

## “A REVIEW OF POMEGRANATE CULTIVATION”

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**Abstract** - India has always been known in the world for its Rural Based Economy, as nearly 65% of its population is dependent on Agriculture & other rural businesses. According to the census of India, 2011, the population of India is more than 1.21 billion and out of it 72.2% population belongs to the rural area. So, the Analysis of the rural development is very much required in India. One of the oldest known fruits, found in writings and artifacts of many cultures and religions, the pomegranate (*Punica granatum*) is an original native of Persia.

Maharashtra is the leading producer of pomegranate followed by Karnataka, Andhra Pradesh. Ganesh, Bhagwa, Ruby, Arakta and Mridula are the different varieties of pomegranates produced in Maharashtra. In India, pomegranate is commercially cultivated in Sholapur, Sangli, Nasik, Ahmednagar, and Pune. Cultivation of pomegranate in rural area is one of the fastest growing segments within agricultural sector in India today.

Now days pomegranate cultivation in rural areas has increases tremendously as many farmers view pomegranate as money machine as lot of income is generated by pomegranate. Pomegranate cultivation in rural area gave helping hands to the educated & uneducated people who are unemployed. Due to cultivation of pomegranate farmers earns good profit because of which farmers are satisfied within their social & economic life.

**Key Words:** *Pomegranate cultivation, Economic Upliftment.*

### 1. Objectives of Literature review:

1. To understand the cultivation of pomegranate in detail.
2. To find out academic research so far conducted on pomegranate cultivation.
3. To find out study carried out for impact of pomegranate cultivation on farmers' economic upliftment.
4. To understand the management prospective in pomegranate cultivation.

### 2. Scope of Literature review:

During this literature review researcher has narrowed down the search by focusing on important aspects which are directly related to the research topic. The researcher has

reviewed the literature only with respect to pomegranate cultivation, factors responsible for preferring pomegranate cultivation, results of pomegranate cultivation across different countries, economical upliftment of farmers because of pomegranate cultivation and problems faced by farmers with respect to disease of pomegranate, medicinal value & health benefit of pomegranate. The basic purpose of this review is to identify the research gap for the research work that is under study..

### 3. Introduction to Pomegranate cultivation & economic upliftment:-

The literature review is mainly related with pomegranate cultivation, medicinal value & health benefit of pomegranate, diseases associated with pomegranate plant & fruit & economic upliftment.

Economic upliftment:-

The term economic upliftment means Progress in an economy, or the qualitative measure of this. Economic development usually refers to the adoption of new technologies, transition from agriculture-based to industry-based economy, and general improvement in living standards.

Or

The term economic upliftment means the advancement of a nation or society according to several economic factors. Economic development generally includes such trends as technological innovation, improvements in the standard of living and life expectancy, and increases in the amount of invested assets per capita.

Or

Economic development is the sustained, concerted actions of policy makers and communities that promote the standard of living and economic health of a specific area. Economic development can also be referred to as the quantitative and qualitative changes in the economy. Such acts can involve multiple areas including development of human capital, critical infrastructure, regional competitiveness, social inclusion, health, safety, literacy, and other initiatives. Economic development differs from economic growth. Whereas economic development is a policy intervention endeavor with aims of economic and social well-being of people, economic growth is a phenomenon of market productivity and rise in GDP. Consequently, as economist Amartya Sen points out, "economic growth is one aspect of the process of economic development.

#### 4. Details of Review:

**James H. LaRue (1980)** published a research paper title "Growing Pomegranates in California" In his research paper he gave the entire information on how pomegranate is cultivated in California. He also gave the information where pomegranate may be plant, which varieties people have to select, Propagation, Planting, Distances, Irrigation, Fertilization, Insect Pests, Diseases, Harvesting, & Marketing and Uses of pomegranate.

**A Blumenfeld, F. Shaya & R. Hellel (2000)** publish a paper in an article on "cultivation of pomegranate" In their paper they discuss various aspects of pomegranate cultivation. Tradition, consumption and production target, recommended soil, fertilization and fertirrigation, most common diseases and treatments, weed control, tree shape and orchard design, pruning, pre harvest treatment of fruits, harvesting, packing, storage and needs for the future.

