Report on The Productivity Survey of Pumpkin Crop

2014

Productivity Assessment Survey of Different Agricultural Crops Programme
BANGLADESH BUREAU OF STATISTICS
Statistics and Informatics Division
Ministry of Planning

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May, 2015

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BANGLADESH BUREAU OF STATISTICS (BBS)
Statistics and Informatics Division (SID)
Ministry of Planning

Secretary
Statistics and Informatics Division(SID)
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Foreword

Agriculture plays a pivotal role in the economy of Bangladesh. This sector alone contributes 16.33% of annual GDP of the country. On the other hand, it offers both the opportunities of employment and livelihood to a large extent. It is worthy to mention that the country has a strong agriculture structure to maintain a sustainable development of the agriculture production of major and minor crops. As such the country enjoys the food security, sometimes with a buffer stock of major crops. Farmers of Bangladesh simultaneously produce various minor crops which also fulfill the demand of internal consumption of bulk population. In persuasion of the demand of statistics on production, cost of production and market price of various crops, Bangladesh Bureau of Statistics (BBS), apart from major crops, has also been putting efforts in conducting surveys on a series of minor crops.

Pumpkin is an important vegetable in Bangladesh for its great economic importance as well as nutritional value and high availability round the year. This pumpkin report is the fourth of its series among other nine different crops. I believe that the data presented in the report would be useful for the policy formulation and planning process of its development initiatives.

I would like to take the opportunity to extend my thanks to the Director General, BBS and his colleagues who were involved in different stages of the survey and preparing the report. I believe that the policy makers, researchers, users and all other stakeholders will find this report very useful.

Dhaka
May, 2015

Kaniz Fatema *ndc*
Secretary

Director General(A.C.)
Bangladesh Bureau of Statistics(BBS)

Preface

Bangladesh is predominantly an agriculture country. Agriculture being the engine of growth of the economy, there is no other alternative but to develop agriculture sector for alleviation of poverty. Since provision of food security, improvement of the living standard and generation of employment opportunity of our population are directly linked to the development of agriculture, there have been continued efforts by the government for the overall development of this sector.

Production of crops cost of production of crops and market price of both major and minor crops are directly interrelated. Government has to give proper attention on these three factors so that the farmer get fair price of the crops produced during the harvest time.

In order to formulate proper policy and planning for the development of agriculture sector reliable and realistic data regarding production cost of crops in different phases such as cost relating to land preparation, seeds, weeding, insecticides, fertilizers, harvesting, transportation, leasing of land etc. are needed. Keeping these in view, the Productivity Assessment Survey of different Agricultural Crops (PASDAC) Program under the Bangladesh Bureau of Statistics has conducted survey on nine minor crops to obtain cost of production of each individual crop by following the scientific survey methods. This report contains the findings of the survey on Pumpkin conducted during February 2014.

I express my sincere gratitude to the members of the Technical Committee and the Working Committee of the PASDAC Program for providing technical guidance for choosing spices crops for study, sample design, finalizing questionnaire and other related matters. I would like to convey thanks to Mr. Md. Nurul Islam, Joint Secretary (Rtd), Local consultant, Ms. Salima Sultana, Director (Joint secretary), Agriculture wing, BBS and Mr. Md. Akhter Hassan Khan, Programme Director of this study and other officers/staff who worked hard in bringing out this report in time.

Any comments or constructive suggestions for improvement of such report in future will be appreciated.

Dhaka
May, 2015

Md. Baitul Amin Bhuiyan
(Additional Secretary)

Acknowledgement

Now-a-days agriculture production statistics and cost of production statistics of different crops have wide demand among the users. These statistics provide necessary information to development planners & Policy makers. They help business community with market related information. The report on "The Productivity Survey of Pumpkin Crop-2014" will be great informative publication relating to minor crops production and cost of production.

I would like to express my gratitude to the honorable Secretary, Statistics and Informatics Division for his valuable guidance and directions provided during the survey Programme. I would also remain grateful to Mr Md. Baitul Amin Bhuiyan (Additional Secretary) Director General (Additional Charge), BBS for his continued suggestions and support to me in performing all the necessities during the survey and for preparing the report. I would like to extend my gratitude to Dr. Kazi Mostafa Sarwar, Joint Secretary (Admin), Statistics and Informatics Division (SID) for his continuous follow-up implementation of the activities of the programme.

I am happy to appreciate the assistance of Mr. Md. Nurul Islam, Joint Secretary (Rtd), Local consultant for developing the methodology of the survey as well as the report and also thanks to Ms Salima Sultana, Director (Joint secretary)of Agriculture Wing, BBS for her valuable guidance and support that helped in conducting the survey. My thanks also go to Mr Md. Rezaul Karim, Assistant Statistical Officer for his works in data processing. I acknowledge the valuable suggestions and hard work of officials and staff of Agriculture Wing.

I am also grateful to the respondents who extended their cooperation in filling the questionnaire and spending their valuable time in spite of their busy occupations. My sincere thanks to the field official and staff involved in the survey.

Finally I acknowledge the work of the officers and staff who were involved in typing questionnaires, manuals and this report.

Dhaka
May, 2015

Md. Akhter Hassan Khan
Programme Director

Contents

Key Findings

SL. No.	Items	Result
(1)	(2)	(3)
1	Area (in acre) under pumpkin (Pumpkin farm holding)	120993
2	Percentage of area growing Pumpkin by tenancy	
	a. Own	76.51
	b. Share cropping	6.44
	c. Mortgage	5.84
	d. Lease	9.90
	e. Others	1.30
3	Percentage of area growing Pumpkin by division	
	a. Barisal	8.83
	b. Chittagong	24.70
	c. Dhaka	20.37
	d. Khulna	22.53
	e. Rajshahi	10.03
	f. Rangpur	9.50
	g. Sylhet	4.03
4.	Percentage of area growing Pumpkin by varieties	
	a. Local	52.56
	b. Hybrid	46.99
	c. Others	0.45
5	Percentage of area growing Pumpkin by cultivation type	
	a. Single	58.45
	b. Mixed	41.55
6	Number of labourers employed by component for per acre production of Pumpkin	
	a. Planting	7
	b. Weeding.	13
	c. Harvesting	22
	Total	42
7	Per acre leasing value (Tk.)	5854
8	Per acre production cost (Tk.) by varieties	
	a. Local	23147
	b. Hybrid	26351
	Average	24662

SL. No.	Items	Result
(1)	(2)	(3)
9	Per acre production cost (Tk.) by division	
	a. Barisal	23865
	b. Chittagong	25180
	c. Dhaka	25990
	d. Khulna	24104
	e. Rajshahi	25617
	f. Rangpur	22146
	g. Sylhet	23195
10	Per acre production cost (Tk.) by type of input	
	a. Land preparation	3273
	b. Seed/seedling and plantation	4217
	c. Weeding	2094
	d. Irrigation	2371
	e. Pesticide/insecticide	2078
	f. Fertilizer	5308
	g. Hormone	501
	h. Harvesting	3058
	i. Transport	1431
	j. Others	332
	Total	24663
11	Per acre yield rate (Kg.) by division	
	a. Barisal	5147
	b. Chittagong	6009
	c. Dhaka	5407
	d. Khulna	5303
	e. Rajshahi	5321
	f. Rangpur	5044
	g. Sylhet	5480
	Average	5470
12	Per acre production value (Tk.) by division	
	a. Barisal	56899
	b. Chittagong	61329
	c. Dhaka	64373
	d. Khulna	53344
	e. Rajshahi	57679
	f. Rangpur	49797
	g. Sylhet	53162
	Average	57968

SL. No.	Items	Result
(1)	(2)	(3)
13	Per acre production value (Tk.) by varieties	
	a. Local	54017
	b. Hybrid	62472
	Average	57968
14	Per acre benefit cost ratio by varieties	
	a. Local	2.33
	b. Hybrid	2.37
	Average	2.35
15	Per acre benefit cost ratio by division	
	a. Barisal	2.38
	b. Chittagong	2.44
	c. Dhaka	2.48
	d. Khulna	2.21
	e. Rajshahi	2.26
	f. Rangpur	2.25
	g. Sylhet	2.29
	Average	2.35

Chapter-1

Introduction

Introduction

Bangladesh predominantly is an agricultural country. Most inhabitants of the country are involved directly in agricultural activities for their livelihood. The sector dominates the economy 16.33% of the country's Gross Domestic Product (GDP). In earlier decades, the sector contributed more than 50% of GDP. Due to gradual transformation of the economy from agriculture to industry and service sectors, this sector has fallen from around 50% in the 1970 to 16.33% in recent year 2013-14 but still it is the single largest manpower engaged in sector. It is also the source of raw materials of different industries, such as jute & jute products, food & food products and so on.

