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**1.0 GENERAL INFORMATION**

Consumer inclination toward health and wellness has increased with the rise in COVID-19 and other diseases. Washing hand repeatedly is not possible and is time-consuming, whereas, at times soap and water are not available everywhere, the hand sanitizer plays a vital role. Hand sanitizer is a liquid used to kill germs instantly, without water. It contains alcohol, such as ethyl alcohol as an active ingredient that acts as an antiseptic. It kills almost all bacteria, viruses and fungi within a few seconds. Improvement in standard of living, the rise in health expenditure and the increase in health awareness have increased the usage of hand sanitizer. The center for disease control and prevention, a federal agency in the U.S., has conducted health promotion, prevention, and preparedness for improving the overall health of the consumer. The support from WHO, FDA towards the need for sanitation has constantly increased the demand for sanitizer. The center for disease control recommends washing hands with soap and water whenever possible because hand washing reduces the amounts of all types of germs and chemicals on hands. But if soap and water are not available, using a hand sanitizer with at least 60% alcohol can help you avoid getting sick and spreading germs to others.

Types of Sanitizers

Hand Sanitizer is extremely effective in killing bacteria, fungi and viruses. Hand sanitizers are popularly known as hand antiseptic, hand rub, or antiseptic hand gel. There are various type of sanitizers such as Alcohol based sanitizers (Isopropyl/Ethanol), Ammonia based sanitizers (Benzethonium/Benzalkonium Chloride), Silver/Iodine based sanitizers, Chlorine based sanitizers (Chlorhexidine/Cetrimonium), Triclosan based sanitizers, Essential Oil based sanitizers (Cinnamon, Clove, Thymol).

**1.1 Purpose**

The main purpose of this study is to know the different variables involved in this project and how it will be accepted on the open market.

**1.2 Scope**

This evaluation will examine the need and feasibility of meeting the demands of the public community as well as making the company profitable in any terms.

**1.3 Name of company**

Iykecube produces hand sanitizers that are in handy sizes. The founders have agreed to name the company under Iyke for he is not just one of them but a great inspiration.

**1.4 Location**

The office and manufacturing site of the company is located at wuse II Abuja . the site is way too accessible for deliveries and easy to locate.

**1.5 Brief description.**

Producing hand sanitizers is one of the ways of helping the community to reduce and avoid the spread of diseases expecially the COVID-19 virus by hand contacts. Having the best quality of such is a great help.

**1.6 Approach**

The company shall be having surveys and simulations in order to evaluate the project. To provide proper information to the public. The company will be conducting orientations in certain areas.

**2.0 CONSIDERATION**

**2.1 Objectives**

The company aims to meet the demands of the current society. The competitiveness in the present economy shall urge the company to exceed its expectations and surpass its assumptions.

**2.2 Feasibility Criteria**

**2.2.1 Market**

The target market of the project is the interacting and travelling community. Considering the current demand mostly students and workers who work everyday need the project most.

The company is having establishment on various locations like malls, supermarket and stalls. The product will also be distributed by the company’s promo dicers and agents in certain areas.

**2.3 Technical**

The manufacturing site a 500-square meter lot space with 350-square meter structure. It is a quite good size space for the production.

Since it is located not in commercial area. The price of the lot is ideal for the plant. The delivery of the products from production to distribution does not add up big on the cost since it is delivered in bulk.

Equipment’s used in the production are dispensers, mixing filling and printing machines.

The process includes the preparation of raw materials, extracting, mixing and then filling the ready-made containers with the output.

The main utility needed is the electric power. The wastes will be properly disposed.

Hand hygiene is one of the most important measured to prevent the spread of infectious diseases. It is an integral procedure in the healthcare environment. Similarly, it is very important for the community as well. As per an estimate, simple hand washing can save about one million lives per year. As a result of rising awareness about hand hygiene and its benefits, there has been a constant increase in demand of hand sanitizers. To meet the high demands of the hand sanitizers, a wide range of high-tech hand sanitizer manufacturing mixer & liquid filing machines are available.



**Figure1: Sanitizer mixing pot (source: google images)**

**2.3.1 Hand Sanitizer Manufacturing Machine Components**

Generally, the hand sanitizer production line has hand sanitizer mixer, mixing preparation pot, working platform, control panels and essential pipes, valves and filters. Out of all components, the hand sanitizer pot is the most important device in the hand sanitizer’s production lines. It consists inner containers, outer insulation layers, steams & cooling water, temperature measuring devices, and upper sapped adjustable mixing device and material feeding & discharging device. The inner container and aquifer are made of high-quality stainless steel.