**Anand P. Kulkarni (2005)** in his Ph. D. Thesis titled "Bioactive Molecules From Pomegranate Fruit Waste (Pith and Capillary Membrane)" did the research that pomegranate is extensively used in the folk medicine of many cultures including Greek, Hebrew, Chinese and Indian. He also explore the study that pomegranate is well known for its medicinal properties & also used in medical institute such as British medical association, London (Langley, 2000). He also mention that in Ayurveda –an ancient science of Indian medicine has identified pomegranate as a medicinal plant and consumption of pomegranate juice was prescribed as remedy for various ailments

**Eric W. Mercure (2007)** presented a research paper titled "The Pomegranate: A New Look at the Fruit of Paradise" In his paper broad overview is provide for the fruit known as the pomegranate. The pomegranate has a deep association with the cultures of the Mediterranean region and Near East, where it is savored as a delicacy and is an important dietary component, revered in symbolism, and greatly appreciated for its medicinal properties. It is strange that a horticultural icon of such importance has been largely relegated to an ornamental role in the United States and much of Europe.

**Murad Canakci (2010)** presented a research paper titled "Energy use pattern and economic analyses of pomegranate cultivation in Turkey" The objective of this study was; to determine the energy usage, to find the output-input energy ratio and their relationships, and to analyze the economic variables in pomegranate cultivation in Turkey. The energy use pattern and economic item values were determined by a survey including 92 farms from three zones having various geographical and land properties. The findings showed that the energy requirements were between 32619.0 and 44462.7 MJ ha<sup>-1</sup> and the energy ratios of three different zones varied from 1.25 to 1.94. Total net return and benefit-

cost ratio ranges were found to be 4427 - 11693 \$ ha<sup>-1</sup> and 1.43 - 1.73, respectively.

**Vijay M. Patil, G. A. Dhande\*, Dipak M. Thigale and J. C. Rajput. (2011)** presented a research paper titled "Micro propagation of pomegranate (*Punica granatum* L.) 'Bhagava' cultivar from nodal explants" In their research paper they put light on how to make Reliable and reproducible protocols to get healthy and well formed plants from nodal explants of the Pomegranate.

**K. T. RAVIKUMAR, S. B. HOSAMANI, N. R. MAMLE DESAI, SURESH D. EKBOTE AND K. V. ASHALATHA (2011)** published a research paper title "Investment pattern and maintenance cost in pomegranate orchards: An economic analysis" In their research paper they did the investigation on the investment pattern in pomegranate orchard and to compute the costs and returns in pomegranate cultivation. In their paper they did the detail analysis of cost required & the income generation in pomegranate cultivation. They did their study in Challakere and Hiriyur talukas in Karnataka. The financial feasibility analysis revealed that on an average the investment in pomegranate orchards can be recovered within six years in both the talukas. The returns per rupee of investment in these orchards were capable of generating nearly three rupees which was highly profitable venture. The internal rate of return was found to be in the range of 57-59 percent which was much higher compared to the cost of capital (9.5 percent) and hence highly profitable. Overall, the proposition of growing pomegranate crop was highly profitable as revealed by the financial feasibility tests.

**Magda M. Khattab, 1Ayman E. Shaban, Arafa H. El-Shrief and 2Ahmed S. El-Deen Mohamed (2012)** presented a research paper titled "Effect of Humic Acid and Amino Acids on Pomegranate Trees under Deficit Irrigation. I: Growth, Flowering and Fruiting" In their research paper they did the study on 20 years old pomegranate trees. Trees under investigation were grown in a sandy soil. The trees received humic acid or amino acids incorporated with irrigation levels 7 and 9 m<sup>3</sup> /tree/year in comparison to farm control (11m<sup>3</sup>). The results showed that, shoot length, number of leaves per shoot, leaf area, number of flowers per shoot, fruit set percentage, fruit retention percentage, number of fruits per tree and yield (kg/tree) significantly increased by increasing water level from 7 and 9 to 11m<sup>3</sup>. On the other side increasing irrigation water amount from 7 and 9 to 11m<sup>3</sup> decreased fruit drop percentage significantly.