Bangladesh by birth possesses very fertile land in which diversified crops grow very easily. Various types of crops are produced in this country. The pumpkin is an important vegetable crop in Bangladesh, due its great economic importance as well as nutritional value and high availability in all the year round.

Vegetables play a vital role in the overall economic performance of Bangladesh. Pumpkin is a very popular and one of the most important vegetable crops grown extensively throughout the tropical and subtropical countries. Due to its high nutritional content and lucrative market price, pumpkin may be considered as a high value crop. Both immature and mature vegetables are used as a vital ingredient for several culinary preparations in Bangladesh. Pumpkins are rich in carbohydrate and minerals and cheaper source of vitamins, especially carotenoid pigments, which have a major role in nutrition in the form of pro-vitamin-A, antioxidants, when used at ripening stage. Thus, this vegetable can contribute to improve nutritional status of the people of Bangladesh, particularly the vulnerable group in respect of vitamin-A requirement. Pumpkins are very versatile in their uses for cooking and have an advantage over other vegetables as the fruit can be stored for up to 6 months before being consumed and hence can play an important role in maintaining nutritional levels during the long dry seasons.

The fruit is typically orange or yellow and have many creases running from the stem to the bottom. They have a thick shell on the outside, with seeds and pulp on the inside. The main nutrients are lute in and both alpha and beta carotene, the latter of which generates vitamin A in the body.

1.1 Production of pumpkin

The production of vegetables including pumpkin is increasing day by day in Bangladesh. Among all the vegetables produced in the country, Pumpkin major area covered of total cropping area and production. It grows in all the districts of Bangladesh but plenty of Pumpkins are produced in the region of Jessore, Kustia, Chittagong and Dhaka.

Pumpkins are warm weather crops that are damaged easily by light frosts. They require a temperature range of 18°C to 27°C for growth, the ideal being 18°C to 20.5°C. Therefore, a prolonged warm season is essential to obtain quality pumpkins. Pumpkins prefer a generous water supply. Over watering is often harmful. Pumpkins grow well and produce excellent quality fruit in rich, light-textured soils. Sandy loam or well-drained loamy fertile soils, ideally deeper than 25 cm are ideal for pumpkins. Pumpkins are propagated by seed sown directly in the field where the plant will mature. Seeds may be sown from October to December for winter crop and February to May for summer crop.

Most Pumpkins reach maturity at 3 months to 4 months after sowing. The fruit is harvested when the skins becomes hard and lose its shiny appearance. However, gathering the Pumpkins should be delayed until the vines have completely dried off, retaining the stem. Young, fresh leaves are used as vegetables, the same way as spinach. Pumpkin seeds can be roasted and eaten as a snack.

1.2 Scope and coverage of the survey

The productivity survey of pumpkin crop 2014 is a household based survey. Under the purview of this survey the target population was having at least one decimal area under pumpkin cultivation of all households. The survey covers the whole country. A total of 210 PSUs were taken in the country from seven divisions. Each division was taken 30 PSUs.

1.3 Objectives of the Survey

The Pumpkin Survey 2014 is designed to provide national estimates for various indicators that are needed for national accounts and policy purposes.

The objectives of the survey are to estimate:

(a) Per acre production cost
(b) Per acre yield rate
(c) Per acre production value and
(d) The total area under Pumpkin cultivation

Chapter-2

Methodology

Methodology

2.1 Sample Design

The pumpkin survey has been conducted in the whole country using the frame of Agriculture Census-2008. In this survey, household having at least one decimal area of land under pumpkin crop cultivation has been considered as ultimate sampling unit. For the better estimate, the whole country has been divided into seven divisions. Each division was treated as a stratum. A two stage cluster sampling design has been adopted in this survey. In the first stage, a total of 30 PSUs were selected in each division using the systematic random sampling, i.e. a total of 210 PSUs were selected in the whole country. In the second stage, all the households were listed with some basic characteristics from the selected PSUs and then 30 households were selected following the systematic random sampling, where a mouza was treated as the primary sampling unit (PSU) and the selected pumpkin crop producing households were the ultimate sampling unit. From the selected mouzas, possesses less than 25 pumpkin producing farm households were undertaken and then the remaining households were taken from the adjacent mouza or mouzas.

2.2 Data Collection

As data collection has a major impact on the quality of survey results, it is treated as a significant part of survey. Considering its importance, the following measures have been taken during the preparation of questionnaire as the tool of data collection:

- Questionnaire design.
- Questionnaire has been pre-tested;
- Comprehensive manual of data collection with clearly defined concepts and definitions have been made;
- Training programmes for the enumerators and supervisors have been conducted;
- Required number of field survey staff were set up in order to ensure smooth data collection;
- Extra-care was taken for the data collection activity, sufficient number of supervisors were assigned.

2.2.1 Questionnaire Design

A questionnaire is a powerful evaluation tool that allows the collection of data through the use of multi-dimensional questions. A questionnaire written without a clear goal and purpose is inevitably going to overlook important issues and waste enumerators' as well as respondents' time by asking and responding useless questions. All these matters were addressed to the extent possible in case of developing the questionnaire for this survey.

2.2.2 Process of questionnaire design

A working committee comprising of all the Directors of Bangladesh Bureau of Statistics (BBS), headed by the Deputy Director General was formed in order to facilitate the questionnaire development activity. Programme Director and some other members of the working committee had paid several visits to the field with a view to be knowledgeable about the factors of production and the pros and cons of the whole process of the production of pumpkin. They discussed the matter with the farmers who grow pumpkin. After having the knowledge on the issue, they have placed the feedback to the meeting of the working committee. Working committee has thoroughly examined the feedback and selected the topics of the survey. Programmme Director has been assigned to form a questionnaire on the selected topics and eventually, he developed a questionnaire with eleven questions. Subsequently, the questionnaire was brought forward to the Technical Committee, the highest statistical body comprising of representatives from different Ministries, Universities and BBS, which had finally approved the questionnaire.

2.2.3 Pre-testing the questionnaire

The questionnaire was pre-tested to examine the time necessary to complete the interview, test the reliability i.e. whether it captured the information desired, and also investigated the consistency whether the information gathered. It was related to the whole purpose of the survey. The test had also been targeted to check the logistics required for successful operation of the survey.

In order to ensure the best performance of the questionnaire in respect of data collection, processing and analyzing, the pre-testing was carried out during the month of November

2013 at Shibganj Upazila under Bogra District and Gobindoganj Upazila under to Gaibandha District. A group including Programme Director, some members of the working committee had gone to the mentioned two places to take part in testing the questionnaire. They had chosen some of the farmers at random as the respondent.

2.2.4 Findings of the Pre-test

Depending on the findings of the pretest, modifications to the questionnaire have been made in the structure and wording of the questionnaire. It has also taken care of semblance of the question, that is, the meaning and clarity which yields the intended information from the respondent. Furthermore, considerable amendment has also taken place in the enumerator's manual in view of ensuring proper questionnaire administration.

After pre-testing some significant suggestions from the respective team had been made. This had been eventually adopted properly in the final questionnaire. During the pre-test, it had been found that farmers, the respondents did not feel comfortable to respond to the questions relating to the total area of the land under pumpkin crop. Considering the fact, the structure of the questionnaire had been changed. Deleting the aggregate area in a single row, the new concept, area by plot in two rows has been incorporated.

2.2.5 Finalization of the Questionnaire

After addressing all the changes following the recommendations evolved from the pre-test, the questionnaire was placed to the Technical Committee. The committee also put notable contribution to the questionnaire. Thus, the questionnaire had been finalized by the approval of the Technical Committee.

2.2.6 Training of the Supervisors and Enumerators

A two days training was arranged in order to make the Supervisors and Enumerators perfectly conceptualized with the concepts and definitions of each word of the questionnaire as well as to convey the proper way of data collection. One day training programme for the Master Trainers conducted by the Programme Director had been arranged at the head office of BBS in Dhaka on 10th February 2014. The participants

received rigorous training on the concepts, definitions and the questionnaire. They have gone to the rural area of Dhamrai Upazila with a view to have hands-on exercise on the questionnaire. In the second phase, Enumerators have been trained for two days by the Master Trainers at the District Statistical Offices (DSOs) on 12 to 13 February 2014 following the same sequence as the training arranged at the first phase. At first, Enumerators received training on the questionnaire and in the next day they also visited field at remote area of the respective district in order to gather experience. However, most of the trainees both Supervisors and Enumerators actively participated in the training and also made some suggestions which were subsequently taken into consideration.

2.2.7 Method of Data Collection

Face to face interview has been carried out following Paper and Pencil (PAPI) method.