**2.4 Resources**

The raw materials needed in the production can easily be found in the market. It is also not that hard to look suppliers.

**2.5 Operational**

This project will help reduce and/or avoid the transmissions of diseases that can be transferred from person to another by hand contacts. It is also an opportunity for the company to boost the current economy.

**2.6 Organization and management study**

The company will run by a project manager. Directors of sale and marketing. There will also be an HR head to assess the efficiency of the employees.

**3.0 MARKETING**

**3.1 Name of product**

The name of the product is Iykecube’s touch hand sanitizer. The company had made the name easy to remember for it to be easy to market.

**3.2 Consumer preferences**

Handy sizes and affordable prices are attractive to most consumers. Making student and workers as the target market. The ideal option is to make the production as cheap and portable as possible.

**3.3 Uses of the product**

Various products related to sanitations have already been found on the market. Some of these products are continuing to catch the interest of the consumers.

These hand sanitizers aim to add up to the competitions. Hand sanitizers were developed for use after washing hands or for those times when soap and water are not available.

**3.4 Properties of the product.**

They are gels that contain alcohol in order to kill the germs present on the skin. The alcohol works immediately and effectively in order to kill bacteria and most viruses. Alcohol can be very drying to the skin, so most sanitisers also contain a moisturizer to minimize skin dryness and irritation. The product this company is presenting contains aloe vera which is non-toxic and not harmful to the skin.

**3.5 Location**

The company has decided to put up the manufacturing plant in an industrial area. Since the company is anticipating for further growth, extra space with less cost is highly considered.

Distribution sites sre found in shopping malls and supermarket stalls. The primary advantage of locating in malls every day. Despite the competitiveness of the environment, being visible to the market matters the most.

**3.6 Demand**

The awareness of the consumers to the rising counts in cases of diseases and illnesses caused by bacteria and viruses which is mostly transmitted by interacting in the public is a good sign to pursue the project. Most concern of the consumers nowadays is the project. Most concern of the consumers nowadays is the health. Basically, they prefer to spend much on sanitation.

**3.7 Supply**

Affordability of the product attracts most of the consumers. Since the products is made up of common raw materials, it doesn’t cost that much. The company assures that it would come cheap and affordable.

**3.8 Demand supply analysis.**

Since some similar products are just imported in the area, the company takes this as an advantage. It aims to take full control of the market.

**3.9 Marketing programs**

Spending on advertisements cost much. Taking the company as starter, it will be cosly. Making and spreading pamphlets and conducting free samples to crowded areas are the main options of the company.

**4.0 FINANCIAL FEASIBILITY**

|  |  |  |  |
| --- | --- | --- | --- |
| S/N | Description | Quantity | Value(#) |
| 1 | Land & Building Covered area of 500 Sq. Meters. on rent | L.S | 20,000 |
| 2 | Saponification Vessel, Cap: 100 Ltrs. Per batch | 1 No. | 25,500 |
| 3 | Mixing vessel, Cap:250 Ltrs per batch | 1 No. | 44,000 |
| 4 | Storage tank | 3 Nos. | 66,000 |
| 5 | Automatic Filling Machine | 1 No. | 83,000 |
| 6 | Automatic Sealing Machine | 1 No. | 17,000 |
| 7 | Shrinking Machine | 1 No. | 77,000 |
| 8 | Other Equipments | L.S | 28,000 |
| 9 | Laboratory Equipments | L.S | 60,000 |
| 10 | Installation of Machinery & equipments @ 10% of the cost |  | 40,050 |
| 11 | Preoperative Expenses | L.S | 25,000 |
|  |  | Total | 465,550 |
|  |  |  |  |

**4.1 Raw & Packing Materials per Month:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S/N | Description | Rate | Quantity(Kg) | Value(#) |
| 1 | Rosin | #150/Kg. | 625 | 93,750 |
| 2 | Castor Oil | #100/Kg. | 2500 | 250,000 |
| 3 | MCP | #180/Kg. | 1250 | 225,000 |
| 4 | Creosote Oil | #60/Kg. | 1625 | 97,500 |
| 5 | Caustic Soda | #30/Kg. | 500 | 15,000 |
| 6 | Water | L.S. | 6000 | 6,000 |
| 7 | Packing Materials viz. Bottles, Master Cartons, Bopp Tape etc. | L.S. |  | 60,000 |
|  |  |  | Total | 747,250 |