**Debjit Bhowmik 1\*, Harish Gopinath 1, B. Pragati Kumar 1, S.Duraivel 1, Aravind. G1, K. P. Sampath Kumar 2 (2012)** published a research paper title "Medicinal Uses Of *Punica Granatum* and Its Health Benefits" The main objective of the research was to tell the medicinal value of pomegranate. Pomegranate has been used for thousands of years to cure a wide range of diseases across different cultures and civilizations. It has great nutritional values and

numerous health benefits. Pomegranate is used as treatment for Cancer, and Other Diseases. The pomegranate has been used in natural and holistic medicine to treat sore throats, coughs, urinary infections, digestive disorders, skin disorders, arthritis, and to expel tapeworms. However, modern research suggests that pomegranates might be useful in treating such serious conditions as prostate cancer, skin cancer, and diabetes. Studies also show that pomegranate seeds might help rid the digestive system of fats. Clinical research shows that pomegranates, when part of a healthy diet, might help prevent heart disease, heart attacks and strokes. This is because pomegranates have the potential to thin the blood, increase blood flow to the heart, reduce blood pressure, reduce plaque in the arteries, and reduce bad cholesterol while increasing good cholesterol. Juice of flower is used to treat nose bleeds.

**K.R. SHIVA PRASAD, G.K. MUKUNDA, A.B. MOHANKUMAR\* AND K.YATHIRAJ (2013)** presented a research paper titled "Bhagwa a promising variety of pomegranate for dry regions of Karnataka" In their research paper they did study near Hiriya, Chitradurga district to know the performance of Bhagwa variety in comparison with Ganesh variety of pomegranate with respect to their physico-chemical characters. The results revealed that the Bhagwa variety of pomegranate is an outstanding variety for all the characters studied. Bhagwa variety recorded the maximum fruit weight and weight of aril & Bhagwa variety emerged as the best variety.

**Dr. Brij Bala (2013)** presented a research paper titled "Upliftment of Rural Economy through Protected Cultivation" In their research paper he did the study that More than 80 per cent of the farmers in India are small and marginal. Polyhouse technology has emerged as a boon to such resource poor farmers. To assess the costs and benefits drawn by the farmers through crop cultivation in polyhouses, a study was conducted in Kullu and Mandi districts of Himachal Pradesh, India. The total cost of construction was Rs. 100500, Rs. 216250 and Rs. 481600, respectively for polyhouses of 100 sq.m., 250 sq. m. and 500 sq. m. and farmers had to invest only 20% of the total cost. The finding of research was that about 85 per cent of the farmers grew capsicum, tomato or cucumber in their polyhouses as main crops and exotic vegetables like iceberg lettuce, pok choi and celery as covering crops. It was estimated that a farmer could have net returns up to Rs.1.42 lacs per annum from a 500 sq. m. polyhouse. Thus, the crop cultivation in polyhouses can work wonders for the marginal and small farmers.

**BIMAL DEBBARMA AND PRANAY JYOTI GOSWAMI (2013)** presented a research paper titled "Economic Upliftment of Tribal Population in Tripura through Tribal Self Help Groups" In their research paper they did the study Tripura is a tiny and hilly state in the North-East India with an area of 10,491.69 sq.km of land. There are 19 (nineteen)

notified Scheduled Tribes in the state. The main tribal groups are Tripuri, Reang, Chakma, Jamatia, Halam, Noatia, etc. the literacy rate of all schedule tribes population in the state was 56.5 percent in 2001. Recently the tribal populations were engaged in economic activities by forming SHGs in Tripura. The present paper was to investigate the working of Tribal SHGs. It was focus on how the economic lives of Tribal people have changed in due course of time through the functioning of SHGs. It was also be within the frame of the study which was recommend upon augmenting that the SHGs based upon their achievement towards development of economic condition of Tribal population in Tripura. Both primary and secondary data will be used for the present study.

**PEI-TZU WU (2013)** in his Ph. D. Thesis titled "Effect of pomegranate extract supplementation on cardiovascular disease risk & physical function in patient with chronic failure" did the research that, in recent one year dialysis patients found that, consumption of pomegranate juice, a rich source of polyphenol antioxidants, significantly lowered serum markers of inflammation and oxidative stress, reduced carotid atherosclerosis, and lowered the prevalence of hospitalizations due to infection. Despite these potential benefits, pomegranate juice is normally contraindicated in hemodialysis patients because its high potassium content may contribute to hyperkalemia-induced cardiac dysfunction. As a result, the efficacy of alternative antioxidant therapies needs to be investigated.