2.2.8 Data Collection and Supervision

Data collection had taken place during 14th to 22nd February 2014 at the household level. Usually the respondents were the head of household. The total of 210 Enumerators, who were the employees of BBS and had proven experience in this field, had been engaged in data collection from the farm households and the total of 52 Supervising Officer named District Officer were responsible for supervising the data collection task. All Supervising Officers had been directed to stay at the respective district during the period of data collection so that they could extensively supervise data collection task and address instantly any untoward problem arising during data collection. Seven Divisional Coordinators including Program Director were also responsible to oversee all activities at field level relating to data collection. Furthermore, all possible measures had been taken to have a good quality of data.

2.2.9 Data Editing and Coding

Data editing and coding were another vital phases of the survey, which indispensable for data was processing. It should be completed before data processing. In case of this survey, coding had been done along with questionnaire development so that the enumerator could easily and accurately mark the right answers.

Data editing referred to the activity of checking and cleaning data that had already been collected from the field. A group of experienced staff from Agriculture Wing under the supervision of two officers from the same Wing had carried out the work of data editing with proper attention.

2.3 Data Processing

Data processing involves many steps that were very important because it affects survey results according to the involved steps. During data processing following steps have been taken.

- Data entry
- Appending and Merging files
- Data validation (further computer checking, editing, and imputation)
- Final decision on errors
- Completion of data processing and generation of data files
- Final documentations
- Conversion of data files to another software.
- Storage of all files.

2.3.1 Data Entry

After editing, all questionnaires had been sent to Computer Lab of Agriculture Wing of BBS in order to do all works of data processing. Computer Wing had maintained the steps as mentioned aiming to ensure perfect data processing:

(1) Software Used: Five software namely CSPro, FoxPro, Oracle (SQL), SPSS and Excel had been used for processing the survey data. CSPro had been used for data entry, FoxPro also for editing and Excel for printing output.

(2) Designing data entry application: The first thing to do was to create the data dictionary based on the questionnaire. The data dictionary had consisted of ID items, records, items of the records, and also values of the items. Logic check was also maintained to avoid errors of inconsistency. After finishing the data dictionary, the data entry forms had been developed depending on data dictionary. After that, the data entry form was tested and, therefore, readily available for use.

(3) Data capturing and Preliminary Validation: Just after the completion of data editing manually, data have been captured in computer. During data capturing, a variety of common errors have been identified. As a result, data have been checked and cross checked with questionnaire depending on error message. During data processing, the appropriate corrective methodologies mentioned below have been used to ensure clean data.

- **Wrong data and out of range codes:** Firstly, the data collection instrument restricts the enumerator to a set of codes within the acceptable range for most of the questions. Secondly, the values had been set for avoiding wild codes for most of the questions. For example, the code for ownership of land had been set 1 to 5.

- **Inconsistency checking:** It had been done during designing the data entry program to avoid errors and inconsistency.

- **Treatment of Missing values:** The data entry program had been designed not to allow blanks that ensure not having missing values in the data.

- **Incomplete records and dropped cases:** The data entry program had designed to accept the complete data case; otherwise, it would not be saved. This had been set to avoid incomplete records and dropped cases.

- **Duplication of entries:** The data entry program had been designed in view of rejecting duplication of entries based on the identifiers.

(4) Appending and Merging files: After data entry, files have properly been appended and merged in order to bring all data in a single file.

(5) Data Validation: Validation had been accomplished after appending and merging files by checking the number of variables, the cases, wild codes, missing value and consistency. It had been made sure that the number of variables generated matched with the number of variables in the data set.

(6) Final decision on errors: If there had been found any error during data validation, it was checked and rechecked; and sometimes it had been sent back to the survey authority to decide how it would be treated.

(7) Completion of data processing and generation of data file: Addressing the final decision on error, data processing task had been completed and generated a data file which contains micro data.

(8) Data preservation: After completion of processing, data had been stored in ASCII format. The data had also been converted to Microsoft Excel format in order to have the print out. Both original and new format have been preserved. The questionnaires had also been filed for safe storage. A copy of the data set had been put forward to the survey authority for tabulation and analysis.

2.4 Tabulation

Thirty tables focusing on the vital components such as total number of labours engaged in production of pumpkin, cost of land preparation, seedlings used and their price, fertilizer used and their price, cost of insecticides, cost of production by seasonality etc. have been generated. All these tables have been given in the part of analysis and annexure.

2.5 Data Analysis

Survey results had been analyzed in tabular form. Major variable is explained vertically (columns) and cross tabulation by another related variable(s) horizontally. In the analysis, it had been described the variation of the magnitude of the major variables by division. Many aspects of production and the cost of production of pumpkin had also been explained nationally.

2.6 Data Dissemination

The final report had been disseminated both in electronic form and hard copy as book. Results are available in the website of BBS. Some data may also be published in other publications of BBS such as Statistical Year Book of Bangladesh, Year Book of Agriculture Statistics of Bangladesh, and Monthly Statistical Bulletin etc.

Chapter-3

Area and Household

Area and Household

The information as obtained from the Productivity Survey 2014 of pumking crop in Bangladesh has been discussed in this chapter. It contains data related to:

i) Area under land tenureship of pumpkin cultivation by division;
ii) Households cultivating pumpkin by division and tenancy;
iii) Cultivation type of single and mixed crops by division;
iv) Pumpkin producing households by cultivation type and division;
v) Varieties of pumpkin (local, hybrid and others) by division;
vi) Varieties of pumpkin households by division; and
vii) Per acre leasing cost of pumpkin by stratum

Table-3.1 Percentage distribution of pumpkin cultivation area (acres) by tenancy & division

Division	Land tenureship											
	All		Owned		Crop Share		Mortgage		Lease		Other	
Bangladesh	120993	100.00	92568	76.51	7799	6.44	7068	5.84	11981	9.90	1577	1.30
Barisal	10686	8.83	8302	6.86	162	0.13	761	0.63	904	0.75	557	0.46
Chittagong	29885	24.70	18926	15.64	5271	4.36	2581	2.13	2759	2.28	348	0.29
Dhaka	24651	20.37	21465	17.74	802	0.66	1432	1.18	744	0.61	209	0.17
Khulna	27262	22.53	21250	17.56	463	0.38	675	0.56	4870	4.02	4	*
Rajshahi	12141	10.03	9460	7.81	475	0.39	1129	0.93	944	0.78	120	0.10
Rangpur	11493	9.50	9269	7.66	225	0.19	195	0.16	1501	1.24	315	0.26
Sylhet	4875	4.03	3895	3.22	401	0.33	295	0.24	260	0.21	24	0.02

* 1 hectare=2.47 acre

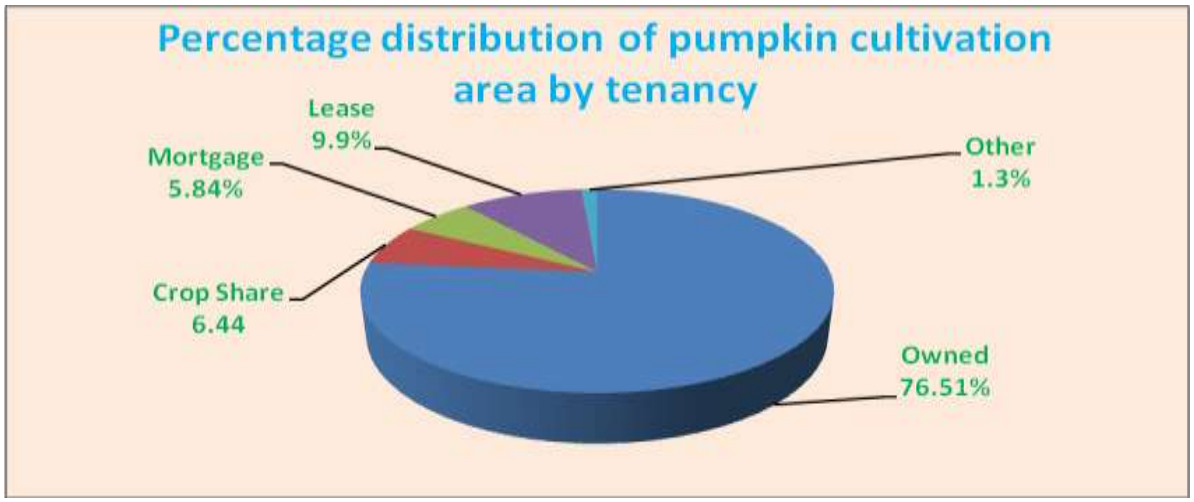


Table-3.1 presents the area of pumpkin crop under all tenureship of owned land, share crop, mortgage, lease and others separately by division for the survey year-2014. The table shows that a total area of 120993 acres of land are under pumpkin crop of which an over whelming majority of 92568 acres are owned land (76.51%) followed by 11981 acres of lease land (9.90%), 7799 acres of share crop land (6.44%), 7068 acres of mortgage land (5.84%) and 1577 acres of other land (1.30%). On the other hand, it is

observed from the table that the highest 29885 acres of land are in Chittagong division (24.70%), followed by 27262 acres of land in Khulna division (22.53%), 24651 acres of land in Dhaka division (20.37%) and remaining four divisions together have 39195 acres of land under pumpkin crop.

