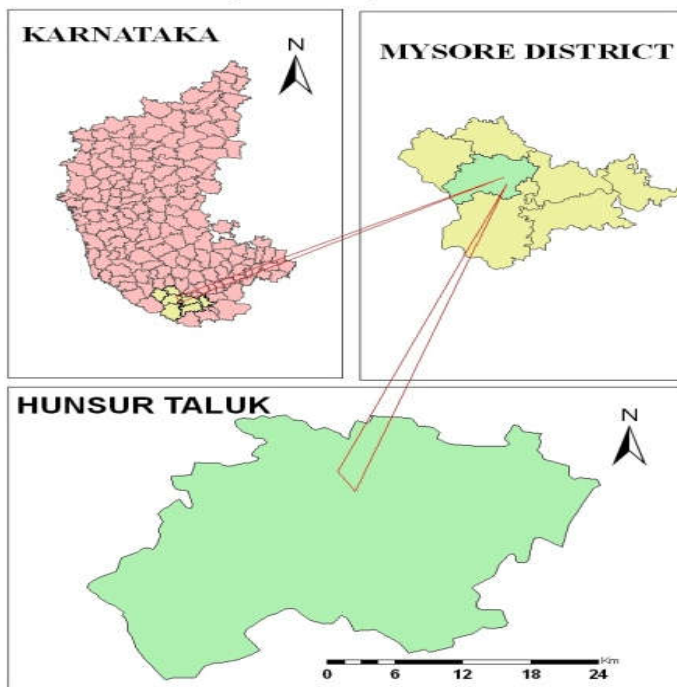
-DR.L Krishnaveni & Sangita Gosh

The agricultural sector has been playing a key role in the composition of Indian exports. This paper highlights the surprising fact that the share of Indian agricultural exports has been slowly declining in recently years.

Location

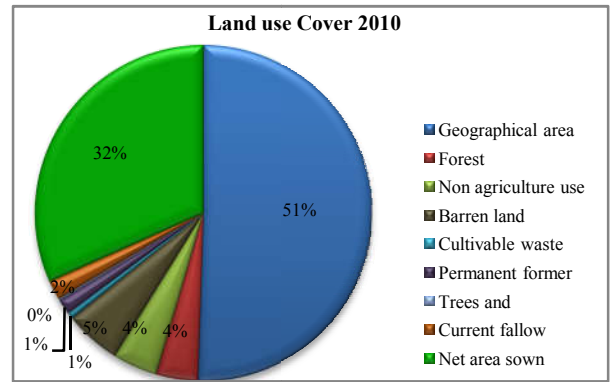
Generally hunsur is table land. The elevation varies from 700 M to 842 M from the MSL. Hunsur lying near the foot hills of Western Ghats and comes under semimalnad region. Hunsur taluk lying between 12 7’ 9” N to 12 25’ 25” N latitude and 76 6’ 4” E to 76 30’ 57” longitudes. The taluk covers a total geographical area of 886 sq km of which 138.75 sq Km constitutes the forest land. The total population of hunsur is 25,3,926 as per 2001 census data and the population density of the area is 282 persons per sq km. the climatic condition of the taluks are favorable to crops like paddy, jowar, ragi, pulses, sugarcane and tobacco. Soil is red sandy loam in most of the areas of the taluk. The average annual rainfall of the taluk is 782 mm. the temperature ranges from 11 c to 38 c. harangi and laxmantheertha are major rivers of the taluk. All over the study area more number of lakes available for irrigation.

Map of Study Area



Land use/land cover

Land utilization is still under the process in this taluks, land preparation going here for feature utilization. More than 50 percent of land occupied by agriculture, forest land existed in husur 7percent from the total geographical as per the revenue records from the state government. Hunsur is having 20 percent of land, which is not suitable for agriculture. Nearly 4 percent of fallow land available I this taluk. These are the major land use / land cover of the taluks. Industrial sector is very poor. All the people depend on agriculture wage. Private institutions and commercial sector land utilization is very minor (see figer)



Agriculture

Main occupation of this region is agriculture. Based on the agro climatic condition this region comes under transition zone. Paddy, ragi, jowar, Sugarcane and cotton these are the suitable crops for this region climate. Another notable crop is tobacco, for this ITC (Indian Tobacco Corporation) taking special care about this region tobacco cultivation. These two regions are getting 780mm of average rainfall annually. Southwest monsoon is major provider of rain. LaxmanTheertha River and harangi rivers canals are the major source of irrigation for this region. Lakes are another major source of irrigation, ground after potential is high. Water level starts from 180 feet, some areas having 400 feet not more than that water is exist. But still lot of problems exists in agriculture practice of this region.

