

Analysis Of Strategic Decision Of Product Line Extension By IFFCO Using The BCG Model

** Dr. A. K. Asthana*

INTRODUCTION

The fertilizer industry had a very humble beginning in 1906, when the first manufacturing unit of Single Super Phosphate was set up in Ranipet near Chennai, with an annual capacity of 6000 MT. The Fertilizers & Chemicals Travancore of India Ltd. (FACT) at Cochin in Kerala and the Fertilizers Corporation of India (FCI) in Sindri in Bihar (now Jharkhand) were the first large sized-fertilizer plants set up in the forties and fifties. Green revolution in the late sixties and thrust on self-sufficiency in food production gave an impetus to the growth of the Fertilizer industry in India. As a result, Fertilizer companies were established in the public sector, private sector and cooperative sector. Fertiliser Corporation of India, Fertilizers And Chemicals Travancore Ltd. (FACT), National Fertilizer Limited (NFL), Gujarat State Fertilizers Limited (GSFC), Rashtriya Chemicals & Fertilizers Ltd. (RCF), Madras Fertilizers Limited (MFL), Krishak Bharti Cooperative Limited (KRIBHCO) are some of the major fertilizer manufacturing companies in the public sector, private sector and the cooperative sector.

Indian Farmer's Fertilizer Company Ltd. (IFFCO) is a National level organization engaged in the manufacture and marketing of various fertilizers in the cooperative sector. IFFCO is one of the largest fertilizer manufacturer co-operatives in Asia. IFFCO was established in 1967, with two fertilizer plant at Kalol (5.44 lakh tonnes/annum) and Kandla (20.6 lakh tonnes/annum), both located in Gujarat. To meet the growing demand of chemical fertilizers, IFFCO made concentric expansion by adding a new plant in Kalol, Kandla, Phulpur, Anola in U.P and Paradip in Orissa. IFFCO started with the production of DAP and Urea, but it expanded its production portfolio by adding N:P:K also. During 2007-08, its membership consisted of over 39564 co-operative societies as shareholders.

IFFCO with five plants at Kalol, Kandla, Phulpur, Anola and Paradip produced 27.37 lakh tonnes of fertilizer materials, which contributed to about 20.46% of nitrogenous and 25.44% of phosphoric fertilizer produced in the country. IFFCO is the biggest multi co-operative, with an authorized capital of ₹1150 crores. IFFCO decided about the expansion of Urea plants at different locations with different capacity production at Kalol (5.44 lakh tonnes/annum) in 1997, Kandla (20.6 tonnes/annum) in 1981, 1999, Phulpur (9.24 tonnes/annum) in 1997, Anola (9.89 tonnes/annum) in 1996 and Paradip (8.66 tonnes/annum). The Company is producing Potassium based fertilizer product and Urea, NPK, DAP, NP and Bio- fertilizer. Presently, IFFCO is producing over 4 million tonnes of Urea and 2 million tonnes of Phosphatic fertilizers annually, making it the largest fertilizer manufacturer in the country with a total of over 6 million tonnes per annum of both the fertilizers.

