Consumption Trends of WSF and its Future Prospects in Gujarat

Dr. Harsha Rathore

Department of Business and Management, Institute of Advanced Research, Gandhinagar-382426

Received:- 07 October 2024/ Revised:- 14 October 2024/ Accepted:- 19 October 2024/ Published: 31-10-2024

Abstract— *This study explores the usage and market potential of water-soluble fertilizers (WSF) in the agricultural sector, with a specific focus on Gujarat, India. The research emphasizes the Indian market scenarios for WSF, considering factors such as population growth and the adoption of drip irrigation. The study also delves into the scope of WSF, analyzing consumption trends, farmers' awareness, and satisfaction levels in the Anand, Sabarkanta, and Katch regions of Gujarat. The research methodology involves a descriptive study design, convenience sampling, and data collection from both primary sources. The findings indicate a growing awareness & adoption of WSF among farmers, with a positive impact on crop yields.*

Keywords— Water Soluble Fertilizers, Soil fertility, Crops yield, Farmer's perception.

I. INTRODUCTION

1.1 Water Soluble Fertilizer:

Water Soluble Fertilizers are commonly used as chemical fertilizers in sprinkler/drip irrigation systems or for foliar spraying to enhance yield and improve the quality of fruits/vegetables and improve nutrient use efficiency. These fertilizers are mostly a combination of nitrogen/phosphorus/potassium/calcium/magnesium/sulphur/micro-nutrients in various ratios. High analysis fertilizers are developed according to matrix of soil fertility status, crop type, water quality, climatic conditions, etc. It is easy to determine the exact nutrient solution for the plants. Water solids should meet the following criteria: 100% Soluble in water No Inert matter High Purity Driven By R&D Nutrients in readily Available Form Sodium and Chloride Free Low Salt Index (EC = 0.9 - 1.2) Acidic pH = 5.5 - 6.5 Suitable for festination/foliar application Improve crop yields and improve product quality and nutrient use efficiency.

Fertilizer use in India is not as extensive as in developed countries. In the USA, water soluble fertilizers consumed 17% of the total fertilizers consumed in all crops in 2009 (Patel, 2011). With the adoption of drip irrigation system, fertilizers are applied through festination. In India, 100% water soluble fertilizers are mostly imported; some of the Indian companies have started to import water soluble fertilizers or liquid fertilizers, but some of the Indian manufacturers have started to produce water soluble fertilizers. There are many water soluble fertilizers developed and included by the Government of India (GOI) in Fertilizer Control Order, 1985 (FAI 2013), which can be used alone or in combination with NPK (Nitrogen-Potash-Coated) fertilizers for growth in medium stage and mono-Potassium Potash-Coated fertilizers for sugar conversion as well as disease resistance. Up to this point sixteen grades of 100 percent water solvent composts has been informed table 1 FCO endorsed supplement arrangement of 100 percent water-dissolvable manures.

Product name (Grade) Composition of nutrients (%) NPK:

- 2O5K2O S CaMgO Zn
- Potassium nitrate (13-0-45) 13 :0 :45
- Mono potassium phosphate (0-52-34) 0: 52: 34
- Calcium nitrate 15.5 18.8
- NPK (13-40-13) 13: 40: 13
- NPK (18-18-18) 18: 18 :18

- NPK (13-5-26) 13 :5 :26
- NPK (6-12-36) 6: 12: 36
- NPK (20-20-20) 20: 20: 20
- NPK (19-19-19) 19: 19 :19
- Potassium magnesium sulphate 22: 20 :18
- Mono ammonium phosphate (12-61-0) 12 :61: 0
- Urea phosphate (17-44-0) 17 :44: 0
- NPK (12-30-15) 12: 30: 15
- NPK (12-32-14) 12: 32 :14
- Urea phosphate with SOP (18-18-18) 18 :18 :18
- NPK Zn (7.6-23.5-7.6-3.5) 7.6 23.5 7.6 3.5s

Source: Fertilizer (control) order 1985 (FAI 2013).

1.2 Global Market Potential of WSF:

Water solvent composts are utilized as substance manure in sprinkler or trickle water system frameworks and for foliar splash to expand to increment yield and to work on nature of leafy foods crops. Water dis-solvable manures are for the most part thought of. The worldwide water dis-solvable manure market size was esteemed at USD 12.5 billion out of 2015 and is supposed to enlist a CAGR of 6.5% with regards to income over the gauge period. Product demand is likely to be influenced positively by rising demand for food crops, food grains, vegetables, and fruits in emerging economies like China, India, and Brazil. Flood in populace, alongside rising tendency of buyers toward sickness free and solid new leafy foods, will fuel market development throughout the next few years. There has been expanding interest for and reception of dribble water system as it saves water and is appropriate for all grounds, including undulating territory, fruitless terrains, moving geography, and regions with shallow soil layers. Rising government drives zeroed in on expanding rural result, combined with execution of different sponsorship to advance the utilization of dribble water system will emphatically affect the business. Simple application, alongside high yield efficiency, will spike item interest throughout the next few years. In leading agricultural nations, land availability has been decreasing due to rapid industrial and infrastructure development. Nations like India, China, and U.S. are seeing a critical decrease in arable land attributable to soil disintegration, urbanization, and framework improvement. Diminishing accessibility of arable land is supposed to fuel interest for water dis-solvable composts over the estimate period.

Over the forecast period, market expansion will be hampered by feed-stock price volatility. By and by, expanding speculations by key market members for improvement of climate amicable and proficient manures will set out development open doors over the course of the following couple of years.

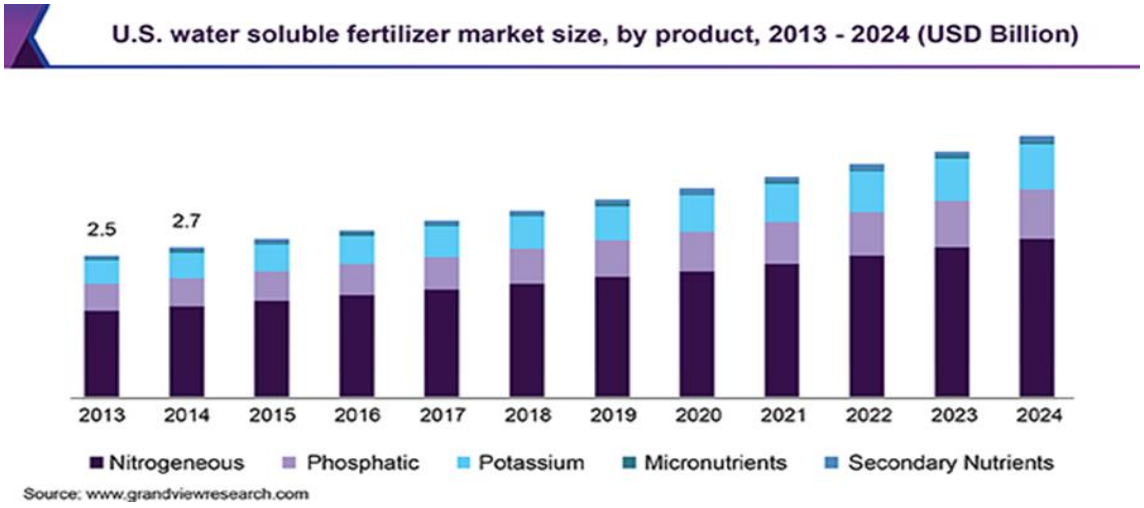


FIGURE 1: U.S Water Soluble Fertilizer Market

The worldwide water solvent manure market was esteemed at $12.52 billion of every 2016 and is estimate to develop at a consistent CAGR of 8.4% somewhere in the range of 2017 and 2024, finishing in 2024 worldwide income of $21.07 billion. Populace extension combined with rising interest for food security in creating locales is expected to stay the essential driving variable for market development over the figure period.

1.3 Indian market potential of WSF:

1) Indian water dissolvable composts market remained at $ 12.7 billion of every 2018 and is projected to reach $ 20.6 billion by 2028. Expected development in the market can be credited to expanding urbanization which is bringing about rising development exercises because of which arable land for development is diminishing. Additionally, soil deficiency of essential micronutrients and subsequent rise in demand for micronutrients like Zn, Fe, and others, to help plant development is emphatically impacting the interest for water solvent manures in the country.

2) Moreover, ranchers are leaning toward trickle water system as it lessens cost of harvest development by practically 30% other than expanding the typical efficiency of products of the soil by practically 40%. This element is further liable to push the interest for water solvent manures before very long.

The Indian water solvent composts market is constrained by these significant producers and merchants, to be specific, Coromandel Worldwide Restricted, DCM Shriram Homestead Arrangements, Indian Ranchers Manure Agreeable Restricted (IFFCO), Nagarjuna Manures and Synthetics Ltd., Gujarat State Manures and Synthetic compounds Ltd., Zuari Agro Synthetic substances Ltd., Aries Agro Restricted, Rashtriya Synthetics and Manures Restricted, Yara Manures India Pvt Ltd, and Deepak Composts and Petrochemicals Organization Ltd.