**Radwan S. Farag 1, Mohamed S. Abdel-Latif 1; Sekina, S. Emam 2 & Layla, S. Tawfeek (2014)** presented a research paper titled "Photochemical screening and polyphenol constituents of pomegranate peels and leave juices" In their research paper they did study for which leave and peels of pomegranate plants were manually separated and mechanically pressed to obtain their crude juices. The photochemical results indicated that pomegranate peel juice contained high quantities of polyphenol and flavonoids, being about 1.22 and 1.43 times as great as that of leave juice, respectively.

**Shoji Lal Bairwa , Kerobim Lakra, S. Kushwaha , L. K. Meena and Pravin Kumar (2014)** presented a research paper titled " Agripreneurship Development as a Tool to Upliftment of Agriculture" In their research paper they put the light on shift from agriculture to agribusiness is an essential pathway to revitalize Indian agriculture and to make more attractive and profitable venture. Agripreneurship have the potential to contribute to a range of social and economic development such as employment generation, income upliftment, poverty reduction and improvements in nutrition, health and overall food security in the national economy. Agripreneurship has potential to generate growth, diversifying income, providing widespread employment and entrepreneurial opportunities in rural areas. This paper mainly focused on basic concepts of

agriprenurship, entrepreneurship skills, and needs of agriprenurship development in India along with major reason for promoting agriprenurship development in country.

**Tejal Deshpande<sup>1</sup>, Sharmila Sengupta<sup>2</sup>, K.S.Raghuvanshi (2014)** presented a research paper titled "Grading & Identification of Disease in Pomegranate Leaf and Fruit" Present paper was an attempt to automatically grade the disease on the Pomegranate plant leaves. This innovative technique would be a boon to many and would have a lot of advantages over the traditional method of grading. There has been a sea change in the mindset and the effort put down by the agricultural industry by adapting to the current trends & technologies. Presently plant pathologists follow a tedious technique that mainly relies on naked eye prediction and a disease scoring scale to grade the disease. Manual grading is not only time consuming but also does not give precise results. Hence the current paper proposes an image processing methodology to deal with one of the main issues of plant pathology i.e. disease grading.

**Mr. Chandrakant Kamble (2014)** presented a research paper titled "A Role of MPBCDC in Economic Upliftment of Scheduled Caste Beneficiaries in Kolhapur District" In their research paper he did the study that The Maharashtra Government has established one corporation for the development of backward class people i.e. Mahatma Phule Backward Class Development Corporation Limited Mumbai (M.P.B.C.D.C). M.P.B.C.D.C has implemented various schemes on behalf of the Government such as 1) 50% Subsidy Scheme 2) Margin Money Scheme 3) Training Scheme. Mahatma Phule Backward Class Development Corporation is one of the leading SC Corporations in Maharashtra which has been started to providing entrepreneurial finance for economic upliftment of scheduled castes. The present study has been undertaken to find out the Role of MPBCDC in Economic Upliftment of Scheduled Caste Beneficiaries in Kolhapur District of Maharashtra State.

**Shivani Gupta (2014)** published a research paper title "Impact of Economic Development on Status of Women: An Analysis for India" This paper publish to analyze the impact of Economic Development on the status of women in India and tries to study how historical perceptions, prejudices and beliefs regarding women in society have led to perpetuation of deprivation and discrimination against the women and in result deteriorating the overall status of women even in today's world. For any economy, growth relates to an increase in per capita income which reflects only "quantitative aspect" Disregard of distributive justice in that economy. Economic development, on the other hand, is not only to the quantitative aspect but also qualitative aspect of distribution of income and income inequity in respect of its distribution among the population and also other socio-economic factors as well, hence it is also referred as a "multi-dimensional concept" including not only increase in per

capita income but also improvement in living standards, educational attainment of people, alleviation of poverty, health conditions and nutritional status, status of women and their empowerment etc. This paper focuses on the status of women and their empowerment along the path of economic development in India and suggests some possible channels as also remedial measures that can lead to or help to uplift the status of women.