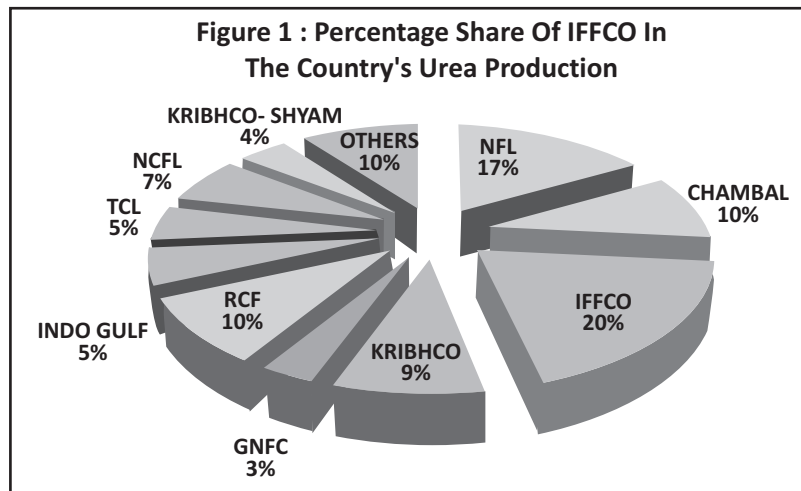
After reaching optimum level of fertilizer production through plant expansion and plant capacity utilization, IFFCO decided to expand its business in new areas. When the government decided to open insurance and power sector for private players, IFFCO decided to be more than a fertilizer company. IFFCO tied up with The Tokyo Marine and Fire Insurance Co. Ltd., Japan to launch IFFCO-TOKIO General Insurance Ltd. during 2000 to foray into the general insurance sector. In 2006, IFFCO launched IFFCO Chhattisgarh Power Limited (ICPL) and forayed into the power generation sector, which is under the implementation stage.

At present, IFFCO is a giant company in fertilizer production. It contributed 20% of the total fertilizer production by volume in India in 2008-09. Figure 1 shows the major Urea players' share contribution in 2008-09.

OBJECTIVES OF THE STUDY

- a) To analyze the cash generation and cash consumption position of various products of Chemical fertilizers (Urea, DAP and NPK).
- b) To suggest the strategic decisions about the continuity of the products.

** Director, Regional Institute of Cooperative Management, Sector 30, Gandhinagar - 382030, Gujarat.
E-mail - dearasthana@gmail.com*



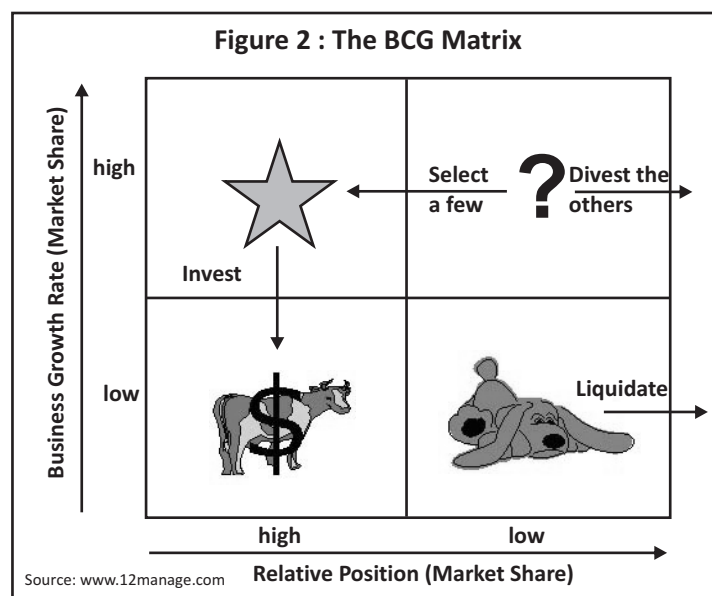
METHODOLOGY

Boston Consultancy Group (BCG) model has been used for the analysis of the data. The study is based on secondary data, which was collected from various annual reports of IFFCO. The study is limited to the period 2000-01 to 2007-08.

BCG MATRIX

BCG Matrix is a portfolio planning model developed by Bruce Henderson of the Boston Consulting Group in 1963. The BCG model uses two dimensions (growth and share) to assess the competitive position, the focus on balancing cash flows, emphasis on cost leadership (Morrison & Wensley, 1991). Seymour Tilles outlined the main ideas of portfolio planning three years after the foundation of The Boston Consulting Group consultancy in 1963 (Tilles, 1966). Bruce Henderson first outlined the shape, basic assumptions and key features of a 'growth share' matrix that would allow for a more strategic resource allocation (Henderson, 1968, 1973).