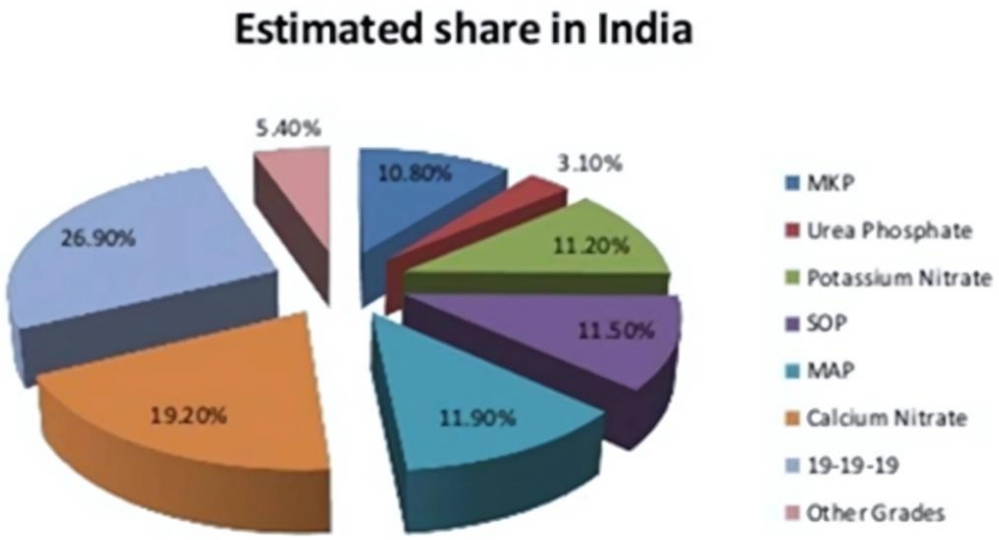


FIGURE 2: Pan India Estimated Share of important grades of WSF in total consumption

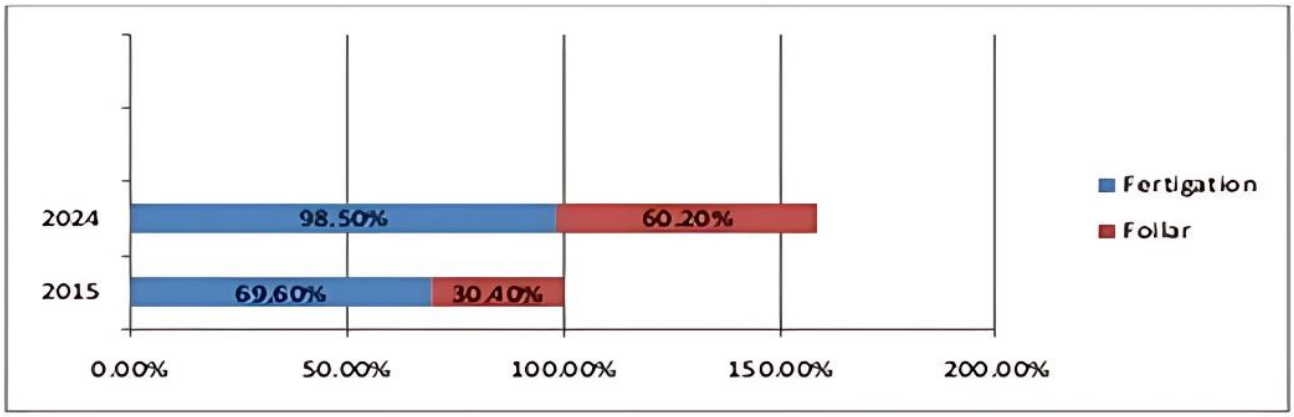


FIGURE 3: WSF market application movement analysis

FIGURE 4: Some of the WSF fertilizers

II. SCOPE OF THE STUDY

The scope of the study to consumption trends and future market towards WSF and farmer's perception and satisfaction level towards WSF in Anand, Sabarkanta, katch region of Gujarat.

2.1 Objectives:

- To know consumer awareness towards WSF in Gujarat.
- To identify the uses of WSF in Gujarat.
- To study the consumption trends of WSF in Gujarat.
- To study the factors which are influencing on purchase decision of WSF.
- To study the scope Micronutrient in Gujarat state.
- To study the problems regarding WSF consumption in Gujarat
- To study the suggestions of Dealer/retailers & farmers for increase market potential of WSF.

III. RESEARCH METHODOLOGY

Following a methodical and scientific approach to presenting and interpreting the study's or investigation's findings is crucial to achieving the study's goals. This section on system comprises of the subtleties of the portrayal of the review region, the testing strategy, nature and wellsprings of information, the scientific devices and methods utilized and other data to help the current outcomes like auxiliary wellsprings of data expected to keep the per user gathered for reference and documentation. The approach section is examined under the accompanying heads.

3.1 Methodology Used:

The descriptive study design was used, and the Random Convenience Sampling Method was used for the sampling. The review directed has been finished by addressing ranchers and sellers both.

- For essential information assortment around 301 ranchers and 71 Vendors and Retailers were addressed.

- In the wake of meeting both essential and auxiliary wellsprings of information, examinations was finished
- After examination discoveries and idea were planned.

3.2 Nature and wellsprings of information:

To assess the targets of the review, information was gathered from both essential and auxiliary sources.

3.2.1 Primary Data:

The essential information frames a significant part of any exploration examination. As the review centers on utilization patterns of WSF and its future possibilities in Gujarat and conduct of ranchers towards the reception of brands, the faithfulness of ranchers. Subsequently, more noteworthy push was given to gather data at rancher's level. Nevertheless, the number of farmers, their issues, and so on were also significant, and the primary data were absolutely necessary to collect. The essential information was gathered utilizing an organized survey enveloping various factors/boundaries which could make sense of their mindfulness and fulfillment of the ranchers.

3.2.2 Secondary Data:

As the exploration study centers around the perspectives, for example, assessing of Brand mindfulness and furthermore a portion of the data connecting with the quantity of ranchers in each Locale, amounts took care of, the job of divisions, the factual information and so on. Were especially expected to take a portion of the examination cycle. As a result, the necessary secondary data were gathered from company representatives, books, magazines, and the internet.

3.3 Sampling design:

Test populace was chosen haphazardly from various harvests for the most part vegetable and plant crops developing in Gujarat district. A multistage irregular inspecting as well as comfort testing was taken on as proper examining method for the review.

3.3.1 Sample Size:

An example size of 301farmer was taken from various district of Gujarat like Sabarkanta, Anand, Katch and all out 71 wholesalers and retailers were consulted. The area of venture fruition in Gujarat locale

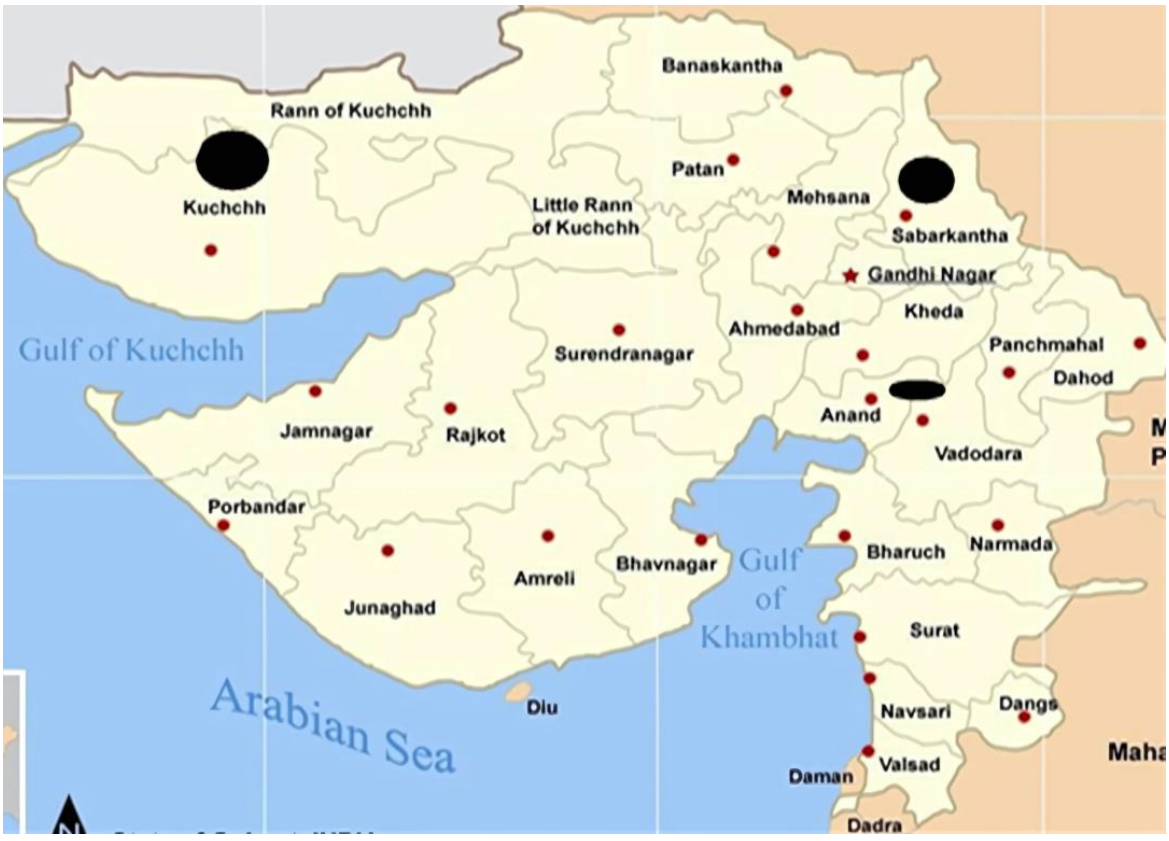


FIGURE 5: Depiction under concentrate on region.

a) **Research Design:** Nature The research design was created with the intention of collecting qualitative and quantitative data.

b) **Data Sources:** Essential Wellspring of information was Ranchers and vendors. Optional Wellspring of information was through true sites, research papers and Perusing material given by Task guide, Head of exposure and special divisions.

c) **Research Instrument:** Very much organized shut and unconditional poll and direct meeting technique is followed.

d) **Instrument of Data collection:** Questionnaires.

e) **Sample units:** Data is collected from Farmers

f) **Sample area:**

TABLE 1
SAMPLE AREA

District	Tahsil	Village
Sabarkatha	Himmatnagar, Idar, Prantij, Kapadganj, Bayad	10
Gandhinagar	Dehgam	4
Mehsana	Vijapur	4
Anand	Anand, Sojitra, Petlad	13
Kutch	Bhuj, Bachhau, Nakhatrana	5

g) **Sampling Method:** Random type of convenient sampling method for farmer is followed.

- **Sample size: Farmers –** 301, Dealers - 71
- **Period of study –** 3 months

3.4 Assumption:

- Respondents will reaction accurately.
- Respondents will answer with practically no inclinations and they will co-work at every single level of the meeting and the study.
- The administrations given by organizations make an impact on stock kept up with by seller of items.
- The perception of farmers is influenced by the services provided by various businesses; like prompt delivery, no billing disputes, and regular meetings.

3.5 Limitations of the review:

- The study was finished in restricted topographical region. As a result, the results cannot be considered representative of the district as a whole.
- Farmers and sellers who answered the inquiries might not have been valid in responding to different inquiries and might be one-sided to specific different inquiries. Some of ranchers and sellers were not able to share their perspectives on certain inquiries.

