

BECOMING AN ENTREPRENEUR VIA THE PRODUCTION AND SALE OF AVOCADO OIL BASED ON APPLICATION OF CHEMISTRY PRINCIPLES

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Abstract

The objectives of vision 2020 seek to place Nigeria among the 20 largest global economics by year 2020 (<http://www.businessdayonline.com>). To realize this objective, the nation has to develop industrially. Industrialized nations became global economics to reckon with via encouragement and springing up of small scale industries that grew to become large industries(www.tgdaily.com). Nigeria is richly endowed with so many natural resources including Agricultural resources, mineral resources and petroleum resources. The Agricultural resources has so much to offer, given the enormous fruits and crops that are produced in this sector, they have been neglected for this years. The avocado fruit is an agricultural product that is economically viable in terms of production and sale of oil from. The oil has so many uses and benefits. Unemployed chemist applying the principles of extraction of oil from plants can venture into it as entrepreneurs.

Introduction

The objectives of vision 2020 seek to place Nigeria among the 20 largest global economics by year 2020 (<http://www.businessdayonline.com>). The vision is hung on three pillars namely guaranteeing the productivity and well being of the Nigeria people, optimizing the key sources of economic growth and fostering sustainable social development.

For Nigeria to attain the objectives of vision 2020, she must pay attention to the non oil sector, which she depended on before the discovery of oil. It should evolve a programme that will assess the non-oil sector and fashion out ways through which the sector could be properly harnessed. With the right type and volume of support and incentives, Nigerian products will perform exceedingly well in the international market (<http://allafrica.com>).

Nigeria is a country that is richly endowed with a lot of natural resource ranging from oil, solid minerals, cash crops (economics trees) and feed crops. but unfortunately, it has focused its attention on the oil sector and given little or no attention to the other sectors.

China that is now the world's second largest economy used to be a poor nation with very large population that can now sufficiently sustain its people (www.tgdaily.com). Its revolution to make economic break through and sustain her self started when the country harnessed every natural resource in the country. The country became industrialized starting from small scale production to large scale production activities. There is virtually no where in the world that China products are not found and sold.

The Chemist and vision 2020

Chemistry is the study of the material substances that occur on earth and elsewhere in the universe. It is also concerned with the properties of matter, interactions and interactions among the substances. In addition, chemistry deals with the utilization of natural substances for the creation of

new ones (Jacob, 2010). This latter definition underscores the intimate association between the subject chemistry and industry.

The importance of chemistry in our lives can better be appreciated when one considers myriads of products which are produced via the application of chemistry in industries. The essential drugs that ensure good health, the pesticides that destroy disease causing pests etc. The present-day convenient modes of transport including automobiles, ships, aircrafts and bicycle are products of steel industry and would not have been possible if iron was not extracted from iron ore by the chemist. Our buildings are constructed from concrete blocks which are products of cement concocted by the chemist. Some of the clothes we wear are made from polyester or nylon, which are products of modern chemistry etc. The list is so long that one can state without fear of contradiction that modern man cannot do without chemistry.

A person who has undergone training in chemistry at the tertiary education level is a chemist and from the foregoing, it is obvious that the chemist has the potential to impact favourably on the lives and activities of mankind. Similarly, the chemist has a critical role to play in the industrial development of a nation like Nigeria.

Entrepreneurship and Nation Building

According to Jacob, (2010), Entrepreneurship is the act of being an entrepreneur, which is a French word meaning one who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods. In economics, entrepreneurship is defined as the process of discovering new ways of combining resources (Jacob, 2010).

In the contemporary Nigeria, government at all levels have suddenly woken up to the realization that our educational system had been flawed such that there is a wide gulf between principles taught in schools and practical application of the principles to solving problems of the society thus lately, there is a strong push to introduce entrepreneurship in school curricula as well as strengthening the practical aspects of science and technical education, (Jacobs,2010). This is indeed a welcome development as no nation can grow if devoid of entrepreneurship. All the industrialized countries of the world got to their present level of industrialization because through appropriate policy measures, they deliberately created environment that encouraged entrepreneurship. Opportunities abound for chemist entrepreneurs because Nigeria is endowed with abundant natural resources and the federal government is making a conscious effort to encourage entrepreneurship.