Table-3.2 Percentage distribution of pumpkin cultivation area (acre) by seasonality & division

Division	Seasonal cultivation					
	All		Summer		Winter	
	Area	%	Area	%	Area	%
Bangladesh	120993	100.00	73598	60.83	47395	39.17
Barisal	10686	8.83	7983	6.60	2703	2.23
Chittagong	29885	24.70	11576	9.57	18309	15.13
Dhaka	24651	20.37	9274	7.66	15377	12.71
Khulna	27262	22.53	21629	17.88	5633	4.66
Rajshahi	12141	10.03	11345	9.38	796	0.66
Rangpur	11493	9.50	10613	8.77	880	0.73
Sylhet	4875	4.03	1180	0.98	3696	3.05

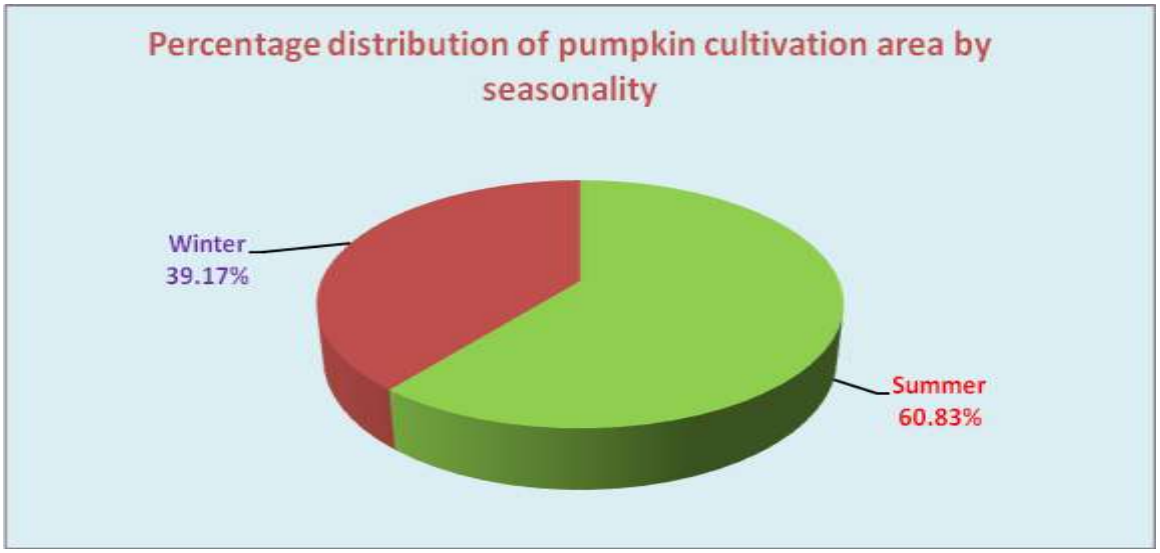


Table-3.2 shows the cultivated area of pumpkin crop by farming season in summer and winter. From the above table it is seen that out of 120993 acres of land 60.83% and 39.17% areas have been cultivated for the summer and winter season respectively. The table also indicates that the highest 18309 acres of land are in Chittagong division (15.13%), followed by 15377 acres of land in Dhaka division (12.71%) and the rest five divisions together have 13709 acres of land (11.33%) in winter season. The table further shows that the highest cultivated area of pumpkin crops in Khulna division is

21629 acres of land (17.88%) and lowest in Sylhet division which is only1180 acres of land (0.96%) in summer season.

Table-3.3 Percentage distribution of pumpkin cultivation household by tenancy & division

Division	Land tenureship											
	Total		Owned		Share Crop		Mortgage		Lease		Other	
	H/H	%	H/H	%	H/H	%	H/H	%	H/H	%	H/H	%
Bangladesh	648737	100.00	556319	85.75	34136	5.26	30315	4.67	32860	5.07	9647	1.49
Barisal	67530	10.41	59107	9.11	1203	0.19	3760	0.58	3309	0.51	2106	0.32
Chittagong	166743	25.71	130927	20.18	19193	2.96	10111	1.56	10796	1.66	2742	0.42
Dhaka	189066	29.14	170676	26.31	6406	0.99	6819	1.05	4339	0.67	2480	0.38
Khulna	79813	12.30	69248	10.67	1687	0.26	2575	0.40	9144	1.41	89	0.01
Rajshahi	71716	11.05	60979	9.40	2083	0.32	4728	0.73	3526	0.54	641	0.10
Rangpur	44583	6.87	40400	6.23	1428	0.22	867	0.13	969	0.15	1428	0.22
Sylhet	29286	4.51	24982	3.85	2136	0.33	1456	0.22	777	0.12	162	0.03

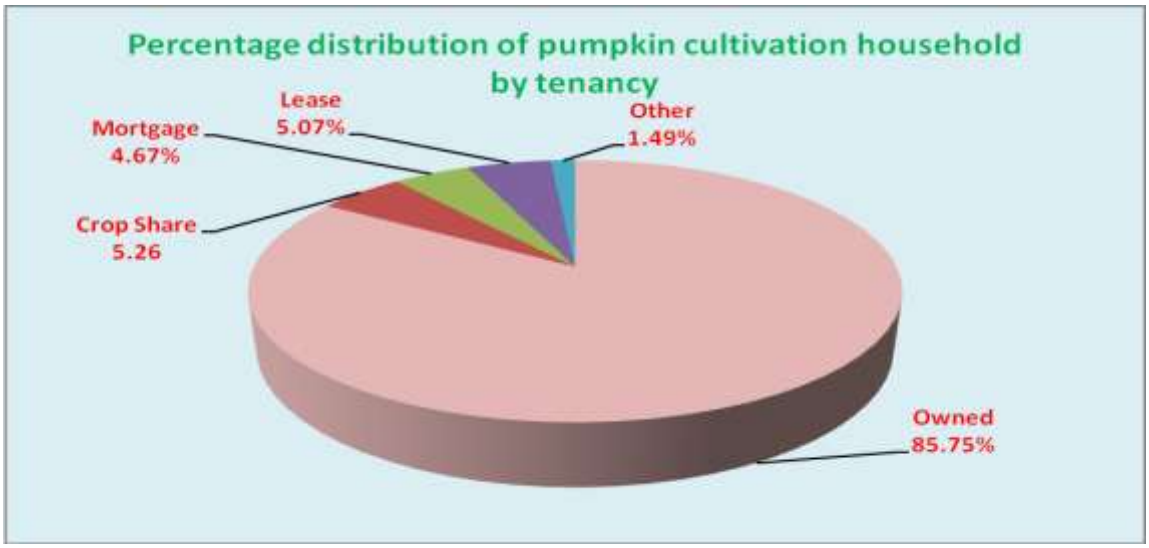
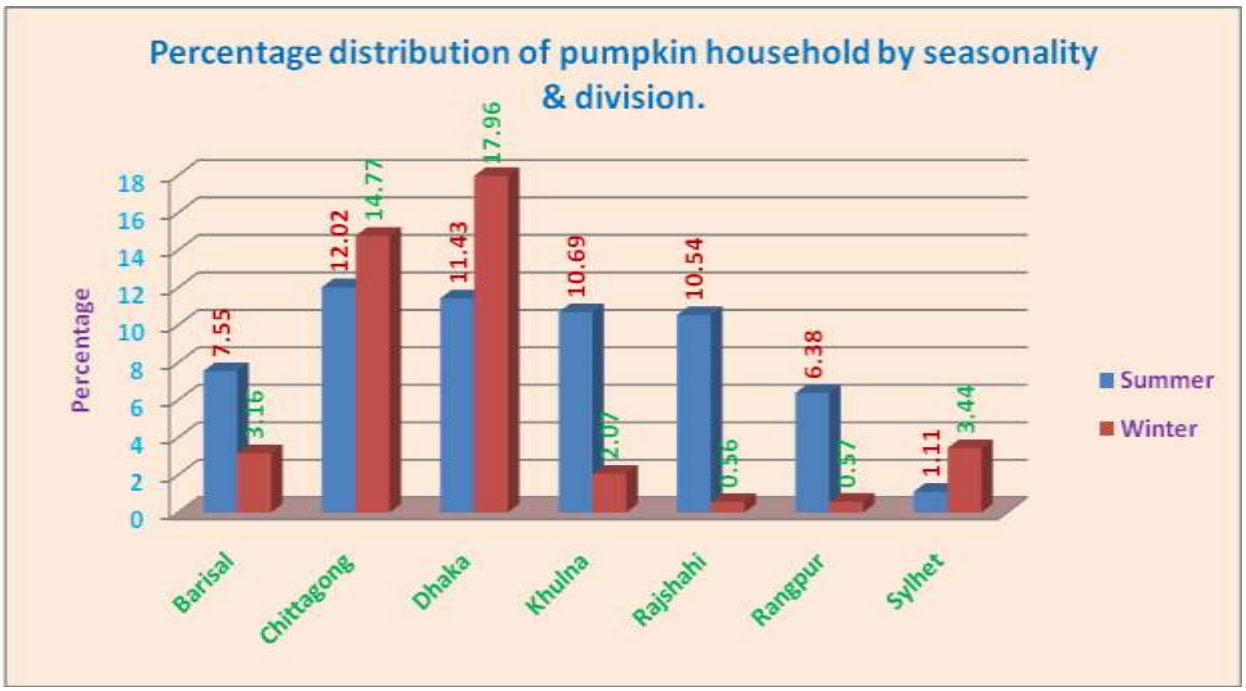