IV. DATA INTERPRETATION AND INFERENCES

Information examination and surmising's is a significant stage in report composing. The information after assortment must be handled and examined as per the blueprint set down for the reason at the hour of fostering the examination plan. This is

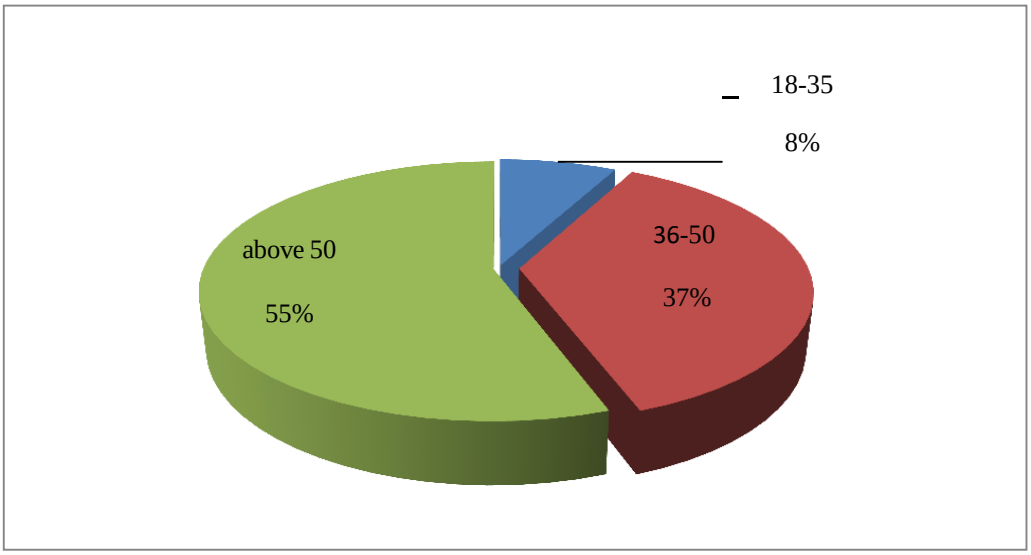
fundamental for a logical report and for guaranteeing that we have all significant information for making mulled over correlation and examination. In fact talking handling suggests altering, coding, order and classification of gathered information with the goal that they are manageable to examination.

4.1 Age of farmer:

From the below graph 4.1, 55% of the farmers are above 50 years old and 37% of between 36- 50 years while young farmers are about 8% between 18-35 years old. From above graph the middle age 36-50 years old farmers are quite increasing while youngster that is between the ages of 18-35 attracted towards farming.

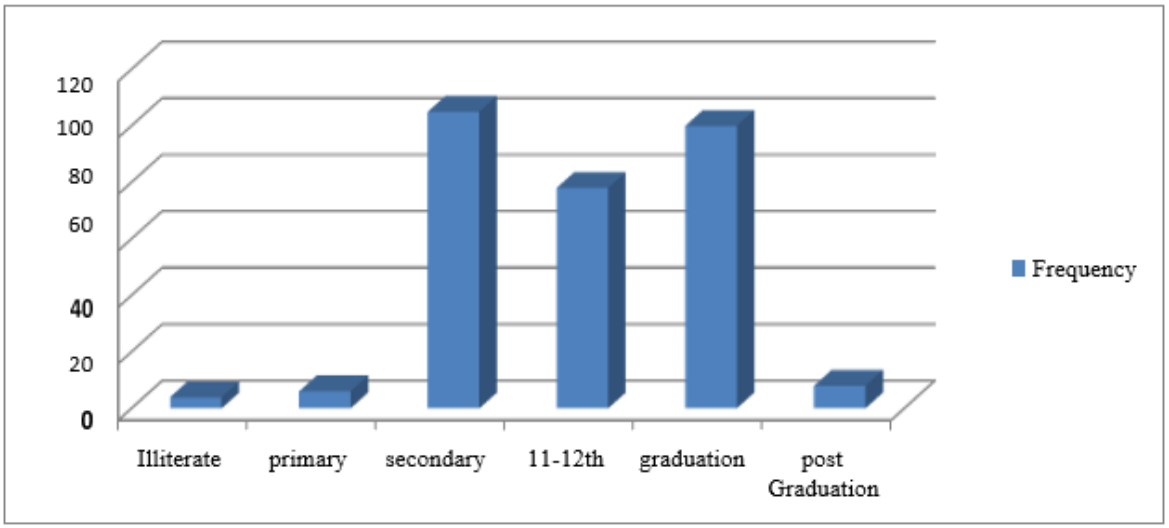
TABLE 2
AGE OF FARMER

Particular	Frequency	Percentage
18-35	23	8
36-50	111	37
above 50	167	55



GRAPH 4.1: Age of farmers

4.2 Education:



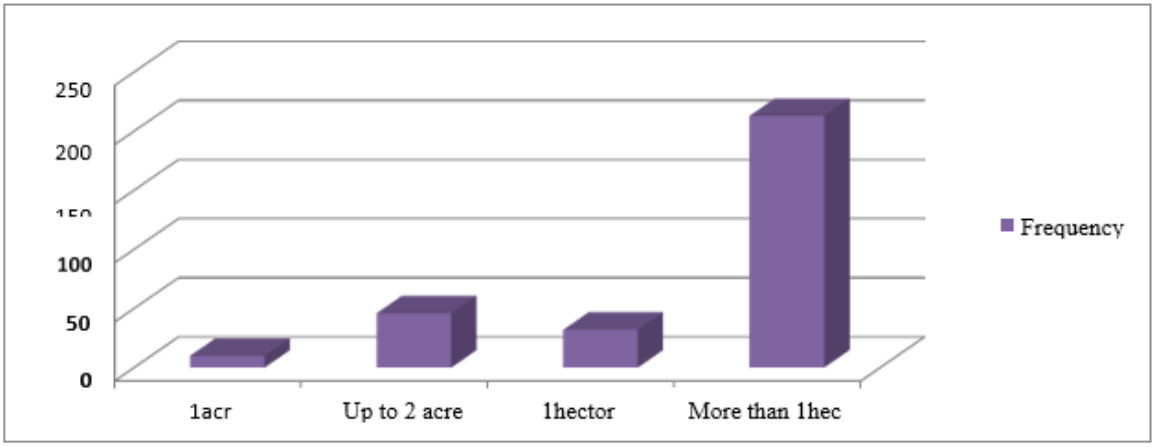
GRAPH 4.2: Education

TABLE 3
EDUCATION

Particulars	Frequency	Percentage
Illiterate	4	1
Primary	6	2
secondary	105	35
11-12th	78	26
graduation	100	33
Post-graduation	8	3

Literacy level of farmer always helps to increase his standard of living, he is ready to accept new technology in farming system. From above graph 4.2, 35% of farmer did secondary education, 33% are graduates, 26% farmers did higher secondary education, 3% are post graduate, 2% did primary education and 1% are illiterate. From this sample size its good literacy level ratio, farmers are always willing to accept new farming techniques.

4.3 Total land holdings:



GRAPH 4.3: Land Holding

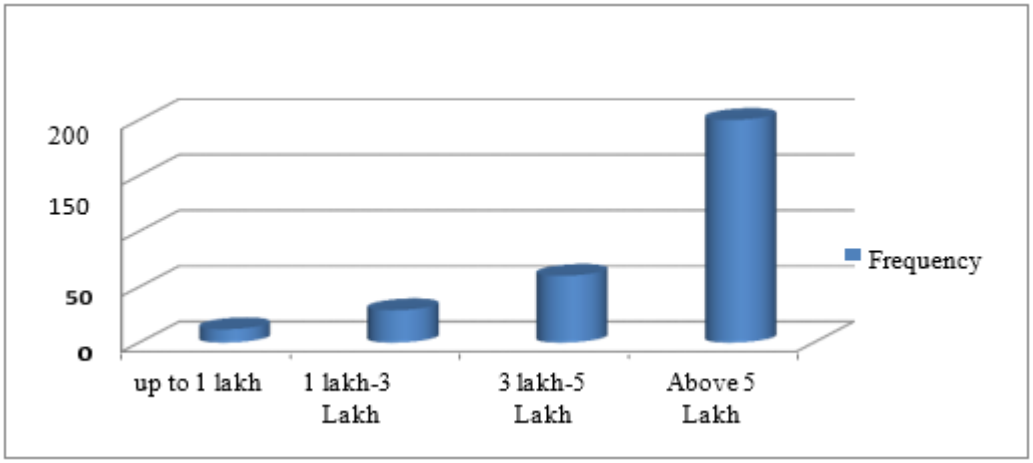
From the above graph 4.3. From the sample size most of the farmers have large land 71% farmers have more than 1hec land specially in kutch side most of the farmers are very big land.15%farmers have upto 2 crore land, 11% farmers have 1hec land and 3% farmers have 1acre of land. From sabarkantha, Anand, Kutch region all type of that is small farmer, marginal farmer, large farmers are seen

In that all three regions various cropping pattern are followed by the farmers in sabarkanta region mostly vegetable crops are taken by farmers from that small and marginal farmer make their benefits. In Anand region mostly chilly, Banana, paddy and others crop taken by most of thesmall and marginal farmers. While in kutch region most of the farmers have big land they mostlycultivate horticulture crops like mango, pomegranate, date palm etc.

TABLE 4
TOTAL LAND HOLDINGS

Particulars	Frequency	Percentage
1acr	10	3
Upto 2 acre	46	15
1hector	32	11
more than 1hec	213	71

4.4 Annual Income of the Farmer:



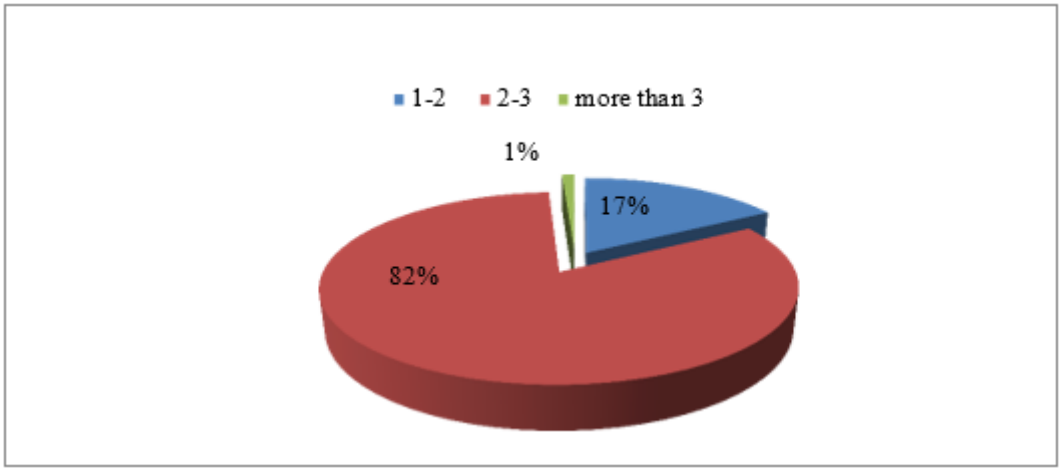
GRAPH 4.4: Annual Income

From the above graph 4.4, the income of the farmer is quite good mostly high income from vegetable and horticulture crops. 4% farmers have low income i.e. upto 1lakh, 10% farmers have 1lakh-3lakh income, 20% have 3lakh-5lakh and 66% farmer have more than 5 lakh income from the farming.