Agro climatic zones of Karnataka

In Karnataka, FCV tobacco grown during karif season in the transitional zone of westernghats extending from south Mysore districts to Shimoga district. This zone is popularly known as Karnataka light soil (KLS) region and mostly consists of sandy loam and loamy sand soil, 80percent of area in concentrated in H.D kote, Hunsur, periyapatna and K.R nagar taluks of Mysore districts.

Karnataka light soil region with monsonic climatic lower diurnal temperature, higher relative humidity and frequent rainfall and an average annual rainfall of 650 mm to 1000 mm of which 80percent is received during May to October period. Coinciding with FCV tobacco crop season in ideally suited for production of quality tobacco. The minimum temperature in cold winter month of January is around 15 c. whole the maximum temperature is hot summer month of April is 34 c.

FCV tobacco cultivation in Karnataka states

FCV tobacco was introduced in Karnataka during 1937 by the domestic cigarette industry viz., Mysore tobacco company ltd. Which has gradually changed the scene in the state? The important types of tobacco grown in Karnataka state occupies important place in flu cured (FCV) Virginia tobacco in cultivated under rainfall conditions in the southern transitional zone extending from south Mysore district to Shimoga in north, the crop in cultivated in Mysore, Hassan, coorg, chamarajanagar, and Shimoga, chikkamaglore and davangere district. Nearly 75 percent of cultivation in confined to Mysore district alone. The crop in grown around 78,000 hectares in the light soil (KLS), covering more than 1000 villages. The region in endowed with ideal soil and climatic situation, which are conducive for production of high quality FCV tobacco

considered as a premium product of export potentiality. In this zone, the production is ranging between 80 to 90 million kegs of which 70 percent is exported to several countries like UK, Germany, Belgium, Bangladesh, Singapore, Algeria, Egypt, Nepal, Russia etc.

Cultivation methods of Tobacco

Production of hardy and healthy seedling for transplanting in the first major steps contributing to the success of the crop in the main field.

FCV tobacco is raised as a rain fed crop in Karnataka and planting time is dependent on onset of monsoon. Hence, it will be better to staggered nurseries sown on different dates to ensure availability of seedlings at the optimum time of planting under favorable weather conditions.

Site Selection

Most suitable soils are sandy loams or loamy sands. The site must possess good drainage both surface and internal. Adequate and reliable water source, preferably from wells, should be available nearby. Clayey and ill-drained field should not be selected. It is a good practice to change nursery site every year to avoid accumulation of soil borne pathogens and required for producing seedling to plant one hectare of crop.

Preparation of seed beds

Deep ploughing (12" to 15") by tractor using disc plough well in advance (November-December) is recommended so that all plant residues decompose before seed-bed work starts.

Subsequently, three to four ploughings/harrowing may be given to get the soil to a fine tilt.

Tobacco nurseries are usually grown during March-April period. As seedlings cannot withstand water logging even for a short time, raised beds of 15 cm height and one meter width are prepared leaving 30 cm space for channels between the beds to facilitate drainage of excess water during heavy rains as well as for operations like sowing, watering, weeding, spraying etc. If the beds are made in a row along slight slope, it will improve drainage. Surface of beds must be level and uniform. Length of beds will depend on field, beds may be of 10 or 15 m length.

Manures and fertilizers

Well composted farm yard manure is powdered and rived and applied @40 tones ha. The manure is spread on beds and mixed with the top 5 cm soil layers by light digging, fertilizer mixture of 40 kg N + P₂O₅ + 25 kg, K₂O / ha (20g Ammonium sulfate + 31g single super phosphate + 5g, potassium sulphate per sq m) is uniformly applied on both on mixed with top soil to a depth of about 5 cm by using a rover.