It is a simple tool to assess a company's position in terms of its product range. It helps a company think about its products and services and make strategic decisions about the continuity of the product; which product to keep, which one to divest, and which one to invest in for the competition. The Boston Consulting Group developed this model for



managing a portfolio of different major product lines as well as strategic business units. In the following years, the BCG matrix received a lot of attention from academics and managers. At the height of its success between 1972 and 1982, the BCG matrix was used by around 45% of the Fortune 500 (Bettis & Hall, 1981; Haspeslagh, 1982). The BCG Growth-share displays the various products on a graph of the market growth rate-vs-market share. Market growth rate is plotted on the Y-axis and relative market share is kept on the X-axis to form a matrix. Market growth on Y-axis started from low to high in the upward direction, and relative market share started high to low from left to right. In a multi-business firm, some of its products may be having a high market share and certain others, a low market share. The growth share matrix became one of the most commonly used techniques in corporate planning (Lorange, 1975). The Growth-share of BCG matrix provides four quadrants as explained below :

❖ **Question Mark** : A Question mark is a high growth rate and low market share product. Generally, when the product is launched, it is a question mark. Question mark has a low market share, so it does not generate a large amount of cash. The result is large net cash consumption. A question mark has the potential to gain market share and become a star, and eventually a cash cow, when the market growth slows. If the question mark does not succeed in becoming the market leader or star, then after years of cash consumption, it will degenerate into a dog when the market growth declines. However, they are in high-growth markets, so the potential to generate cash surplus is there. Question Marks might become Stars and eventual Cash Cows, but they could just as easily absorb effort with little return.

❖ **Star** : A Star is a high growth, high market share product. Stars generate large sums of cash because of their strong relative market share, but also consume large amounts of cash because of their high growth rate. Due to high growth rate, firms need to invest regularly to tap the market. It normally does not bring in immediate profits, but holds out great potential for the future. If a star can maintain its large market share, it will become a cash cow when the market growth rate declines (Ramaswamy et al., 2009).

❖ **Cash Cows** : Cash cow is low growth, high market share product. A Cash cow represents leaders in a mature market. Cash cows are net generators of resources. As market growth rate is low, they generate more cash than they consume. It also brings in higher profits. It does not need heavy investment; being in a low-growth market, and hence, expansion possibility and investment needs of a cash cow are minimal.

❖ **Dogs** : Dogs are low relative market share and a low growth rate product. It neither generates nor consumes a large amount of cash. However, they are actually cash-traps. A number of Dogs in a company should be avoided or at least,

Table 1 : Production of Chemical Fertilizers During 2001 -2008								
NAME/YEARS	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
TOTAL QTY PRODUCED BY INDIAN PLAYERS (Govt+Private+Cooperative) (000)MT								
UREA	18813.9	19173.3	17535.3	19214.6	19189.3	19086.6	20307.9	19461.6
DAP	4888.9	5094.1	5201.8	4604.5	5184.4	4627.7	4851.5	3816.1
N:P:K	2302.5	3362.3	3513.1	2333.5	3191.9	4231	4333.6	3723.1
IFFCO (TOTAL QTY. PRODUCED)								
UREA	3533.4	3490.5	3685.4	3600.8	3714.2	3717.9	3781.6	3963.3
DAP	980.3	1129.9	1502.2	1246	1290.9	980.4	804	438.3
N:P:K	723.6	930.2	860.2	854.2	1149.2	1705.8	1671.6	1531.8
REALTIVE MARKET SHARE OF IFFCO (PERCENTAGE)								
UREA	18.78	18.2	21.01	18.73	19.37	19.49	18.62	20.36
DAP	20.05	22.18	28.87	27.06	24.89	21.18	16.57	11.48
N:P:K	31.42	27.66	24.48	36.6	36	40.31	38.57	41.14
MARKET GROWTH RATE OF IFFCO (PERCENTAGE)								
UREA	N.A.	1.91	-8.54	9.57	-0.131	-0.535	6.398	-0.416
DAP	N.A.	4.19	2.11	-11.48	12.59	-10.73	4.83	-21.34
N:P:K	N.A.	46.02	4.48	-0.33	36.78	32.55	2.42	-14.08
Source: Annual Reports of IFFCO								

minimized. Dogs must deliver cash, otherwise they must be liquidated.