TABLE 5
ANNUAL INCOME

Particulars	Frequency	Percentage
upto 1 lakh	12	4
1 lakh-3 lakh	29	10
3 lakh-5 lakh	60	20
above 5 lakh	200	66

4.5 How many crops grows in a year?



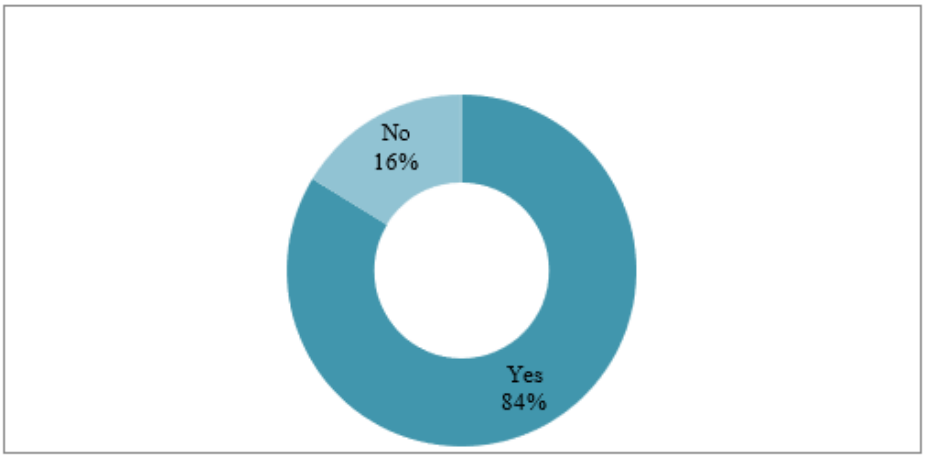
GRAPH 4.5: Crop Growth

From the above graph 4.5, 1% of the farmers cultivate more than 3 crops in year, 17% farmerscultivate 1-2 crops in a year and 82% of farmers cultivate 2-3 crops in a year because of enough source of irrigation mostly from bore well.

TABLE 6
CROP GROWTH

Particulars	Frequency	Percentage
2-Jan	50	17
3-Feb	248	82
more than 3	3	1

4.6 Do you use WSF fertilizer?



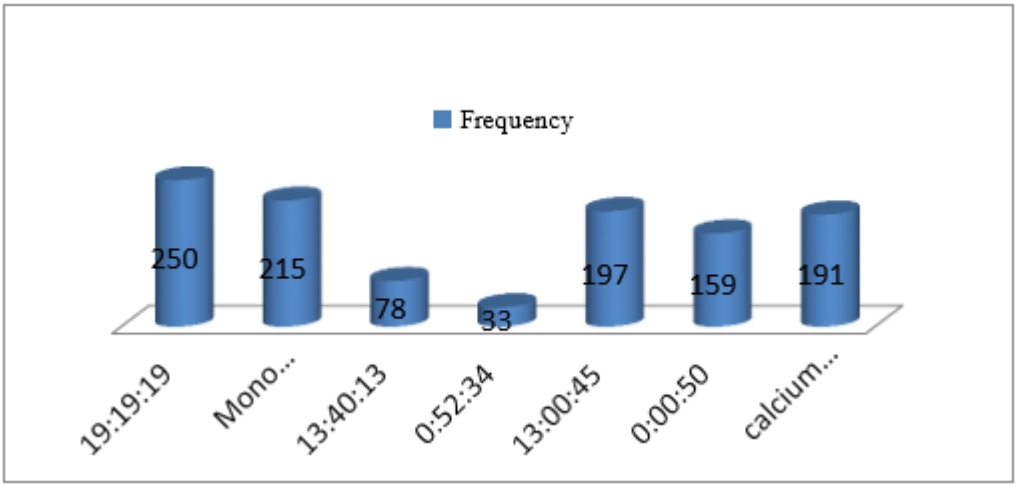
GRAPH 4.6: WSF Fertilizer

From the above Graph 4.6, 84% of farmers from the sample size are using WSF and 16% are not use WSF yet. From this we can conclude that due to enough irrigation facility Most of thefarmers Using WSF. So from this graph we have great market Potential for WSF in future.

TABLE 7
WSF FERTILIZER

Particulars	Frequency	Percentage
Yes	252	84
No	49	16

4.7 Which type of WSF grade do you use?



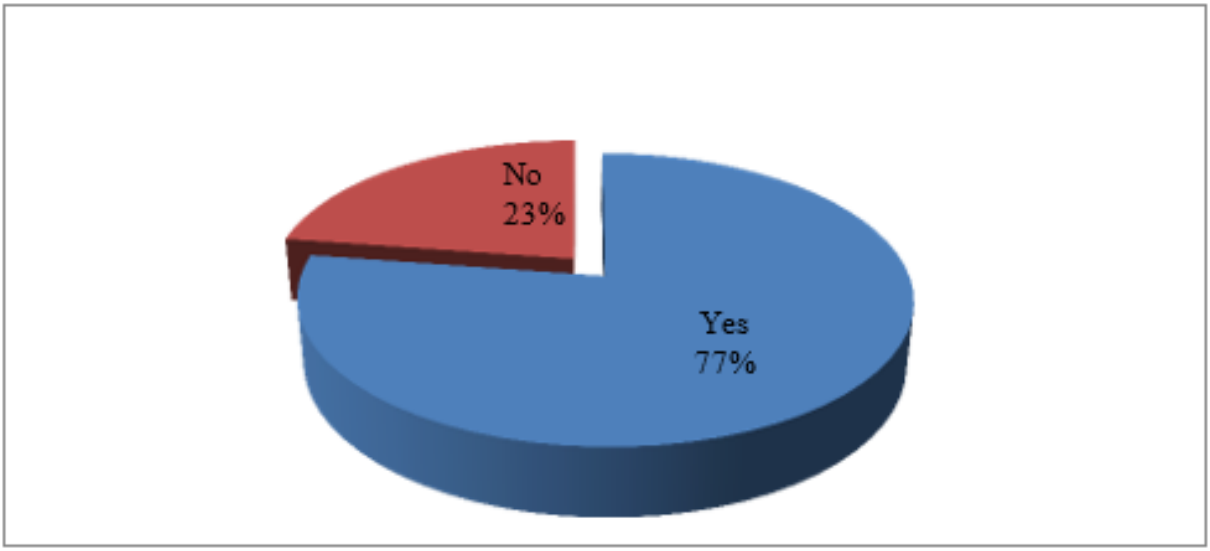
GRAPH 4.7: WSF Grade

From above graph 4.7, the WSF Grade is 19:19:19 is 22%,12:61:00 is19% of farmers are used,13:40:13 is 7% of farmers use, 00:52:34 is 3%,13:40:45 is 18%, 00:00:50 is 14%,Calcium nitrate is 17% of farmers are used.

TABLE 8
WSF GRADE

Particulars	Frequency	Percentage
19:19:19	250	22
Mono-ammonium phosphate	215	19
13:40:13	78	7
0:52:34	33	3
13:00:45	197	18
0:00:50	159	14
calcium Nitrate	191	17

4.8 Do you change WSF brand regularly?



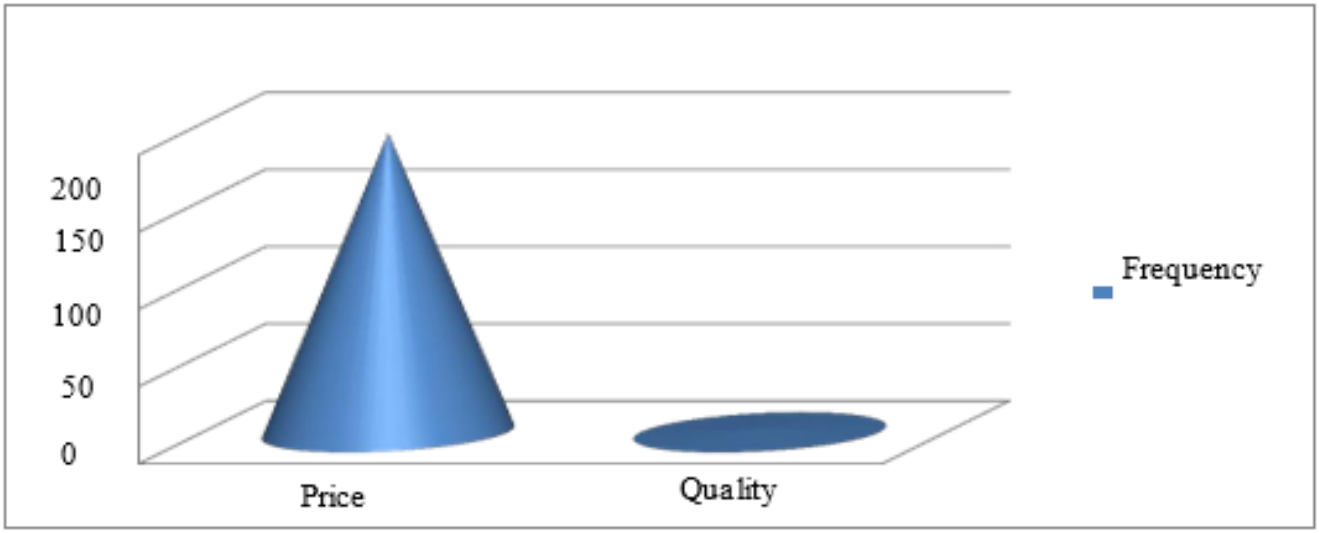
GRAPH 4.8: WSF brand regularly

From above graph 4.8, from the given sample size 77% of farmers regularly change theWSF farmers and 23% of farmers not change WSF brand.