Seed rate and rowing

Seeds of specific variety recommended for the area only should be used. The optimum seed rate is 2 kg /ha (02/sg.m). Higher seed rate will result in overcrowding of seedlings. Seeding from such beds will be thin, lanky and weak with spore root system and not suitable for planting. Also, in overcrowded seed beds damage due to nursery diseases is more. Tobacco seed is very small in size. Hence, seed is mixed and sown uniformly on the seed bed. After sowing, surface of the bed is compacted by gently tapping with wooden plank to fix the

seeds in soil. Then beds are covered with a thin layer of paddy straw mulch.

Geotextile mulching

Paddy straw is the common mulch material in KLR region for covering the nursery beds of FCV tobacco. After the germination of seeds, the straw cover has to be lifted daily and re-laid which is a labor-intensive and time consuming operation. To overcome these problems geotextile, a loosely woven jute string fabric was tried at thin research station and was found to be an ideal substitute. Further growth of seedling i.e. 25 percent increase in transplantable seedling from first pulling and 25 percent increase in total transplantable seedling was observed in geotextile covered beds over paddy straw covered ones. The seedling obtained from such beds are robust and hardy which will help in better establishment in the main field. The fabric can be used for 2-3 years and is easy to handle.

Watering of seed beds

Regular and judicious watering to maintain optimum soil moisture level for germination and subsequent development of seedlings is important. Surface desiccation of seed bed should be avoided till complete germination is achieved. Otherwise germination will be adversely affected as most of the seeds are lodged in the top ¼ cm, of soil. Depending upon weather daily @ 3-4 lit/Esq. each time usually is sufficient during germination and up to 15 days. Thereafter, watering may be done twice per day, one at about 9.00 to 10.00 Am and the other at about 2.00 PM. When the seedlings are about 35 to 40 days old, watering once in a day gives good results.

Germination and removal of covers

Germination of seed starts from 5th day on wards after rowing. Seed-beds remain covered with a layer of paddy straw. Emerging tender seedling need sunlight. Hence, beds are exposed to sunlight every day after germination for about one hour in the early morning. This operation is meant to avoid etiolating of seedlings. It is also necessary to thin out the paddy straw cover gradually by reducing the quantity while relaying after exposure to allow more sunlight and aeration. The cover is removed completely by about 25th day, care should be taken while remaining paddy straw to avoid damage to young seedlings. In case of geotextile covering daily exposure of beds is not required. The geotextile covered beds can be exposed once in two three days.

Weeding

Nursery should be kept free from weeds by regular hands weeding. Hand weeding should be done carefully when seedlings are very small. Without covering damage to them. If timely weeding is neglected or delayed, weed growth will be very fast and seedling growth is suppressed to a great extent resulting in weak and lanky seedling of poor quality. Weeding should be done at weekly intervals, starting from 15th day after sowing. In fumigated beds, weeding is not required since weed control is absolute and weeding cost will be saved. Similarly in soil salinated beds the initial weeding can be avoided

Hardening of seedlings

Seedlings as they grow up under moist conditions of regular watering and top dressing, tend to become succulent. Succulent seedlings with on transplanting and will be unable to withstand relatively dry field conditions. When seedlings attain transplantable size i.e., about 15cm tall, watering is reduced judiciously to harden the grown up seedlings. Hardening for eight to ten days prior to the pulling gives sufficiently hardy seedlings for transplanting and good establishment. During rainy period there will be no chance for the hardening of seedlings. However, conditions for establishment will be very favorable during the rainy period.

Pulling out the seedlings

Nursery beds that are allowed to dry partially are watered thoroughly before pulling to prevent any damage to roots during pulling seedlings which are about 15cm tall and pencil thick with sturdy stem are pulled for transplanting leaving the smaller ones undisturbed on beds. An ideal transplantable seedling should have well developed root knot free fibrous root system. The stem should have three to four healthy and developed leavers with growing point intact and free from diseases.

Curing methods of Tobacco

Harvesting and curing

Grade out turn of flue cured tobacco depends on the stage of maturity of leaf harvesting and the conditions in which it is cured. Hence, harvesting of well matured leaves and curing them in a proper manner are pre-requisites for obtaining good grades. Harvest is done by priming mature leaves and it starts by about two months after planting. At each harvest, 2 to 3 mature leaves are primed from bottom of each plant, in morning hovers and transported to stringing sheds without much delay. Bright sun causes damage to harvested leaves left open in the field. Depending on weather conditions and rate at which leaves mature, harvesting is done at 5 to 8 days interval. Generally a crop will be fully harvested in 6 to 8 priming's.