✱ **Stars and Question Marks** are both company products that operate in high growth industries, whereas a Star is a market leader, a Question Mark is a follower. **Cash cows and Dogs** are company products that operate in low- growth industries. A Cash –cow is a leader, while a dog is a poor follower.

OBSERVATION AND ANALYSIS

In chemical fertilizers, IFFCO produces Urea, DAP and NPK. Total production of these three fertilizer products were compiled for year 2000-01 to 2007-08. Then, the relative market share of IFFCO in three product categories was computed from total production of these product categories by all fertilizer companies. The market growth rate of three product categories of IFFCO was computed and is given in the Table 1.

✱ **Urea** : Urea is the most widely used dry N fertilizer. Once applied to the soil, urea is converted to ammonia, which reacts with water to form ammonium within two to three days. Growth-share data of Urea is given in the Table 2 and the BCG model is given in the Figure 3.

Table 2 : Production of Urea By IFFCO During 2001 - 2008								
YEARS	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Relative Market Share OF IFFCO Urea	18.78	18.2	21.01	18.73	19.37	19.49	18.62	20.36
Market Growth Rate OF Urea	N.A.	1.91	-8.54	9.57	-0.131	-0.535	6.398	-0.416
Source: Annual Reports of IFFCO								

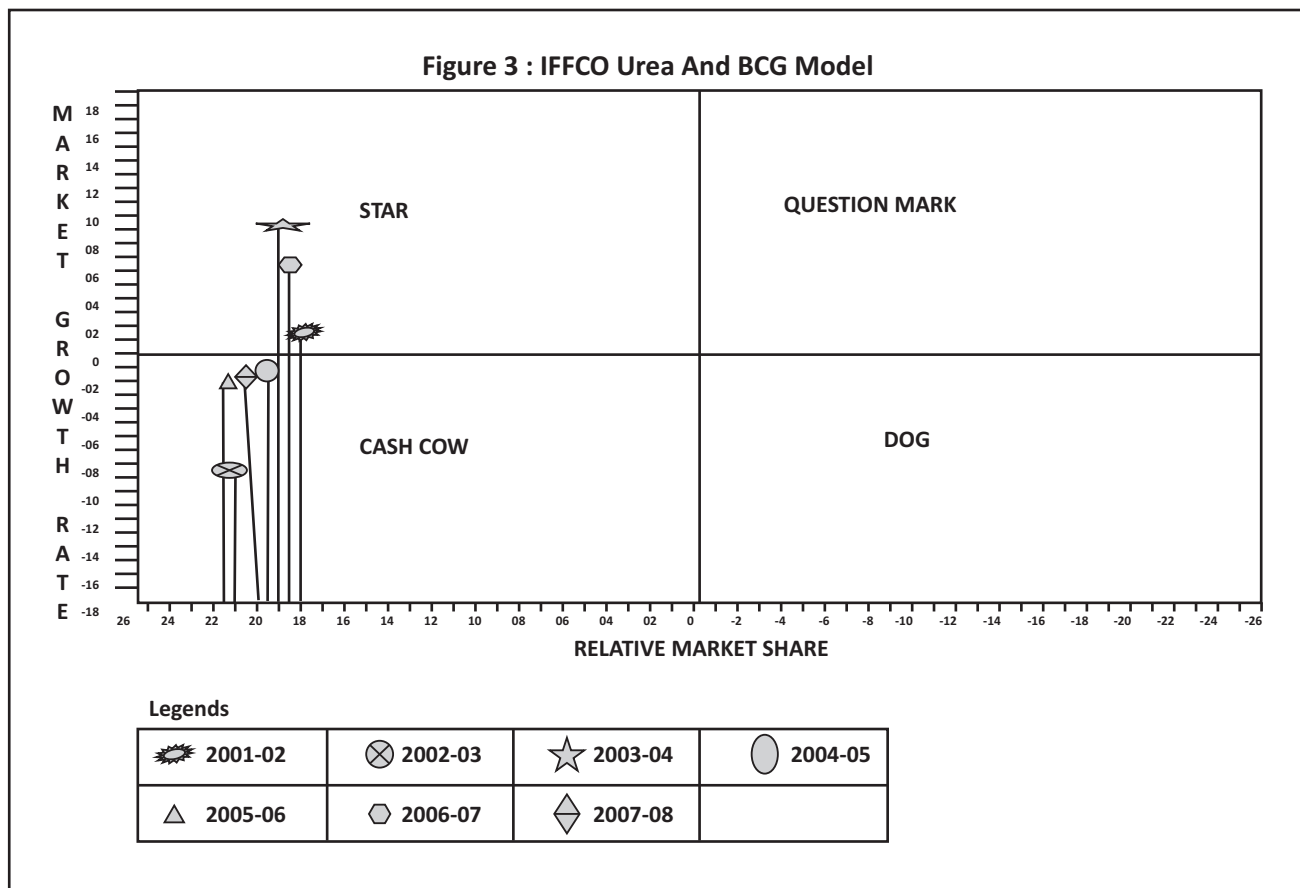
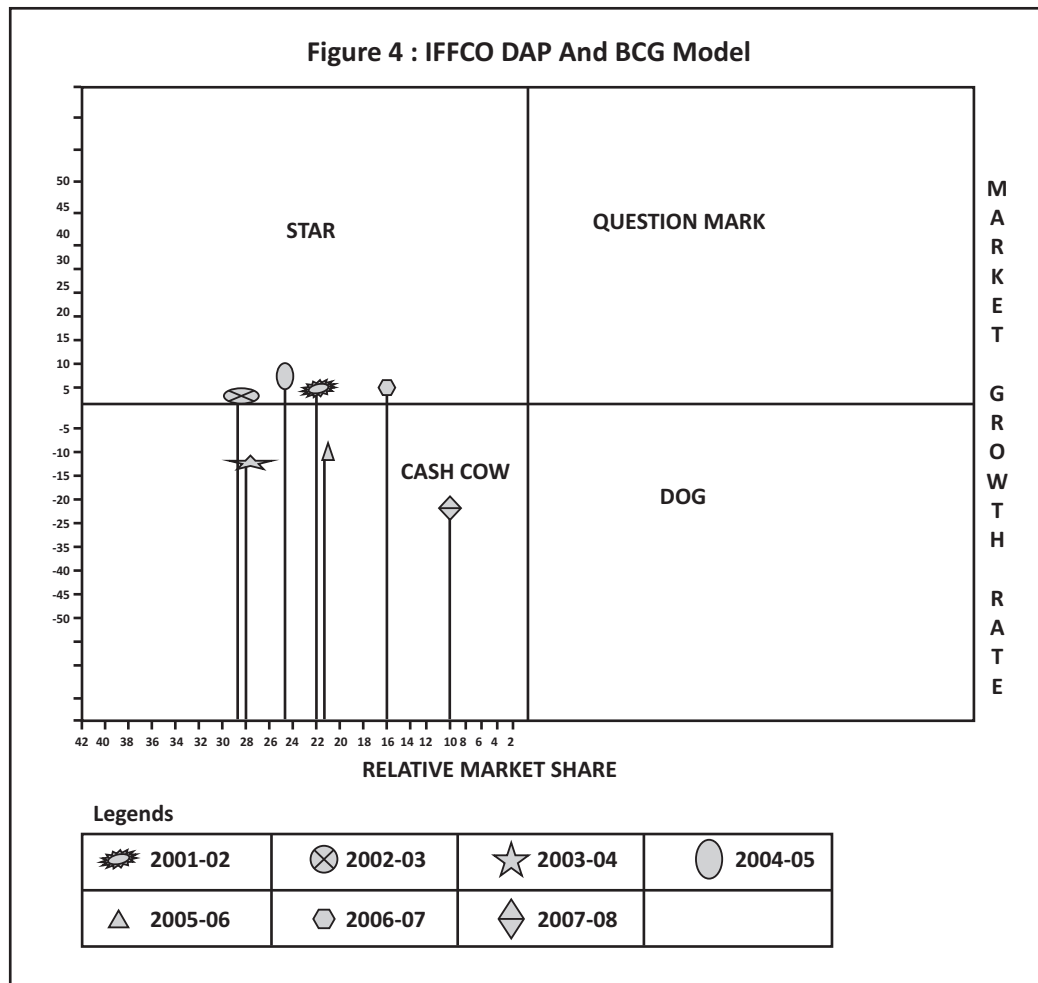