TABLE 9
WSF BRAND REGULARLY

Particulars	Frequency	Percentage
Yes	195	77
No	57	23

4.9 Why do you change WSF brand?



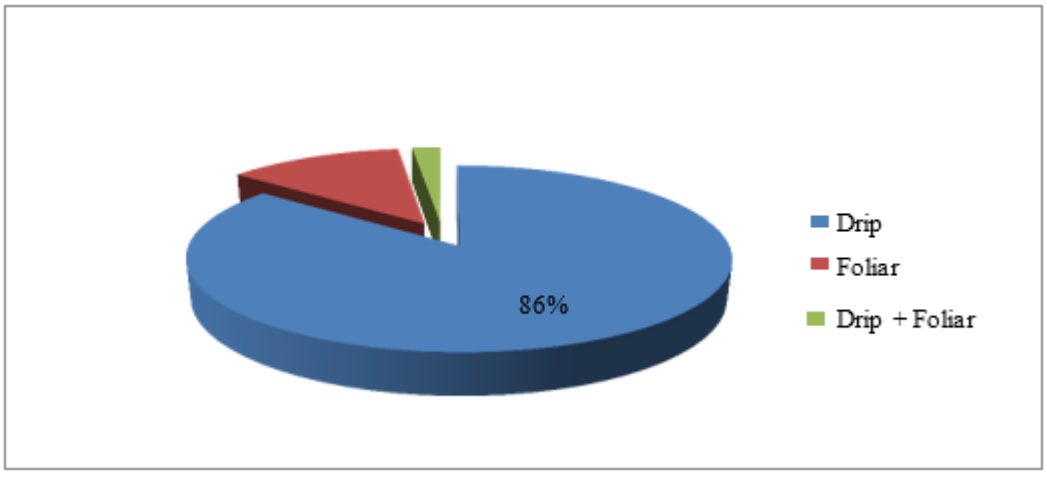
GRAPH 4.9: Factor influencing change in WSF brand

From the above graph 4.9, it clearly shows that 98% of farmers change WSF brand due to the price, price is the most important factor to change in WSF brand and only 2% of farmers change WSF brand due to quality while availability and others factors are not affect to change in WSF brand.

TABLE 10
FACTOR INFLUENCING CHANGE IN WSF BRAND

Particulars	Frequency	Percentage
Price	194	98
Quality	3	2

4.10 How do you apply WSF in your crop?



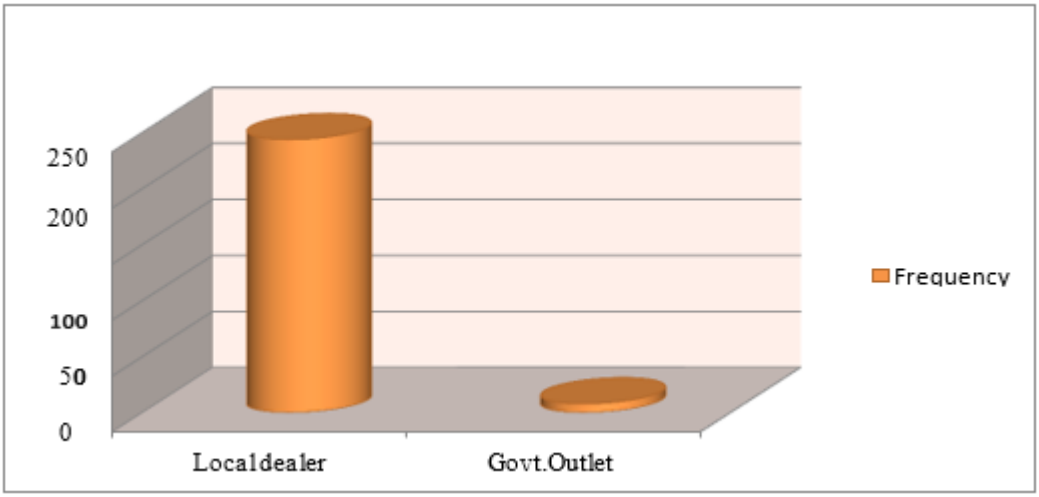
GRAPH 4.10: Application of WSF

From the above graph 4.10, 86% farmers used drip irrigation for the application of WSF,12% of farmers use foliar irrigation for the application of WSF and only 2% of farmers use drip + foliar for application WSF. Here in Gujarat highly drip irrigation followed by farmers so itis good for application of WSF and health of the plants.

TABLE 11
APPLICATION OF WSF

Particulars	Frequency	Percentage
Drip	216	86
Foliar	31	12
Drip + Foliar	5	2

4.11 Where you purchase WSF?



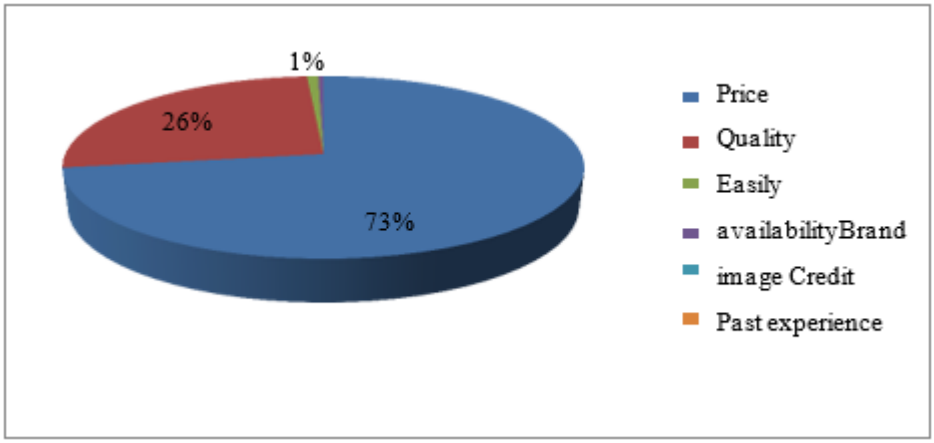
GRAPH 4.11: WSF Purchase

From above graph 4.11, 97% of farmers purchase WSF brand from local dealers and only 3% of farmers purchase WSF brand from Govt. outlets.

TABLE 12
WSF PURCHASE

Particulars	Frequency	Percentage
Local dealer	244	97
Govt. Outlet	8	3

4.12 Which factor do you consider during buying WSF?



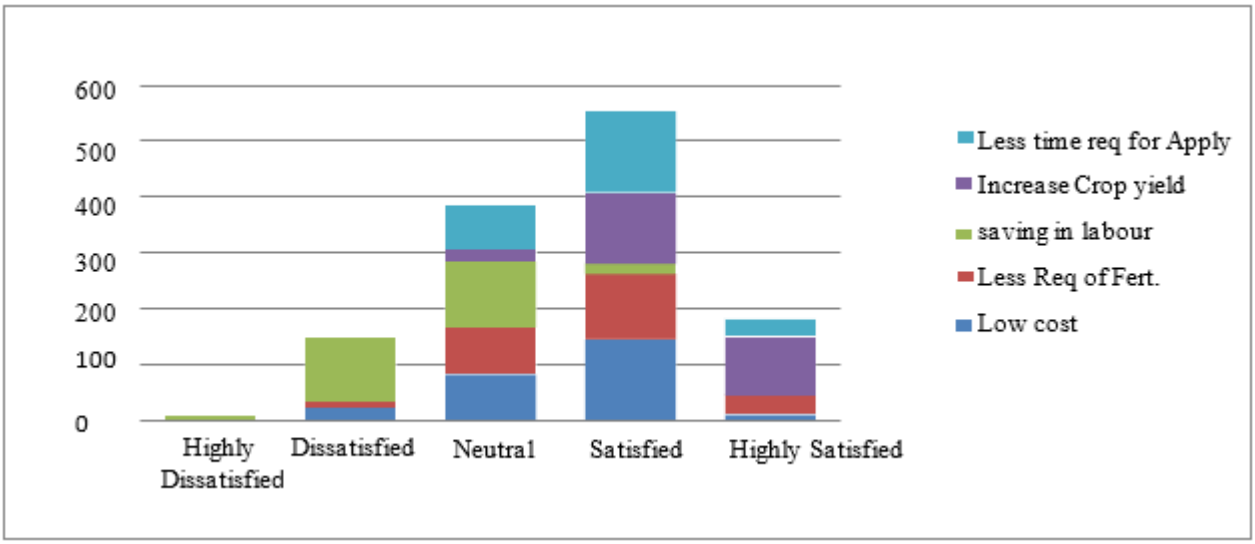
GRAPH 4.12: Factor influencing buying WSF

From the above graph 4.12, it shows the 73% of farmers from the sample size is mainly influence by the price during the buying of WSFs while 26% of farmers influence by quality and very few farmers influence by other factor. Most of the farmers are as per price change their buying behavior of WSFs.

TABLE 13
FACTOR INFLUENCING BUYING WSF

Factors	Price	Quality	Easily availability	Brand image	Credit	Past experience
Rank 1	183	66	2	1	0	0
Rank 2	64	156	23	9	0	0
Rank 3	2	26	49	172	1	3
Rank 4	3	4	174	60	5	5
Rank 5	0	0	3	9	89	151
Rank 6	0	0	1	1	157	93

4.13 How satisfied are you with the following aspects of WSFs:



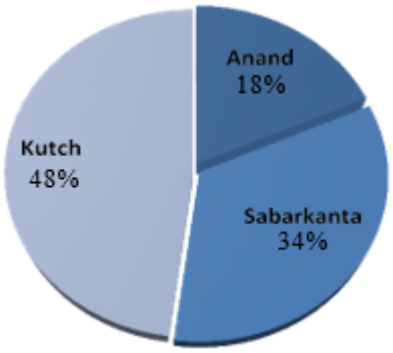
GRAPH 4.13: Satisfied aspects of WSF

From above graph 4.13, most of the farmers are satisfied with low cost ,some are neutral about less requirement of fertilizers, most of farmers are dissatisfied about saving in labour that is labour cost and labour are not related to using WSF. Labour requirement varies as per the crops and farmers. Most of the farmers satisfied with increase in crop yield by using WSF and also satisfied with relation WSF application and less time required for application. But in this type of question the major limitation is the decision varies as per the farmers views so it cannot be predicted completely.