Ripe tobacco has a greenish yellow colour but all yellowish tobacco may not necessarily be ripe because water logging, nitrogen starvation and prolonged drought may also cause leaves to yellow prematurely. Such leaves cannot be left on the plant and cured they result in immature and slick cured leaf. This will happen when too many leaves are pulled on plant before harvest result is 'Sponge' tobacco.

The curing, popularly known as flue curing, is done in the barns. Flue curing of tobacco consists of four stages namely, yellowing, colour fixing, lamed drying and stem drying.

Yellowing

In flue curing, the first stage of yellowing is very important as many crucial biochemical changes occur. Chlorophyll is broken down and yellow pigments become visible during this stage. The barns are made air tight and the temperature is raised very slowly so that the moisture loss from the leaves is extremely slow. Maintaining high humidity (92%) is very crucial for uniform coloring of the leaves. Yellowing of leaves with lower RH% will not give uniform coloring to all the leaves.

Satisfactory results are obtained by keeping the initial temperature at 90 F till about 50 percent yellowing is found on lower three tiers, after which temperature is slowly and cautiously raised by 5 F per hour till 105 F is reached. Yellowing can be considered as completed when leaves attain a lemon yellow but still retain a slight greenish cast. Ordinarily, it takes about 30 to 40 hours depending upon the type of leaves harvested and temperature and humidity out rich the barn.

Colour Fixing

Next stage is flue curing is colour fixing during which partial ventilation is provided and temperature is raised by 5 F per hour and maintained at 120 F till the leaf tips are dried. The rate of temperature and ventilation increase at this stage of curing depends on how uniform yellowing had been throughout the barn. The relative humidity was found to range from 70 to 75 percent during the colour fixing stage.

Lamina drying

During leaf drying stage, the temperature is increased by 5 F per hour till about 145 F is reached and with increased ventilation.

Driving out the moisture rapidly will assist the progress of chemical and biological changes, rendering cured tobacco harsh and irritating to smoke.

During this stage, if ventilation is insufficient either due to overloading of barn or due to delayed operation of ventilations leaves develop the condition called as sponging.

Mid-rib drying

This is the last stage in curing where by moisture retained by the mid rib is removed; this can be achieved by raising the temperature slowly from 145F. Keeping all ventilators closed to conserve heat for a period of 20 to 35 hours. When all the mid ribs are fully dried it is stopped and barn is allowed to cool down with closed ventilator.

The entire process of flue curing takes about 100 to 120 hours. After cooling and when cured leaves have become pliable on absorption of moisture, it is unloaded and stick bulked to even out moisture. During periods of low atmospheric humidity, all doors and ventilators are kept open over night for a day or two to obtain satisfactory condition of leaves for unloading, keeping the barn fully shut during day time. Leaves once taken out of strings and either put for grading or kept in loose of the grading at a later day.

Some of the important curing faults

- Green grades
- Sponged tobacco
- Searching
- Runback

Tobacco area under different action platform in Hunsur (KLS)-2012

Table: Tobacco area under different action platform in Hunsur (KLS)-2012

Sl.no	Platforms	No.of Grows	No.of Barns	Area planted(Ha)
1	Hunsur-PF 1	2307	3120	6150
2	Hunsur-PF 2	3274	4316	7985
3	Hunsur-PF 3	2476	3352	6670