Table 3.3 shows that out of 648737 pumpkin producing households, 85.75% households have owned the land trailing far behind by 5.26% households having sharecrop tenureship, 5.07% households having leased tennureship 4.67% households having mortgaged tenureship and only 1.49% households having other category of tenureship. (The percentage of total tenureship households exceeds 100% as the same households repeats cultivation in different tenureship. The table further shows that out of total households, 189066 households are found in Dhaka division (29.14%), 166743 households are in Chittagong division (25.71%) and the rest five divisions together have 292928 households (45.15%) producing pumpkin in the country in the 2014.

Table-3.4 Percentage distribution of pumpkin households by seasonally & division

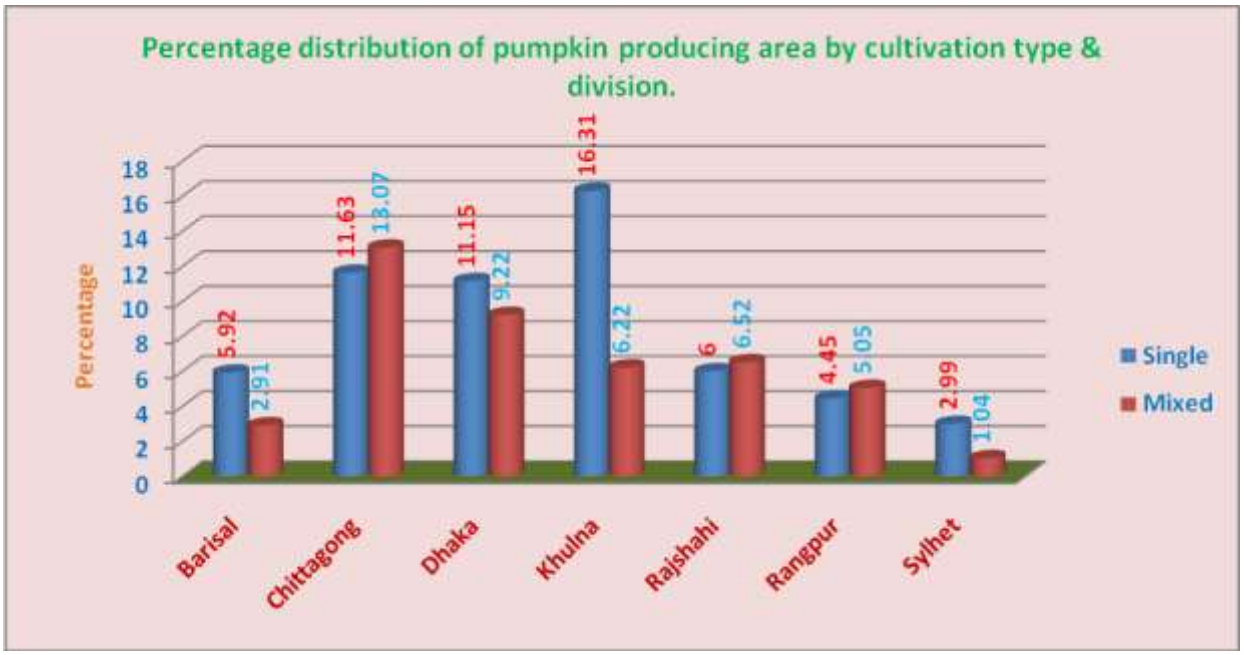
Division	Seasonal cultivation					
	Total		Summer		Winter	
	Household	%	Household	%	Household	%
Bangladesh	648737	100.00	387382	59.71	275896	42.53
Barisal	67530	10.41	48955	7.55	20530	3.16
Chittagong	166743	25.71	77973	12.02	95796	14.77
Dhaka	189066	29.14	74180	11.43	116539	17.96
Khulna	79813	12.30	69337	10.69	13406	2.07
Rajshahi	71716	11.05	68351	10.54	3606	0.56
Rangpur	44583	6.87	41369	6.38	3724	0.57
Sylhet	29286	4.51	7216	1.11	22296	3.44



It is found from table 3.4 that out of 648737 households, 59.71% and 42.53% households have been cultivated pumpkin crop in the summer and winter season respectively. The table also reveals that in winter season the pumpkin producing households are found 17.96% in Dhaka division followed by 14.77% in Chittagong division and remaining five divisions together 9.8% respectively.

Table-3.5 Percentage distribution of pumpkin producing area (acre) by cultivation type & division

Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Area	%	Area	%	Area	%
Bangladesh	120993	100.00	70724	58.45	50269	41.55
Barisal	10686	8.83	7162	5.92	3524	2.91
Chittagong	29885	24.70	14069	11.63	15816	13.07
Dhaka	24651	20.37	13493	11.15	11158	9.22
Khulna	27262	22.53	19739	16.31	7522	6.22
Rajshahi	12141	10.03	7258	6.00	7883	6.52
Rangpur	11493	9.50	5387	4.45	6106	5.05
Sylhet	4875	4.03	3615	2.99	1260	1.04



The above table presents the division wise cultivated area of pumpkin by cultivation type for the survey year. Between two types of cultivation, single crop has the highest cultivation area of pumpkin, which is 58.45%. The lowest 41.55% of land is used for a mixed crop. It is mentionable that type of cultivation of pumpkin crop varies from division to division. The mixed crop areas cultivation is 13.07% in Chittagong division and (9.22%) in Dhaka division whereas single crop area is 16.30% in Dhaka division and 11.63% in Chittagong division respectively.

Table-3.6 Percentage distribution of pumpkin producing households by cultivation type and division

Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Household	%	Household	%	Household	%
Bangladesh	648737	100.00	387725	59.77	261012	40.23
Barisal	67530	10.41	51286	7.91	16243	2.50
Chittagong	166743	25.70	80715	12.44	86028	13.26
Dhaka	189066	29.14	126251	19.46	62816	9.68
Khulna	79813	12.31	40661	6.27	39152	6.04
Rajshahi	71716	11.06	43511	6.71	28206	4.35
Rangpur	44583	6.87	22648	3.49	21934	3.38
Sylhet	29286	4.51	22652	3.49	6634	1.02

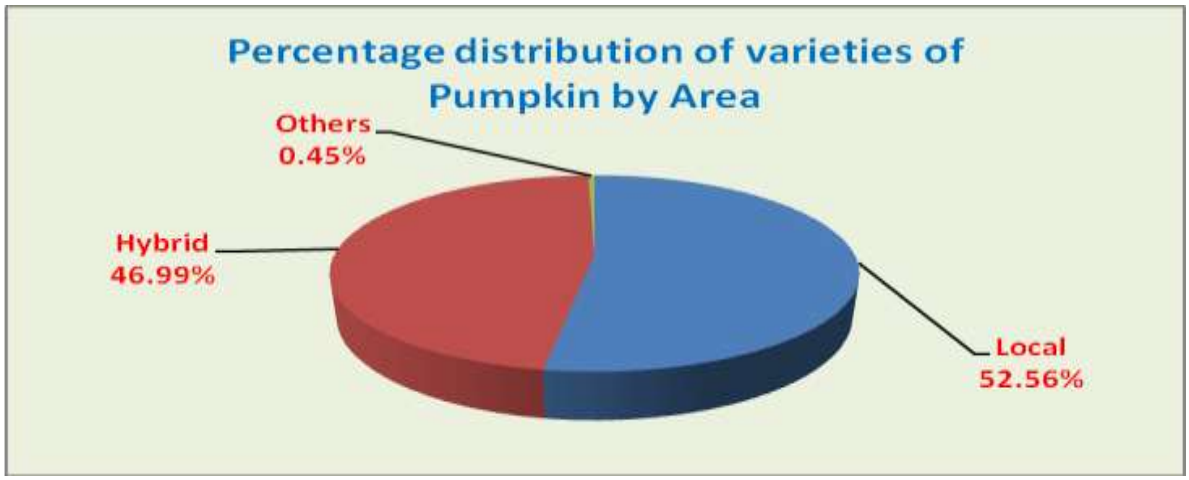


Table-3.6 indicates that out of 648737 households, 59.77% of the households produce only pumpkin crops and 40.23% households produce pumpkin along with other crops. The lowest percentage of growing pumpkin as a mixed crop is found13.26% of the highest of households in Chittagong division followed by 9.68% in Dhaka division. But 12.44% and 19.46% households in Chittagong and Dhaka divisions produce pumpkin as a single crop respectively. Only 7.91%, 6.71% and 6.27% households produce pumpkin as a single crop in Barisal, Rajshahi and Khulna division respectively.