Chemist as an Entrepreneur

Nigerian chemistry graduate can venture into entrepreneurship (become self-employed) by applying the skills and knowledge acquired as a chemist in a country with abundant natural resources. At the nations current level of development, we are equipped to establish primary or extractive industries since we are blessed with fertile soil and endowed with abundant natural resources. The chemist has a major role to play in this regard, provided they are prepared to dispense with the erroneous belief that all industrial projects must take place in gigantic buildings and that the use of complicated machines is imperative. When such beliefs are adopted, the concept of micro and small scale industry becomes untenable negating the notion that such class of industry remains the engine of growth of modern economies world wide, (Jacob, 2010). In Asia which presently dominates the world in the production of consumer goods. There is preponderance of micro-small-and-medium-scale industries. It is a common place to have a manufacturing industry in a single room which produces both local and export market (Jacob, 2010).

Challenges that Nigerian Chemist can Face as Entrepreneurs

A typical entrepreneur in Nigeria is faced with numerous challenges which can be encapsulated into the following. \\

1. Lack of basic infrastructure:
 - lack of power supply
 - Running water
 - Poor road network
 - Poor communication network
2. Multiple taxes and levies:
 - Imposed by federal, state and local governments
 - Imposed by communities in the way of social corporate responsibilities
3. Insecurity:
 - Lack of free flow of goods and services on the high way
 - Harassment by security agents on the high way
4. Funding:
 - Most commercial banks look down on entrepreneurship for purposes of funding

Despite the problems and challenges highlighted above, opportunities still abound for entrepreneurship because the federal government is making a conscious effort to encourage entrepreneurship. Similarly, in terms of funding, the Bank of Industry looks more favourably at funding entrepreneur projects.

Avocado

Avocado is used as food and in common dishes. It is also used in the production of oil (<http://www.centerche.com>). It is well known that avocado have relatively high oil content which is comparable to olives. The oil of avocado is of good quality (Werman, 1987). The oil has excellent keeping quality. Samples kept in a laboratory in Los Angeles at 44⁰c showed only slight rancidity after 12 years.

Uses of Avocado oil

The oil is used for hair dressing and is employed in making facial creams lotions and fine soap (<http://www.livingnutrition.com>). Avocado oil is of great importance to the cosmetic industry in that it contains a sterol called photosterol which has the same penetrating abilities as lanolin. (Naarden, 1958). This makes it suitable for skin and massage creams, massage oils which are used for applying to rubbing into the skin. Avocado oil is also used in high grade toilet soaps and contributes to the soaps superior lathering and cleaning qualities. Avocado oil is easy to emulsify, its low surface tension produces smoothening creams and soaps and makes a superior cosmetic oil. According to Roife (1975), the impressive list of vitamins found in avocado oil is of benefit to the cosmetic industry because vitamin A helps to prevent a dry skin and vitamin E (Tocopherol) and vitamin D are effective against skin wrinkling. Tocopherols are antioxidant agents. These active substances protect oil, cell membrane, lipids and cell organelles from oxidation; tocopherol (vitamin E) has the strongest biological activity in the organism with important actions in the skin (Le poole, 1995).

Avocado oil is usually categorized as a vegetable oil (Oldrichs, 1995). Vegetable constitute the most important source of edible fats and oil (Kirk and Othmer, 1974), Most vegetable oil are liquid at room temperate. It has been found that the oil of the avocado fruit is one of the most healthiest oil as it contains majority of unsaturated fatty acids (Horace, 1956). It is fifth on the list of

the most desirable oils known as anti-cholesterol agent (Horace, 1956). Oils rich in unsaturated fatty acids have been found to retard and prevent the collection or the formation of clots, which results in the commonly known heart attack, known as coronary heart disease. At room temperature (25⁰c) the saturated fatty acids from 12 to 24 carbon length heavy consistency. Therefore oils rich in saturated fatty acids correlates with increased blood level of bad cholesterol, which leads to coronary heart attack. Unsaturated fatty acids of these length are only liquids at room temperature (25⁰c) and correlates to good cholesterol(David and Micheal, 2005).