TABLE 14
SATISFIED ASPECTS OF WSF

Parameters	Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied
Low Cost	2	22	80	142	8
Less req. of fertilizers	0	11	86	119	36
Saving in labour	4	112	117	19	0
Increase Crop yield	0	0	22	126	104
Less time required for apply	0	0	77	146	29

V. DEALERS AND RETAILERS SURVEY:

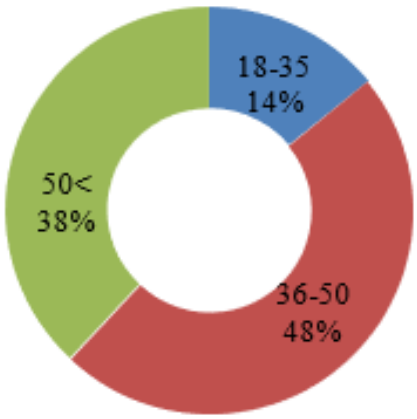


GRAPH 5: Region

TABLE 15
AGE OF FARMER

Region	Percentage
Anand	18%
Sabarkantha	34%
Kutch	48%

5.1 Age of Respondent:



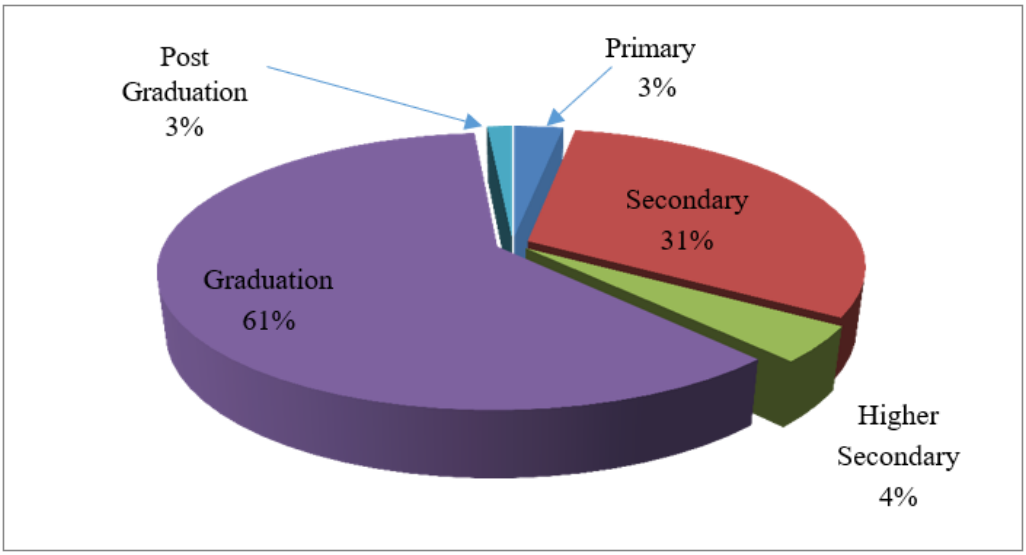
GRAPH 5.1: Age of dealers

From the above graph 5.1, 38% of dealers are above age of 50 years, 48% of dealers are between 36-50 years old and 14% dealers are youngsters, it makes agriculture better and new innovations new products are easily convey to the farmers.

TABLE 16
AGE OF FARMER

Particulars	Frequency	Percentage
18-35	10	14
36-50	34	48
50<	27	38

5.2 Education:



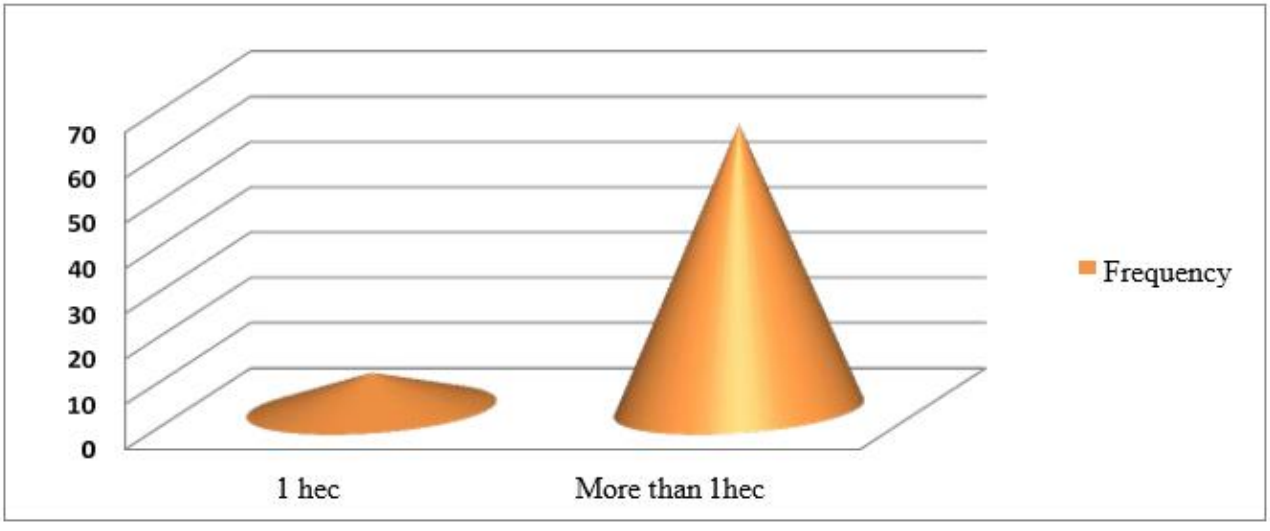
GRAPH 5.2: Education

From the above graph 5.2, 61% of dealers are graduate 1% are post graduate,3% of dealers are did primary education,31% of dealers did secondary education and 4% did higher secondary education.

TABLE 17
EDUCATION

Particulars	Frequency	Percentage
Primary	2	3
Secondary	22	31
Higher secondary	3	4
Graduation	43	61
Post-graduation	1	1

5.3 Land holdings:



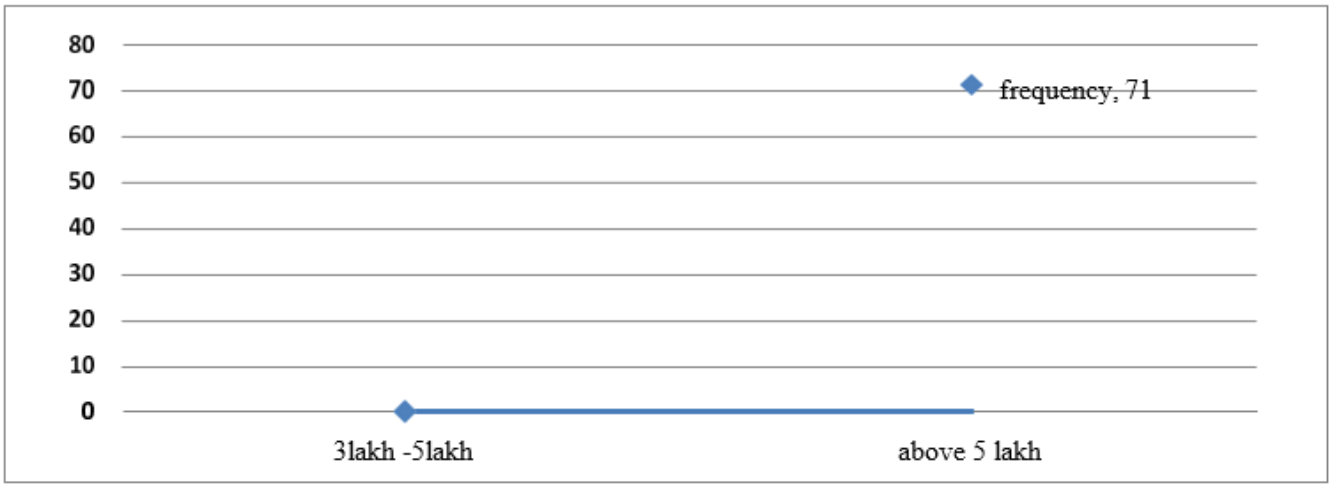
GRAPH 5.3: Land holding

From the above graph 5.3, 11% of dealers have upto 1hector land and 89% of dealershave more than 1hector of land.

TABLE 18
LAND HOLDING

Particulars	Frequency	Percentage
1 hec	8	11
more than 1hec	63	89

5.4 Annual Income:



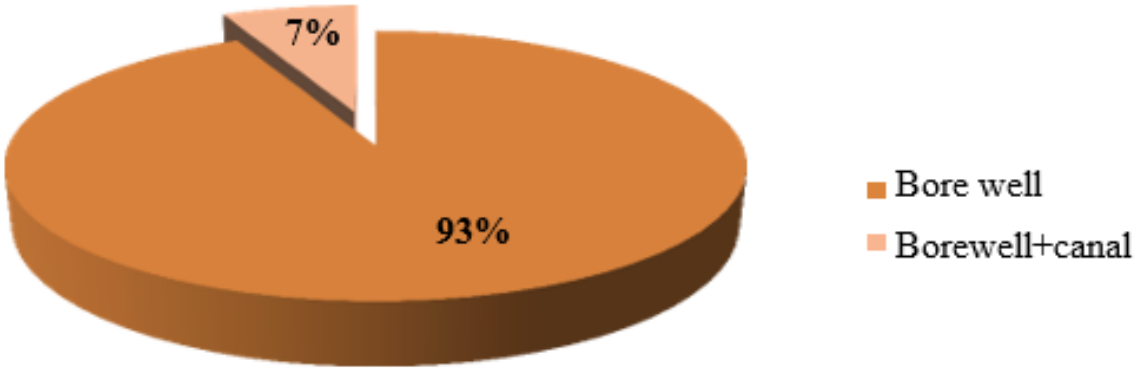
GRAPH 5.4: Annual Income

From the above graph 5.4, according to given sample size in that 100% of dealers haveabove 5 lakh of yearly in income.

TABLE 19
ANNUAL INCOME

Particulars	Frequency	Percentage
3lakh -5lakh	0	0
above 5 lakh	71	100

5.5 Source of irrigation:



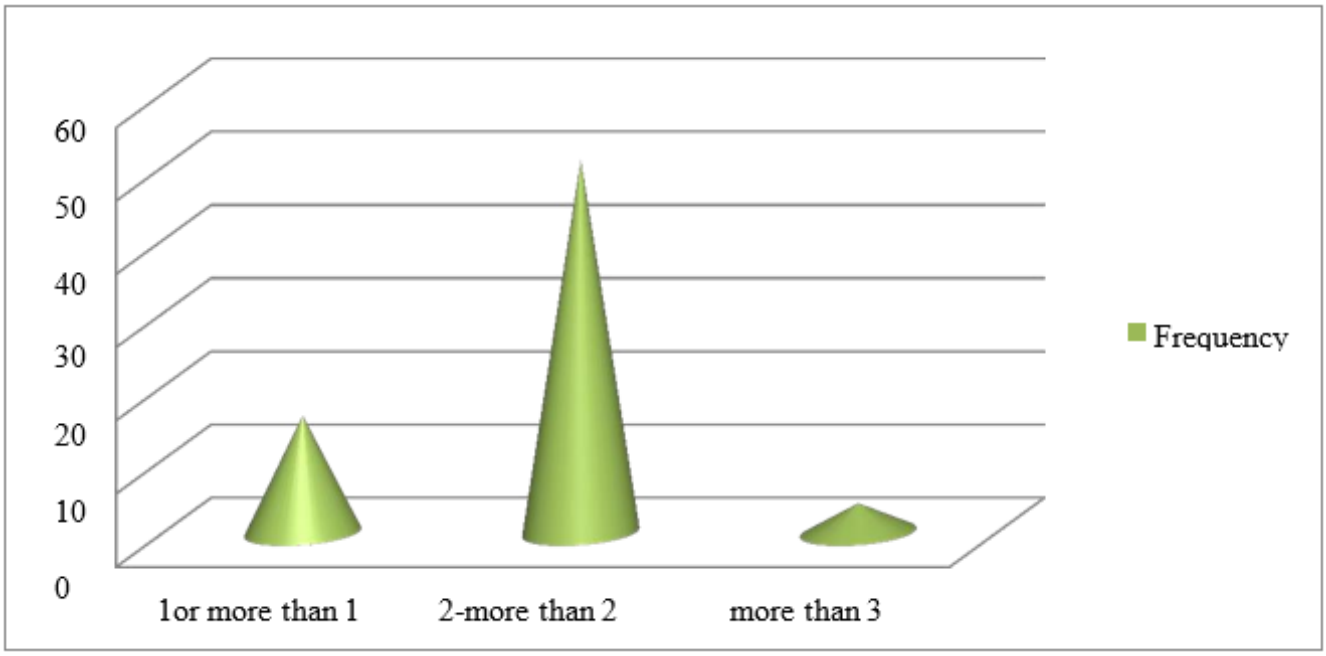
GRAPH 5.5: Source of Irrigation

From the above graph 5.5, 93% of dealers use bore well as source of irrigation and7% of dealers use bore well +canal use for irrigation.