Table-3.7 Percentage distribution of areas (acre) under different varieties of Pumpkin by division

Division	Varieties of Pumpkin							
	Total		Local		Hybrid		Others	
	Area	%	Area	%	Area	%	Area	%
Bangladesh	120993	100.00	63598	52.56	56852	46.99	543	0.45
Barisal	10686	8.83	6145	5.08	4507	3.73	33	0.03
Chittagong	29885	24.70	18462	15.26	11343	9.37	81	0.07
Dhaka	24651	20.37	16671	13.78	7897	6.53	83	0.07
Khulna	27262	22.53	11575	9.57	15592	12.89	95	0.08
Rajshahi	12141	10.03	5664	4.68	6264	5.18	213	0.18
Rangpur	11493	9.50	3221	2.66	8254	6.82	18	0.01
Sylhet	4875	4.03	1860	1.54	2995	2.48	20	0.02

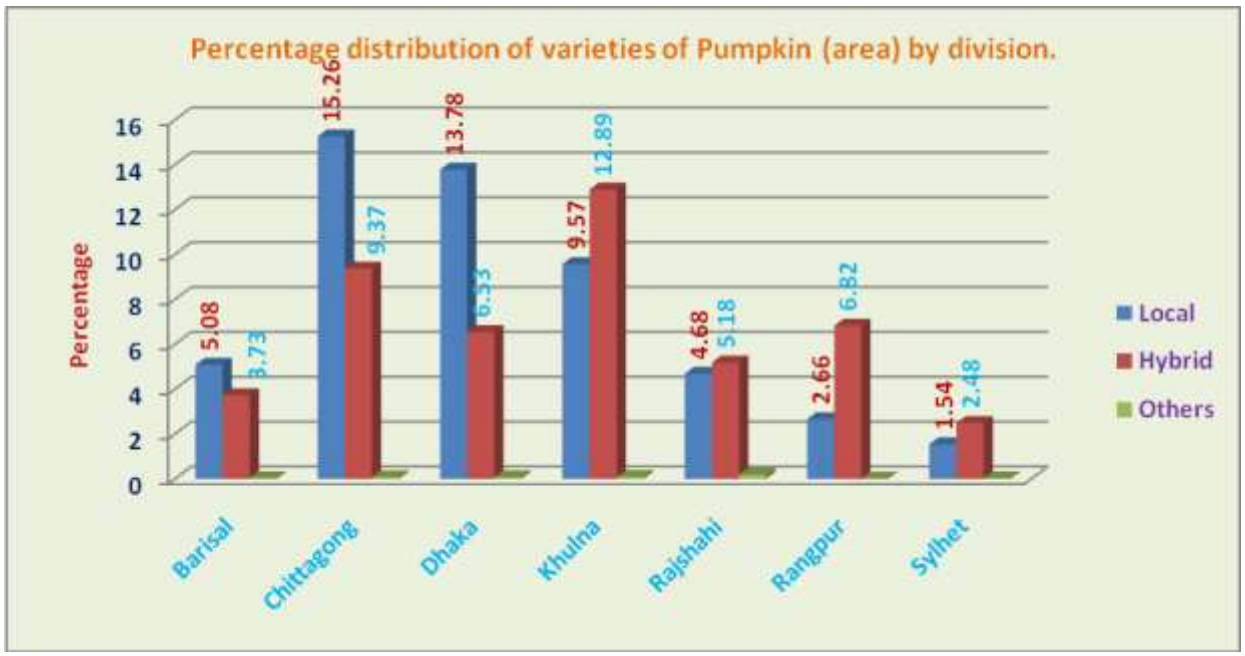


Table-3.7 provides the division wise cultivated area of pumpkin by varieties for the year 2014. Out of the three varieties, local variety is observed as the highest cultivation area of pumpkin, which is 52.56%. The second highest 46.94% of land is used for the hybrid variety of pumpkin. Remaining 0.45% land area of has been used for producing others varieties of pumpkin. It is mentionable that 12.89% and 9.37% acres of land are used for hybrid variety in Khulna and Chittagong division respectively whereas, remaining five division cultivate 24.74% of lands for pumpkin crop.

Table-3.8 Percentage distribution of households growing varieties of pumpkin by division

Division	Varieties of Pumpkin							
	Total		Local		Hybrid		Others	
	H/H	%	H/H	%	H/H	%	H/H	%
Bangladesh	648737	100.00	376580	58.05	268475	41.38	3682	0.57
Barisal	67530	10.41	36698	5.66	30606	4.72	226	0.03
Chittagong	166743	25.70	108477	16.72	57923	8.93	343	0.05
Dhaka	189066	29.14	131003	20.19	56823	8.76	1240	0.19
Khulna	79813	12.30	29297	4.52	49806	7.68	710	0.11
Rajshahi	71716	11.05	34696	5.35	36379	5.61	641	0.10
Rangpur	44583	6.87	20455	3.15	24026	3.70	102	0.02
Sylhet	29286	4.51	15953	2.46	12912	1.99	421	0.06

Table-3.8 presents the percentage distribution of households producing pumpkin by variety and division for the survey year. The table also shows that the highest 58.05% of pumpkin producing households produce local variety, followed by hybrid 41.38% and others only 0.57%. For the local variety, the highest percentage of households are 20.19% in Dhaka division, followed by Chittagong division (16.72%) and rest of the five divisions produce all together 21.14% of the total households. For the Hybrid variety the highest 8.93% of households are producing pumpkin in Chittagong division, followed by Dhaka division (8.76%), Khulna division (7.68%) and the lowest 1.99% of households are producing in Sylhet division.

Table-3.9 Per acre leasing cost of Pumpkin crop by division.

Division	**Per acre leasing cost (Tk.)**
Bangladesh	5854
Barisal	4825
Chittagong	5554
Dhaka	7289
Khulna	5989
Rajshahi	5810
Rangpur	6154
Sylhet	5399

Leasing means the land taken by the household for the cultivation of pumpkin crop only on payment of money to the land owner. Leasing value per acre is found to be significantly different between divisions. Local leasing value has also been collected in case of households who cultivate the crop in their own lands. Average per acre leasing cost of pumpkin crop is estimated Taka 5854 in Bangladesh.

Chapter-4

Production Cost

Production Cost

This chapter deals with data on per acre production cost of pumpkin by division and tenancy. The cost includes per acre production cost, per kilogram production cost, tenureship and varieties of pumpkin. The various ingredients of pumpkin production viz land preparation, seedling, plantation, weeding, irrigation, pesticide, fertilizer, harvesting, transport, other have been taken into consideration in obtaining the cost of production

Table-4.1 Per acre production cost (Tk.) by ingredient and division

Division	Production cost										
	Total	Land Preparation	Seed & seedling related	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
All	24663	3273	4217	2094	2371	2078	5308	501	3058	1431	332
Barisal	23865	3195	4102	1764	2398	1589	5741	190	2878	1711	299
Chittagong	25180	3269	4473	2626	2514	1810	5026	431	3179	1483	371
Dhaka	25990	3954	4487	1774	2006	1772	5691	728	3592	1439	547
Khulna	24104	3189	3838	1890	2375	2963	5622	319	2427	1309	171
Rajshahi	25617	2907	4053	2373	3340	2127	4831	683	3422	1608	272
Rangpur	22146	2725	4298	2143	1816	1837	4721	706	2641	1061	198
Sylhet	23195	2687	3885	1496	2149	1838	4961	538	3619	1577	444