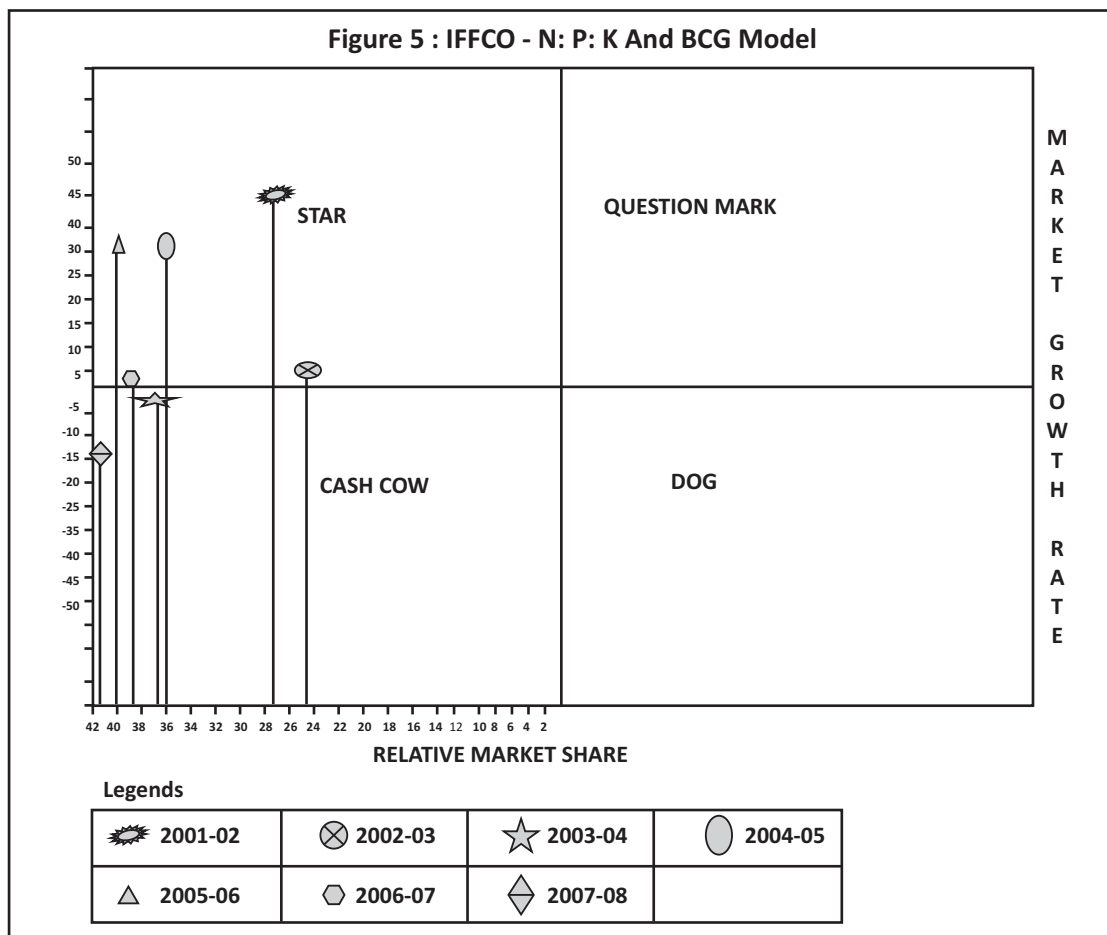
Table 3 : Production of DAP By IFFCO During 2001 -2008								
YEARS	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Relative Market Share OF IFFCO DAP	20.05	22.18	28.87	27.06	24.89	21.18	16.57	11.48
Market Growth Rate OF DAP	N.A.	4.19	2.11	-11.48	12.59	-10.73	4.83	-21.34
Source: Annual Reports of IFFCO								