**4.2 Salary and Wages per month:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/ N.** | **Description** | **Nos.** | **Value (#.)** |
| 01. | Manager | 01 | 8,000 |
| 02. | Supervisor / Chemist | 01 | 5,000 |
| 03. | Semi – skilled labour | 03 | 9,000 |
| 04. | Unskilled labour | 06 | 15,000 |
|  |  | **Total** | **37,000** |

**4.3 Utilities per month:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N.** | **Description** | **Rate** | **Quantity** | **Value (#.)** |
| 01. | Power | #5.50/unit | 20 HP | 12,500 |
| 02. | Fuel & Lubricants |  | L.S. | 2,000 |
| 03. | Water |  | L.S. | 1,500 |
|  |  |  | **Total** | **16,000** |

**4.4 Other Expenses per Month:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N.** | **Description** | **Quantity** | **Value (#.)** |
| 01. | Rent | L.S. | 20,000 |
| 02. | Postage & Stationery | L.S. | 1,500 |
| 03. | Telephone | L.S. | 1,500 |
| 04. | Repair & Maintenance @ Rs.600 per KL |  | 7,500 |
| 05. | Insurance @ 2% of Machinery & Equipment Cost |  | 668 |
| 06. | Marketing & Traveling Expenses | L.S. | 12,000 |
| 07. | Other Misc. Expenses | L.S. | 2,000 |
|  |  | **Total** | 45,168 |

Working Capital for One Month: #747,250+ #37000+ #16000+ #45,168= #845,418

Working capital for three months: #845,418 x 3 = #2,536,254

Total Capital investment: #465,550 + #2,536,254 = #3,002,000.

**4.5 Financial analysis:**

**4.5.1 Cost of production per Annum:**

|  |  |  |
| --- | --- | --- |
| **S/N.** | **Description** | **Value (#.)** |
| 01. | Raw & Packing Materials | 8,967,000 |
| 02. | Salary & Wages | 444,000 |
| 03. | Utilities | 192,000 |
| 04. | Other Expenses | 542,016 |
| 05. | Depreciation on Machinery & Equipments @ 10% p.a. | 40,050 |
| 06. | Interest on borrowed capital @ 12 % p.a. | 360,240 |
|  | **Total** | **10,545,306** |
|  | **Or say** | **10,545,000** |

# **4.5.2 Turnover per Annum:**

Total sales value of 150 K.L. Black Disinfectant Fluid**: 11,550,000 @** #77,000 per K.L.

# Net Profit per Year :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Net Profit | = | Total turnover | - | Total cost of production |
|  |  | = | 1,15,50,000 | - | 1,05,45,000 |
|  |  | = | **10,05,000** |  |  |

# Profit Ration on Sales :

Net Profit

Profit Ratio on Sales = -------------------- x 100

Total turnover

10,05,000

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | = | -------------------- x 100 |
|  |  |  |  |  |  | 1,15,50,000 |
|  |  |  |  |  | = | **8.70 %** |

# Rate of Return (ROR) on Total Capital Investment:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | Net Profit per annum |
|  |  | ROR |  | = | --------------------------------- x 100 |
|  |  |  |  |  | Total Capital Investment |
|  |  |  |  |  |  |
|  |  |  |  |  | 10,05,000 |
|  |  |  |  | = | ---------------------- x 100 |
|  |  |  |  |  | 30,02,000 |
|  |  |  |  | = | **33.47 %** |

# **4.5.3 Break Even Analysis:**

**4.5.3.1 Fixed Cost:**

|  |  |  |
| --- | --- | --- |
| **S/N.** | **Description** | **Amount**  **(#.)** |
| 01. | Depreciation on Machinery & Equipments @ 10% p.a. | 40,050 |
| 02. | Interest on Total Capital Investment @ 12 % p.a. | 3,60,240 |
| 03. | 40 % of Salary & Wages | 1,77,600 |
| 04. | 40 % of Other Expenses | 2,16,806 |
|  | **Total** | **7,94,696** |
|  | **Or say** | **7,95,000** |

# Break Even Point (B.E.P.):

Fixed Cost

------------------------ x 100

Fixed Cost

B.E.P = 795,000

------------------------ x 100

795,000 +1,005,000

= **44.17%**