* 1 hectare=2.47 acre

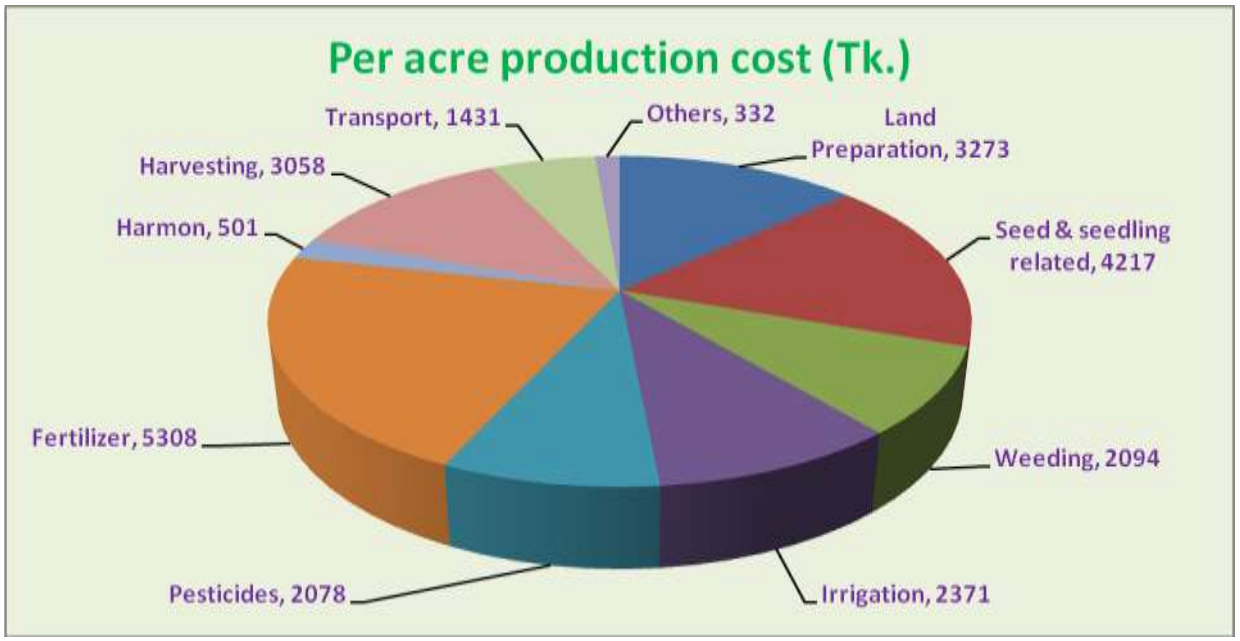


Table-4.1 presents per acre production cost of pumpkin on an average in Bangladesh which is Taka 24663 for the year 2014. While the highest per acre production cost of pumpkin is Taka 25990 in Dhaka division and the lowest production cost is found

Taka 22146 in Rangpur division. Thus it is seen a significant variation of 17.36% in between the lowest and highest per acre production cost of pumpkin between the divisions. The table shows that the highest per acre production of ingredient Taka 5308 in fertilizer, followed by seed & seedling related (Taka 4217), land preparation (Taka 3273), harvesting (Taka 3058) and others etc. However, the cost for fertilizer is estimated the highest at Taka 5741 in Barisal division, followed by Dhaka division at Taka 5691.

Table-4.2 Per acre production cost (TK) by land tenureship separately for farming time

Tenure ship	Per acre production cost (Tk.)										
	Total	Land Preparation	Seed & seedling related	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
All											
All	24662	3273	4217	2094	2371	2078	5308	501	3058	1431	332
Owned	24275	3334	4265	1849	2272	1877	5246	505	3101	1484	344
All Others	26534	3301	4495	2824	2808	2717	5427	458	2977	1251	275
Summer											
Average	25488	3058	4127	2287	2799	2342	5786	501	2893	1438	256
Owned	24892	3121	4142	1846	2664	2144	5809	500	2903	1499	265
All others	27971	2950	4290	3625	3203	3025	5635	453	3156	1413	221
Winter											
Average	23380	3606	4358	1793	1706	1668	4564	500	3315	1421	450
Owned	23368	3645	4444	1854	1697	1484	4419	512	3391	1461	460
All others	24491	3801	4787	1686	2246	2278	5132	465	2722	1021	352

Table 4.2 presents per acre production cost of pumpkin in two groups of tenureship viz, owned and all others which includes share crop, mortgage, lease and others. As owned land alone occupies about 76% of the land, all other minor groups have been taken together in tenureship analysis. The table shows that owned land tenureship fertilizer shows one-fifth (21.52%) of the total cost followed by seed & seedling related (17.10%), land preparation (13.27%) and harvesting (12.40%). Taking into consideration of all other tenureships into one group, per acre cost of production is found almost similar for major item costing like land preparation, seed & seedling related, fertilizer and harvesting ingredients etc. The cost of summer pumpkin is found to be higher by 9.02% than that of winter pumpkin.

Table-4.3 Per acre production cost by farming season and size of land.

Size of land (acre)	Per acre production cost (Tk.)		
	All	**Summer**	**Winter**
All	24662	25488	23380
<= 0.04	27091	26936	27289
0.05 – 0.49	26665	27867	24774
0.50 – 0.99	24608	24712	24422
1.00 – 1.49	22166	22948	20856
1.50 – 2.49	18047	17666	18606
2.50 – 4.99	16728	18327	14816
5.00 - 7.50	20549	18138	21048
7.50 +	19858	19962	19617

Table-4.3 presents that per acre production cost and size of land planted by division for the year 2014. For winter season, beginning with size of land from 0.05 to 0.49 as the size of land has increased, the cost of per acre production decreased except in size of land 2.50 to 4.99 acre. Almost similar tendency is found in stratum-2 except in size of land <= 0.04 acre.

Table-4.4 Per acre production cost (Tk.) by varieties of pumpkin separately Farming time

Variety	Per acre production cost (Tk.)										
	Total	Land Preparation	Seed & seedling related	Weeding	Irrigation	Pesticides/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
All											
All	24662	3273	4217	2094	2371	2078	5308	501	3058	1431	332
Local	23147	3176	3756	1985	2335	1845	5039	392	2967	1323	329
Hybrid	26351	3382	4738	2210	2408	2340	5607	622	3157	1552	335
Summer											
Average	488	3058	4127	2287	2799	2342	5786	501	2893	1438	256
Local	23371	2959	3512	2144	2685	2117	5536	372	2486	1329	232
Hybrid	27590	3156	4741	2428	2912	2569	6030	629	3299	1546	280
Winter											
Average	23380	3606	4358	1793	1706	1668	4564	500	3315	1421	450
Local	22847	3466	4085	1771	1867	1482	4372	420	3611	1314	458
Hybrid	24063	3798	4732	1804	1478	1922	4826	609	2896	1562	436

Table-4.4 highlights that average per acre production cost is estimated at Taka 26351 for hybrid variety and the lowest per acre production cost is seen Taka 23147 for local variety respectively. The table shows that average per acre production cost is Taka 25488 in summer season whereas the cost is estimated Taka 23380 in winter season.

Table-4.5 Per Kg Production cost (Tk.), per acre production cost (Tk.) and quantity (Kg) of pumpkin and by farming time and division

Division	Per Kg Production cost (Tk), per acre production cost (Tk) and quantity (Kg)								
	All			Summer			Winter		
	Per Kg production cost (Tk.)	Production cost (Tk.)	Production (Kg)	Per Kg production cost (Tk.)	production cost (Tk.)	Production (Kg)	Per Kg production cost (Tk.)	production cost (Tk.)	Production (Kg)
All	4.51	24662	5470	4.62	25488	5511	4.33	23380	5404
Barisal	4.64	23865	5147	4.77	24942	5232	4.22	20685	4897
Chittagong	4.19	25180	6009	4.74	28757	6073	3.84	22919	5970
Dhaka	4.81	25990	5407	5.06	28164	5566	4.65	24679	5312
Khulna	4.55	24104	5303	4.41	24057	5449	5.11	24282	4750
Rajshahi	4.81	25617	5321	4.79	25607	5350	5.25	25747	4905
Rangpur	4.39	22146	5044	4.25	22393	5273	5.84	19168	3280
Sylhet	4.23	23195	5480	4.60	28995	6309	4.09	21343	5217

The table reveals that average per kilogram production cost of pumpkin in Bangladesh is Taka 4.51 whereas the cost in summer is Taka 4.62 and in winter is Taka 4.33 respectively. The table also shows that the highest average per kilogram production cost of pumpkin crop in Dhaka and Rajshahi division is estimated at Taka 4.81 and the lowest average per kilogram production cost in Chittagong division is Taka 4.19 respectively. The table further shows that per kilogram production cost is significantly different among divisions in winter or summer seasons.