**Manisha A. Bhange, Prof. H. A. Hingoliwala (2015)** published a research paper title "A Review of Image Processing for Pomegranate Disease Detection" In this paper, they suggested a solution for the detection of pomegranate fruit disease (bacterial blight) and also the solution for that disease after detection is proposed. Bacterial Blight need to control at primary stages otherwise it will lead to economic loss. Web-based system used to help non experts in identifying fruit diseases, based on the picture representing the symptoms of the fruit. Farmers can take the photo of the fruit disease and upload it to the system. Then system will show to the farmer is the fruit is infected by the bacterial blight or not. They also added new approach of Intent Search in this system that is useful when quality of input image is poor.

**MS. SOFIA KHAN (2015)** published a research paper title "Impact of MNREGA in socio economic upliftment of rural population in Varanasi district". The research paper was deal with social factors (livelihood, family status, e.t.c.) & economical factors (income & expenditure) and tries to analyze the role of MNREGA in socio-economic upliftment of rural population. In her research paper she gives the detail study about what do you mean by social & economic upliftment, & which factor indicates the social & economic upliftment. To analyze the role of MNREGA in socio-economic upliftment of rural population and which is based on primary data collected from the Varanasi district of Uttar Pradesh.

## 5. Research Gap:

After going through primary literature review it is found that till now major study on pomegranate was related with pomegranate cultivation & its medicinal values. The research also covered the diseases of pomegranate & its control mechanism, Pomegranate cultivation & different varieties of pomegranate, production of pomegranate & marketing channel involved in marketing of pomegranate.

The impact of pomegranate cultivation on economic upliftment of farmers is ignored in the research field. So, by doing the research on this topic it is possible to make the farmers aware about various opportunities because of pomegranate cultivation. Various government schemes supported and encouraged farmers to go for pomegranate cultivation & farmers economic life substantially improved because of pomegranate cultivation. There is need to do intensive study in this area.

It is being observed through literature review that none of the studies has been carried out on economic upliftment of farmers i.e. whether the pomegranate cultivation has direct impact on economic upliftment of farmers.

In the rigorous task of performing Literature Review, Researcher has reviewed more than thirty (30) research papers cum articles and 02 (two) PhD Doctoral Thesis from various National/International Researchers & still the work is going on.....

The comprehensive reviewing of above material has resulted in finding out various areas where research has not yet performed on large scale and thus provided a strong basis for Researcher to work upon.

The various untouched areas are found to be as follows-

- Impact of pomegranate cultivation on economic upliftment of farmers.
- Role of government agencies & government scheme in development of pomegranate cultivation.
- Motivating factors responsible for pomegranate cultivation.
- Effectiveness of pomegranate cultivation in enhancing economic and social condition of farmers.
- Cost and revenue generation structure in pomegranate cultivation.
- Analysis of problems faced by farmers while going for pomegranate cultivation.

## 6. Conclusion:

From Literature review it is found that till now major study on pomegranate was related with pomegranate cultivation & its medicinal values. The research also covered the diseases of pomegranate & its control mechanism, Pomegranate cultivation & different varieties of pomegranate, production of pomegranate & marketing channel involved in marketing of pomegranate.

After going through rigorous review of literature researcher has identified variables which can be used for further research. The researcher had also come across various facts which will narrow down broadly defined research problem. Based on the finding in review the researcher will also include study of all the motivating factors considered by farmers before entering into pomegranate cultivation. In India the participation of farmers in pomegranate cultivation is less as compared with countries like Iran Teheran & Afghanistan it may be because of less knowledge about pomegranate cultivation.

Researcher has identified certain variables which will guide further study.

### Dependent Variable for pomegranate cultivation

1. Knowledge of pomegranate cultivation.
2. Knowledge about pomegranate diseases.
3. Inability to take Risk
4. Lack of marketing knowledge.
5. High Initial Investment.
6. Communication gap between farmer and government agencies.

7. Experience of performing work by new production methods.
8. Cost of pomegranate plant
9. Demand and supply of pomegranate & its bi product.
10. Transportation facilities.
11. Location or accessibility.
12. Climatic changes.
13. Less income from traditional agricultural practices.
14. Assured income.
15. Demographic factors age, gender, education and income.
16. High demand overseas.
17. Indian cultural values and beliefs.

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