☼ **DAP** : Diammonium phosphate (18-46-0) is a dry material being used extensively for bulk blending and for direct application where soils do not need K or where K is broadcast. It has the advantage of being highly water soluble. Growth-share data of DAP is given in Table 3 and BCG model is given in the Figure 4.

☼ **N: P: K** : Synthesized materials are also called artificial, in which the product predominantly contains the three primary ingredients Nitrogen(N), Phosphorus(P) and Potassium (K) known as N-P-K fertilizers or compound

Table 4 : Production of N:P:K By IFFCO During 2001 - 2008								
YEARS	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Relative Market Share OF IFFCO N:P:K	31.42	27.66	24.48	36.6	36	40.31	38.57	41.14
Market Growth Rate OF N:P:K	N.A.	46.02	4.48	-0.33	36.78	32.55	2.42	-14.08
Source: Annual Reports of IFFCO								



fertilizers elements are mixed intentionally. NPK Fertilizer is a material that is added to the soil to supply one or more elements required for plant growth and productiveness. Growth-share data of N: P: K is given in the Table 4 and BCG model is given in the Figure 5.

DATA INTERPRETATION AND RECOMMENDATIONS

The rapid buildup of fertilizer production capacity in the country has been achieved as a result of a favourable policy environment, facilitating large investments in the public, co-operative and private sectors. IFFCO is a giant in fertilizer production. Market growth rate of Urea has exhibited a mixed trend during the study period. Growth rate increased upto 10 per cent appox. and decreased upto 8 per cent appox. Despite varying growth rate of the market for Urea, IFFCO has captured appox. 20 per cent of the market share and has gained a leadership position amongst the various fertilizer manufacturing companies.

Urea remained in the Star and Cash Cow quadrant during the study period. This product is generating cash for IFFCO. So IFFCO should concentrate on the continuity of this product.

Market growth rate of DAP has also exhibited a mixed trend. Market growth rate of DAP picked upto 12 per cent appox and declined upto 21 per cent appox. IFFCO captured appox. 22 per cent market share in the DAP market. Its leadership position in DAP product line helped the product to remain in the Star and Cash Cow quadrant of the BCG model. During the study period, DAP remained in the high market growth rate quadrant and low market growth rate quadrant in alternate years. This means that DAP remained a cash consumption and cash generating product during the study period. IFFCO should invest in DAP product line from the cash generated from the same product line. Market growth rate has also exhibited a mixed trend. It remained as high as 46 per cent and as low as 14 per cent during the study period. Despite this, IFFCO captured appox. 36 per cent of the market share in N: P: K market. Due to this, N:P:K remained in the Star quadrant for most of the years during the study period. N:P:K is in the growth phase, so this

product line is a cash consumption product.

All three products of chemical fertilizer are either a leader or a follower. IFFCO is a leader in fertilizer production and the market for fertilizers is ever growing, so the company should continue the product line of all the three products discussed in this study.

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