TABLE 20
SOURCE OF IRRIGATION

Particulars	Frequency	Percentage
Bore well	66	93
Bore well +canal	5	7

5.6 How many crops grow in a year?



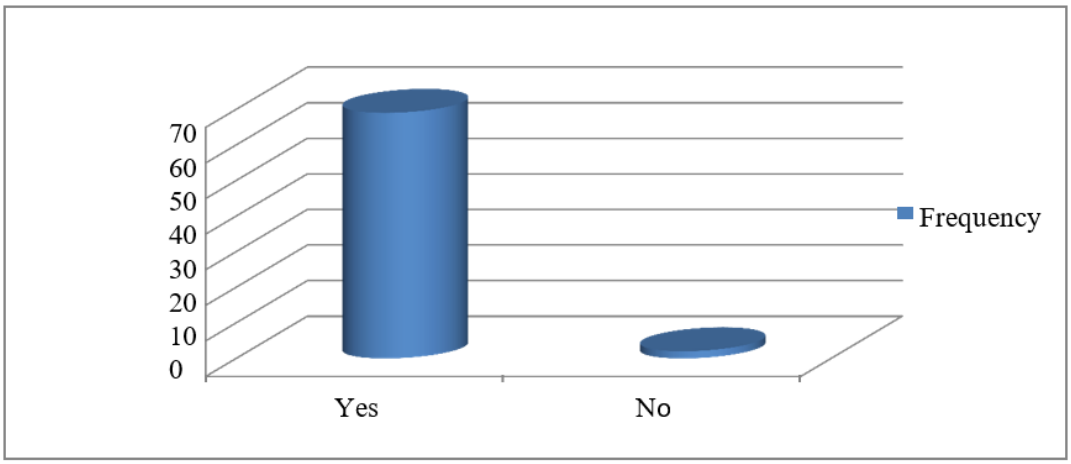
GRAPH 5.6: Crops in a year

From the above graph 5.6, according to the sample size 22% dealers cultivate 1 ormore than crop, 72% have 2 or more than 2 crops and 6% have more than 3 crops in a year.

TABLE 21
CROPS IN A YEAR

Particulars	Frequency	Percentage
1or more than 1	16	22
2-more than 2	51	72
more than 3	4	6

5.7 Do you use WSF?



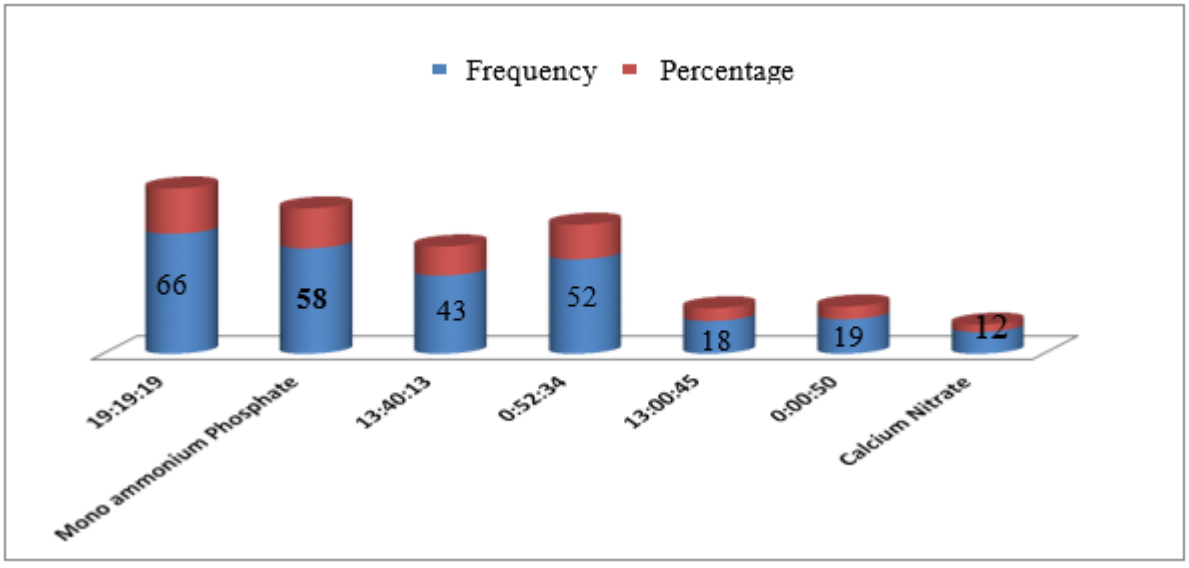
GRAPH 5.7: WSF use

From the above graph 5.7, 97% of dealers use WSF and 3% are not use WSF brand. So that here we can state that most of dealers can increase the WSF Sale in future.

TABLE 22
WSF USE

Particulars	Frequency	Percentage
Yes	69	97
No	2	3

5.8 Which type of WSF grade do you use?



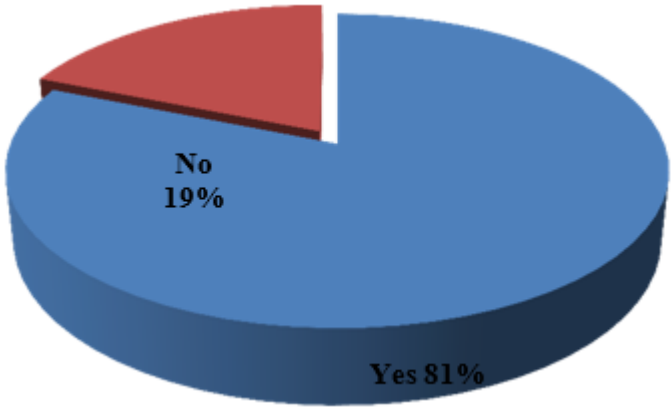
GRAPH 5.8: WSF Grade

From the above graph 5.8, according to sample size,25% use of 19:19:19, 22% use of monoammonium phosphate,16% of use 13:40:13,19% of use 0:52:34, 7% of use 13:00:45, 7% of use of 00:00:50, 4% of use calcium nitrate.

TABLE 23
WSF GRADE

Parameters	Frequency	Percentage
19:19:19	66	25
Mono-ammonium Phosphate	58	22
13:40:13	43	16
0:52:34	52	19
13:00:45	18	7
0:00:50	19	7
Calcium Nitrate	12	4

5.9 Do you change WSF brand regularly?



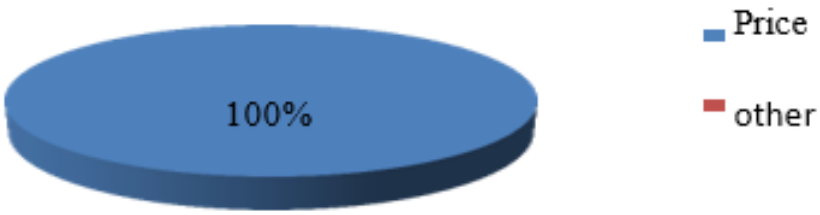
GRAPH 5.9: Change WSF brand

From above graph 5.9, 81% dealers are change WSF brand while 19% dealers notchange the WSF brand they use.

TABLE 24
WSF BRAND

Parameter	Frequency	Percentage
Yes	56	81
No	13	19

5.10 Why do you change WSF brand?



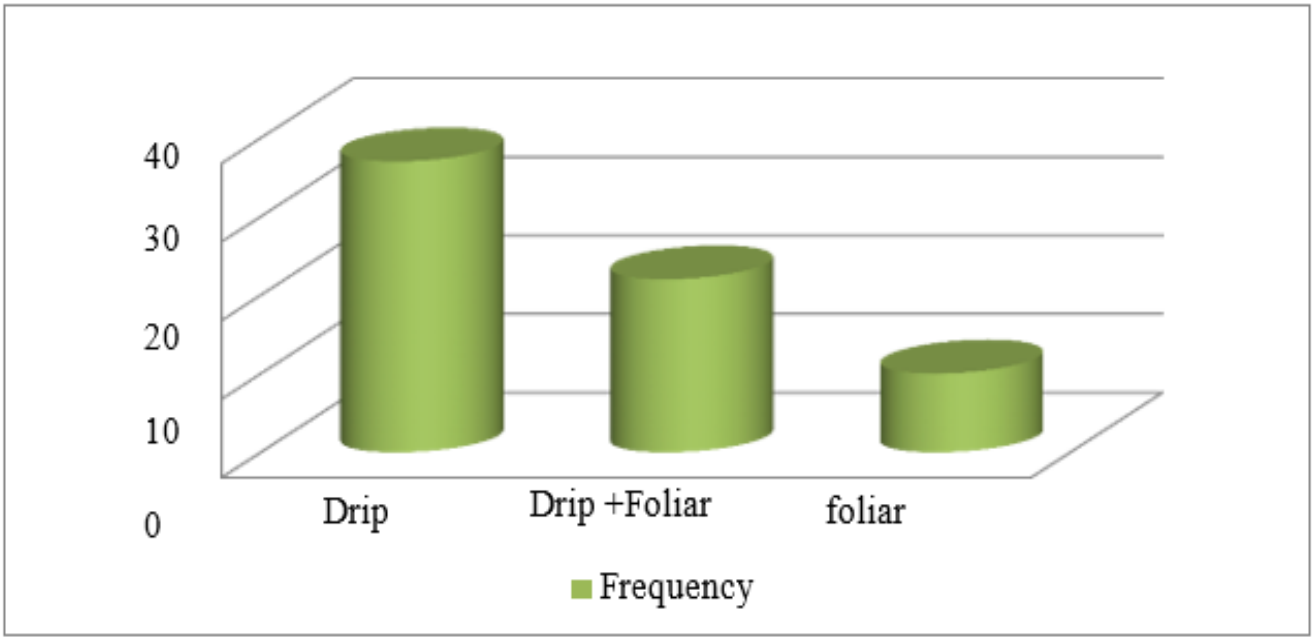
GRAPH 5.10: Factor affecting change brand

From the above graph 5.10, according sample size we can easily analyze 100% are change the WSF brand due price factor only other factors like quality and availability are not affecting towards changing the WSF brand.