Figure No of Grows and Barns in Hunsur Taluk Platforms

Planted area

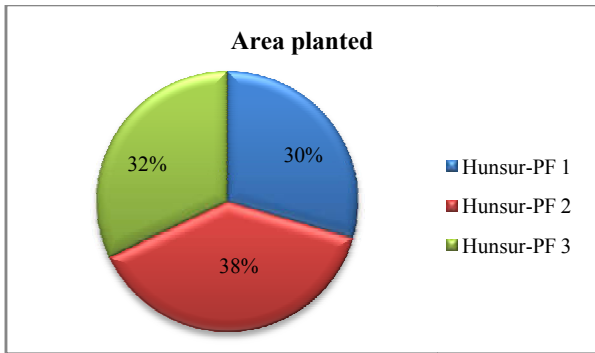
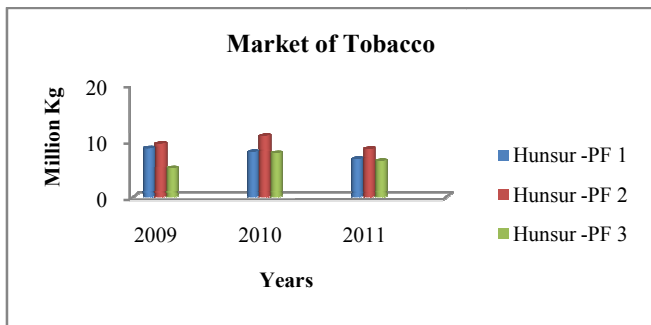


Figure Area planted (ha) in Hunsur taluk Plat forms

In hunsur taluk there are three action platform like Hunsur PF 1, Hunsur PF 2 and Hunsur PF 3. Hunsur platform 1 having 2307 sigarate growers and 3120 barns, it owns 6150 hectares of FCV tobacco cultivation area like these Hunsur platform 2 also having 3274 grows,4316 barns and 7985 hectares of FCV tobacco cultivation area. In husur platform 3 2476 grows, 3352 barns and 6670 FCV tobacco cultivation area.

Hunsur Marketing in platform wise information



Marketing wise information

This figure shows us the PF2 is having maximum share of marketing than other platforms, and PF 3 is having so many up and downs in these three years also, and PF1 is decrease the marketing in year by year. In 2010 PF2 having high amount of marketing like 11 m.kg.

Hunsur Average Price information in platforms wise

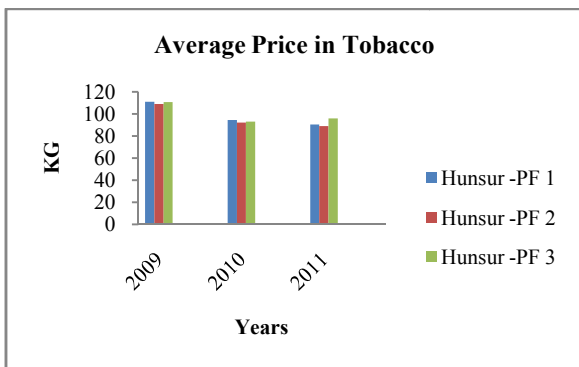


Figure Average Price information

This figure shows the average price of tobacco, so in the year of 2009 all most of three platforms also getting higher price because for their quality, but some time like in the year of 2010 and 2011, the average price is comparatively lesser than the year of 2009.

Hunsur Value's information in platfor

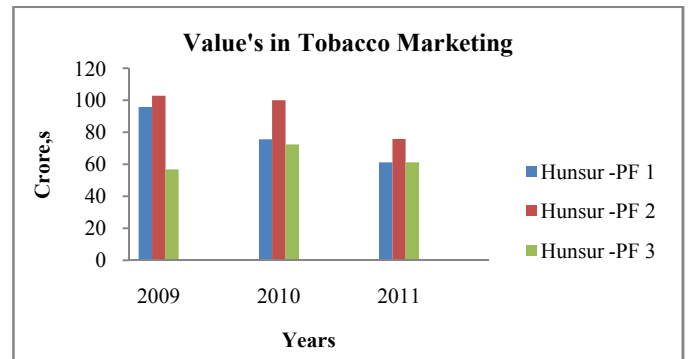


Figure Value's information

This figure shows the values information of tobacco, according to this major share is accrue only in PF2, but PF1 is having not much but PF3 value is comparitively lesser than the other plate form.

CONCLUSION

Analysis of the diffusion and development of Virginia tobacco has provided an insight into the farmers's behavior as regards adoption of crop innovations, associated with greater amount of risk. The cultivators are capable enough to choose relevant crop innovations in relation to the productive natural environment. If the productivity and profitability of the crop innovations are demonstrated, and backed with financial and technical assistance, farmers can adopt and produce crops even with large amount of risk. Thus, cultivation of Virginia tobacco is a typical example for the entrepreneur type of behavior of the cultivator.

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