Entrepreneurship in the Production/ Extraction of Oil from Avocado Oil

Given all the benefits of avocado oil, unemployed chemist can venture into the production and sale of avocado oil.

According to Popenoe (1941), the avocado seedling start bearing fruit in 4-5 years and the tree will continue to bear fruit for 50 years or more. It is a year round crop, and because it is a year round crop, it offers it great advantage over olive oil in Australia and new Zealand, and other countries where bought olive oil and avocado oil are processed in abundance. In Australia and New Zealand in particular, olive oil is processed during the olive oil season, and avocado oil during the rest of the year (Lee, 1981, Turatti, 1985)

Avocado oil comprises a significant proportion of the fruit of the avocado. The pulp contains a fatty oil of 40% depending on the season, location, climate (Leung, 1980). It compares with the percentage yield of oil extracted from melon seed ranging from 47.9-51.1% reported by Ige, Ogunsua and Okon (1984); for pumpkin seed (49.2% and 47.01%) by Asiegbu (1987) and Fagbemi and Oshodi (1991) respectively. The oil content of avocado is high compared to soyabean seed, which has only 23.5% oil (Paul and Southgate, 1980)

Method of Extracting oil from Avocado

The oil is usually extracted from the pulp using three main methods (Swarts, 1976 and Turatti, 1985).

1. Extraction by using a tube press/ hydraulic press
2. Rendering process
3. Solvent Extraction

In oil extraction using a tube press plant, the tubes are filled with avocado pulp and with hydraulic pressure, oil is pressed through perforations with the inner tubes. The use of press tube plant helps to extract as much of the oil in the avocado mesocarp without damaging the quality of the oil, however, the plant is very expensive to be installed (Swarts, 1976 and Turatti, 1985).

Rendering is done by heating the avocado pulp in avocado oil, the mesocarp evaporates and leaves the oil and other plant materials behind. After settling the oil may be decanted and the remaining slurry may be further subjected to hydraulic pressure so as to press out as much of the remaining oil as possible. A total recovery of 94 percent oil is possible. (Swarts, 1976 and Turatti, 1985).

Solvent extraction involves contacting the avocado pulp flour with the extracting solvent such as n-hexane, petroleum ether etc.

Conclusion

With the objectives of vision 2020, placing Nigeria among the largest global economics by year 2020, it becomes imperative that Nigeria must develop industrially by harnessing all available

Becoming an Entrepreneur via the Production and Sale of Avocado Oil Based on Application of Chemistry Principles

natural resources within the country for no natural resources is a waste. Industrialized nations in the world got to where they are from small scale productions, harnessing resources within them. With the high rate of unemployment in the nation, Nigerian chemist should exploit the opportunities the environment offer in other to develop the economy and meet its vision 2020 objectives. It is instructive to note that micro small and medium scale industries (MSMIS) remain the most viable type of manufacturing ventures in Nigeria because of a number of reasons including:

1. Lack of investment funds occasioned by the suspicious attitude of banks towards Nigeria entrepreneurs
2. Availability of abundant raw materials derived from Agricultural activities and mineral exploitations and the low level technology compared to the sophisticated level in the developed countries.

Because of the versatile uses of the avocado oil, its high percentage yield compared to many vegetable oils, ease the extraction by the rendering process and, all year round fruit, it places it in a higher position as an economically viable venture to go into its production and sale.

Recommendation

The avocado fruit is an all-round-the-year fruit, with oil comprising a significant proportion of the fruit. It is readily available in the country; it is mainly sold in the market for direct consumption of the flesh. In many places where the tree grows, the fruit are left to fall and rot away when the desire to eat the flesh (pulp) is not thus, constituting wastage of this economic fruit. To avoid this wastage, Nigerian chemist should take advantage of its uses, enormous benefits and cheapness to produce its oil and sell

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