TABLE 25
FACTOR AFFECTING CHANGE BRAND

Parameters	Frequency	Percentage
Price	56	100
other factors	0	0

5.11 How do you apply WSF in your crop?



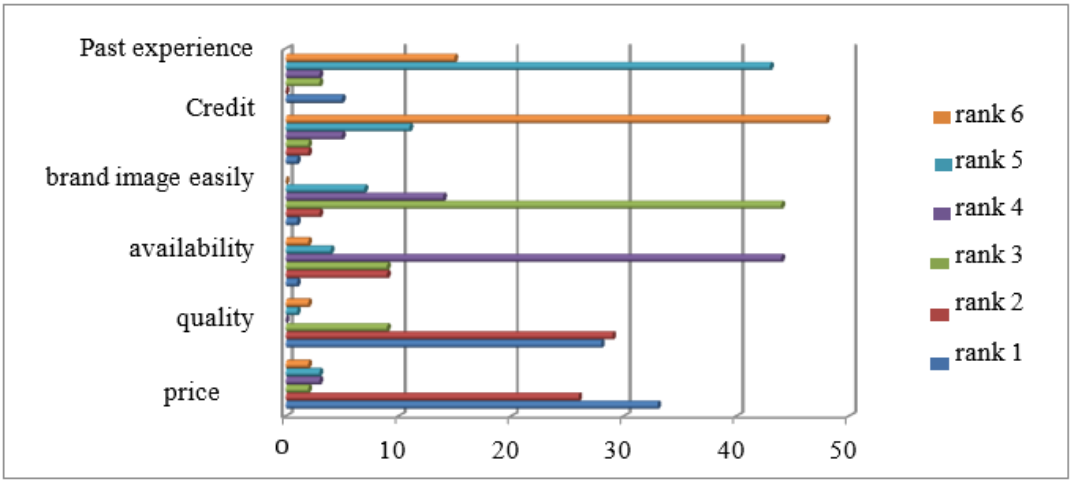
GRAPH 5.11: Application of WSF

From above graph 5.11, From the sample size 54% dealers use drip irrigation for the application of WSF, 22% are using drip + foliar irrigation for the application of WSF while 14% are using foliar irrigation for the application of WSF. From this we can analyze the land under dripirrigation increasing and we have great demand in future of WSF, most of farmers used WSF dueto irrigation facilities.

TABLE 26
APPLICATION OF WSF

Particulars	Frequency	Percentage
Drip	37	54
Drip +Foliar	22	32
foliar	10	14

5.12 Which factor do you consider during buying WSF?



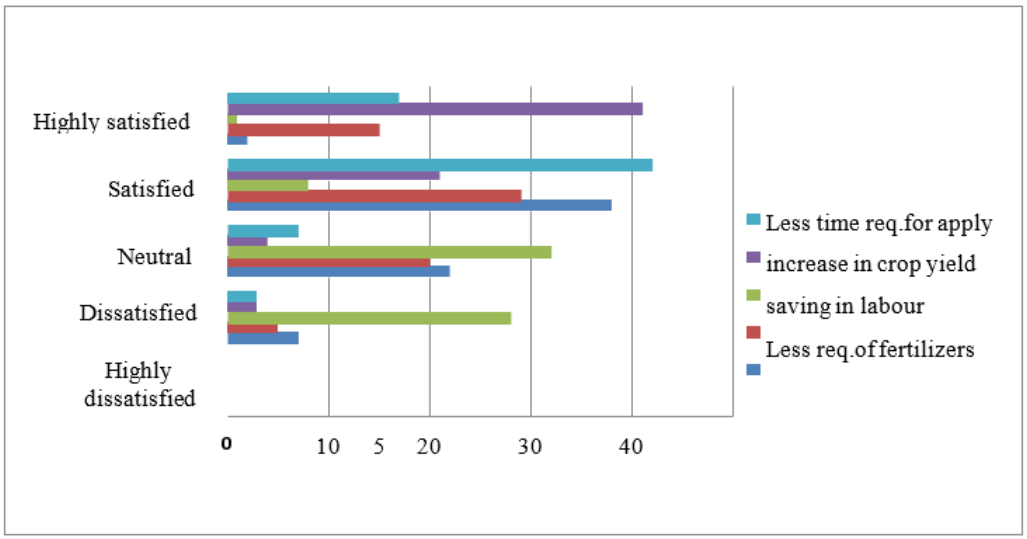
GRAPH 5.12: Factor influencing buying WSF

From the above graph 5.12, it shows that 48% of dealers change their buying behavior of WSFs due price while 41% dealers change due to quality of WSFs brand and very few dealers changes due to other factors. The main factor is price of WSFs brand that influencing the buying behavior of dealers.

TABLE 27
FACTOR INFLUENCING BUYING WSF

Factor	Price	Quality	Easily availability	brand image	Credit	past experience
Rank 1	33	28	1	1	1	5
Rank 2	26	29	9	3	2	0
Rank 3	2	9	9	44	2	3
Rank 4	3	0	44	14	5	3
Rank 5	3	1	4	7	11	43
Rank 6	2	2	2	0	48	15
Percentage	48%	41%	2%	1%	1%	7%

5.13 How you satisfied with the following aspects of WSFs?



GRAPH 5.13: Aspects of WSFs

From above graph 5.13, according respondent all has different views 38 dealers satisfied with the costing among sample size, 29 dealers satisfied with less requirement of fertilizers, 32 dealers neutral about labour saving with relation with WSF use, 41 dealers highly satisfied with increase in crop yield with the relation with WSF use and 42 satisfied with less time required for application with relation with WSFs.

TABLE 28
ASPECTS OF WSFS

Parameters	Highly dissatisfied	Dissatisfied	Neutral	satisfied	Highly satisfied
Low cost	0	7	22	38	2
Less req.of fertilizers	0	5	20	29	15
saving in labour	0	28	32	8	1
increase in crop yield	0	3	4	21	41
Less time require for apply	0	3	7	42	17

VI. FINDINGS AND RECOMMENDATIONS

6.1 Findings from farmer's survey:

Through the detail survey of farmers and dealers relates with Consumption trends ofWSF and its future prospects, I got some findings which are mention below:

1) More than 80% of farmers in Gujarat are aware about WSF.
2) 37% of farmer's age is in between 36-50 and now youngsters are also involving in agriculture.
3) No. of farmers are educated so they are easily adapting new techniques of farming.
4) 71% of farmers have more than 1 hector Maximum of land. Where they cultivate vegetables, horticultural crops cash crops and field crops.
5) More than 80% of farmers have drip irrigation, so we have great market potential towards WSF.
6) Most of the farmers have quite high annual income from vegetable and horticultural crops, so they prefer to cultivate it regularly.
7) Presently 84% of farmers, from the sample use WSF and in future the consumption and demand of WSF will be increase.
8) Most of the farmers are use all WSF grade according crops requirement.
9) More than 90% farmers purchase WSF from the local dealers.
10) Most of the farmers are highly satisfied with the increase in crop yield due to application of WSF in crops.
11) Over all farmers are well satisfied with WSFs results, they use WSF in a great manner and they also suggest to other farmers to use WSF specially in Kutch region farmers are very active and they follows all new practices on their field, so in future consumption will definitely increases.

6.2 Findings from dealer's survey:

1) Above 50% of dealers are youngsters and 60% are graduates and agri. Diploma respectively.
2) Most of them started their firm before 10-15 years, so the farmers believe them what they suggested to the farmers.
3) Most of the dealers suggested farmers use WSF which increases crop yield and farmers follow their suggestions.
4) 97% of dealers themselves use WSF on their crops.
5) Most of the dealers says more advertising is required and field demonstration from that farmers are ready to learn more about application WSF as per the stages of crop.

6.3 Recommendation:

Recommendations are always considered to be the most important part of any project report because for every pros there is a cons associated with and to reduce the effect later.

From the detail survey of farmers and dealers relates with consumption trends of WSF, followingrecommendations must be taken into consideration.

- It is suggested that WSF Company should conduct awareness campaign programmes about WSF grades for the farmers so that they can understand its benefits.
- To strengthening the market of WSFs, company should pay attention towards promotional activities in the form of field demonstrations, farmers meeting at village level to make the farmers familiar with the products.
- It is suggested that company should provide field advisor at many possible villages through that farmers are following their suggestions and familiar with WSFs and learn how to apply the WSFs at every stage of crop. From this they can mouth publicity to products to the other farmers. Mouth publicity is the best way to communicate one farmer to other.
- Company should have to improve packaging of some product. Dealers says polythene packaging product leaked sometimes, especially in micro-nutrient that is Agromin max and Boron packaging.
- Dealers and retailers are also working as like wheels of vehicle for company, so company should not neglect them. Sales indirectly depend on them because most of the farmers prefers dealers and retailers recommendations that time he use push strategy for sale of the product, so company should provide tours, refreshment gifts and yearly diaries, calendars to them.

VII. CONCLUSION

From the above whole study it can be conclude that, in Gujarat i.e. from the survey region Sabarkanta, Anand, Kutch region it shows that here all vegetables, horticultural crops, cash afield crops are cultivated in large amount.

The productivity and fertility of the land is well. The irrigation is very good most of the farmers have drip irrigation facility. And most of the farmers new techniques of farming. Most of the farmers use WSF in wide range.

Hence, there is very wide scope for WSF in Gujarat to enhance the market potential its function area, to there is no any doubt that here lots of scope to capture for WSF market. There are many companies which are putting their efforts to prove how their WSF than the others. They mainly focus on price of WSF. As per the farmers expectations companies should maintain the little bit less price of WSF and more accessible in local or village level stores. There is need of advertisements with the help of Wall paintings, shop paintings, trolley paintings etc.

From the all above detail study the present consumption of WSF is at good amount and in future the consumption trends of WSF is increase very fast at very wide area.

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