Table-4.6 Per Kg Production cost (Tk.), per acre production cost (Tk.) and quantity (Kg) by farming time and varieties of pumpkin

Variety	Per Kg Production cost (Tk) , per acre production cost (Tk) and quantity (Kg)								
	All			Summer			Winter		
	Per Kg production cost (Tk.)	Per acre production cost (Tk.)	Per acre production (Kg)	Per Kg production cost (Tk.)	Per acre production cost (Tk.)	Per acre production (Kg)	Per Kg production cost (Tk.)	Per acre production cost (Tk.)	Per acre production (Kg)
Average	4.51	24662	5470	4.62	25488	5511	4.33	23380	5404
Local	4.73	23147	4886	4.77	23371	4900	4.69	22847	4868
Hybrid	4.30	26351	6128	4.51	27590	6119	3.92	24063	6141

The above table reveals that average per kilogram production cost of pumpkin crop in local variety is Taka 4.73 and for the hybrid variety it is Taka 4.30 respectively. The production cost per kilogram of pumpkin is Taka 4.51 for hybrid variety in summer season, which is higher than that of winter season (Taka 3.92) and is significantly different between summer and winter seasons.

Table-4.7 Per Kg Production cost (Tk), per acre production cost (Tk) & quantity (Kg) by farming time and tenancy

Tenure Ship	Per Kg Production cost (Tk) , per acre production cost (Tk) and quantity (Kg)								
	All			Summer			Winter		
	Per Kg production cost (Tk.)	Per acre production cost (Tk.)	Per acre production (Kg)	Per Kg production cost (Tk.)	Per acre production Cost (Tk.)	Per acre production (Kg)	Per Kg production cost (Tk.)	Per acre production cost (Tk.)	Per acre production (Kg)
Average	4.51	24662	5470	4.62	25488	5511	4.33	23380	5404
Owned	4.40	24275	5514	4.51	24892	5516	4.24	23368	5510
All others	4.95	26534	5359	5.14	27971	5441	4.67	24491	5245

The table shows that production cost per kilogram of pumpkin for land of owned tenureship is Taka 4.41 and for all other tenureship is Taka 4.95. The production cost per kilogram of pumpkin is Taka 5.14 for all other tenureship in summer season, which is higher than that of winter season (Taka 4.67) and is observed a significant different between summer and winter seasons.

Chapter-5

Labour and Labourer’s Cost

Labour and Labourer's Cost

Information related to number and cost of labourers of plantation, weeding and harvesting have been discussed in this chapter.

Table-5.1 Per acre number of labour engaged and cost of plantation by division

Division	All				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
Average	4.19	2.45	6.64	1087	4.13	2.31	6.44	1027	4.26	2.65	6.91	1181
Barisal	5.76	1.19	6.97	815	5.67	1.06	6.73	690	6.03	1.65	7.68	1182
Chittagong	3.55	2.53	6.09	1116	3.21	2.32	5.54	750	3.77	2.68	6.44	1348
Dhaka	6.10	1.48	7.58	1032	7.19	1.51	8.71	1263	5.44	1.45	6.89	891
Khulna	3.39	2.44	5.83	1065	4.01	1.38	5.41	938	0.97	6.49	7.46	1553
Rajshahi	2.66	3.60	6.26	1201	2.52	3.70	6.23	1192	4.52	2.12	6.64	1334
Rangpur	3.15	4.23	7.38	1351	3.07	4.47	7.55	1370	4.01	1.33	5.33	1116
Sylhet	5.69	2.53	8.22	1010	6.14	1.46	7.60	1117	5.54	2.88	8.41	976

In the above table it is observed that the average number of labourers required for per acre plantation at national level is 6.64 persons and their cost is Taka 1087. The highest number of required labourers in Sylhet division is 8.22 persons and their cost is Taka 1010. The lowest number of required labourers in Khulna division which is 5.83 persons and their cost is Taka 1065. Between the two seasons the average required number of labourers is significantly different between divisions. The average number of required labourers is 6.44 persons in summer and 6.91 persons in winter season, which however shows more or less similar.

Table-5.2 Per acre number of labour engaged and cost of weeding by division

Division	All				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
Average	9.06	3.74	12.80	2094	9.34	3.70	13.04	2287	8.64	3.79	12.42	1793
Barisal	9.34	1.14	10.48	1764	9.46	1.28	10.74	2012	8.98	0.72	9.70	1032
Chittagong	8.56	5.31	13.87	2626	11.02	4.58	15.60	3693	7.01	5.78	12.79	1952
Dhaka	11.81	2.24	14.05	1774	12.66	2.16	14.82	1848	11.30	2.29	13.59	1730
Khulna	7.42	4.57	11.99	1890	7.74	4.52	12.26	1914	6.23	4.79	11.02	1798
Rajshahi	8.93	4.06	12.99	2373	8.98	4.22	13.20	2307	8.25	1.81	10.06	3307
Rangpur	8.41	3.77	12.18	2143	8.36	3.99	12.35	2166	9.10	1.05	10.15	1856
Sylhet	8.67	1.75	10.42	1496	7.60	1.21	8.81	1568	9.00	1.92	10.92	1473

Table 5.2 shows that average number of required labourer for per acre weeding at national level is 12.80 persons and the respective cost is Taka 2094. The highest number

of required labourer in Dhaka division is14.05 persons and their cost is Taka 1774. The lowest number of required labourer is in Sylhet division which is 10.42 persons and its cost is Taka 1496. The average number of labourer required is higher in the summer season at 13.04 persons and their cost is Taka 2287 which is lower in the winter season with 12.42 persons and their cost of Taka 1793 respectively.

Table-5.3 Per acre number of labour engaged and cost of harvesting by division

Division	All				Summer				Winter			
	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)	Number of Labour			Labour cost (Tk.)
	Family	Hired	Total		Family	Hired	Total		Family	Hired	Total	
Average	17.29	5.27	22.56	3058	16.27	4.71	20.98	2893	18.88	6.16	25.04	3315
Barisal	15.57	3.07	18.64	2878	15.09	2.62	17.71	2967	17.00	4.42	21.42	2616
Chittagong	19.11	4.41	23.52	3179	18.41	2.93	21.34	3239	19.55	5.33	24.88	3142
Dhaka	20.69	5.80	26.47	3592	21.05	3.18	24.23	3342	20.44	7.38	27.82	3742
Khulna	13.05	6.96	20.01	2427	12.47	6.92	19.39	2269	15.24	7.09	22.33	3032
Rajshahi	19.82	2.49	22.31	3422	19.87	2.48	22.35	3452	19.12	2.62	21.73	3005
Rangpur	14.79	7.15	21.94	2644	14.73	7.41	22.14	2670	15.47	4.05	19.52	2328
Sylhet	16.22	5.83	22.05	3619	14.54	4.25	18.79	3537	16.75	6.32	23.07	3645

The above table provides the average number of required labourers for per acre harvesting at national level which is 22.56 persons and their cost is Taka 3058 during the survey years. The highest average number of required labourers in Dhaka division is 26.47 persons and the concern cost is Taka 3592. The lowest number of required labourers in Barisal division is 18.64 persons and their cost is Taka 2878. The average number of required labourers is higher in the winter season, which is found 25.04 persons and their cost is Taka 3315 compared to a lower average number of required labourers in the summer season which is 20.98 persons and their cost is Taka 2893.

Chapter-6

Production and Production Value

Production and Production value

The estimated per kilogram production value (Taka), per acre production (kilogram) and per acre production value (Taka) by division, tenureship and varieties of pumpkin productivity in Bangladesh have been presented in this chapter.

Table-6.1 Per acre production (Kg) & value (Tk.) by division

Division	Total		Green		Ripen		Shak		Others	
	Production Qty. (Kg.)	Production Value (Tk.)	Production Qty. (Kg.)	Production Value (Tk.)	Production Qty. (Kg.)	Production Value (Tk.)	Production Qty. (Kg.)	Production Value (Tk.)	Production (No.)	Production Value (Tk.)
All	5470	57968	1916	17808	3323	37928	231	2100	52	133
Barisal	5147	56899	1800	17511	3099	36957	248	2424	3	7
Chittagong	6009	61329	2076	19259	3315	36165	618	5621	75	285
Dhaka	5407	64373	2332	26034	2930	36802	145	1520	3	17
Khulna	5303	53344	1606	11625	3640	41368	57	348	2	3
Rajshahi	5321	57679	2096	23163	3206	34172	19	293	28	53
Rangpur	5044	49797	1395	7592	3613	41462	36	253	272	490
Sylhet	5480	53162	1603	13281	3680	38333	197	1400	78	148

* Others means seedling

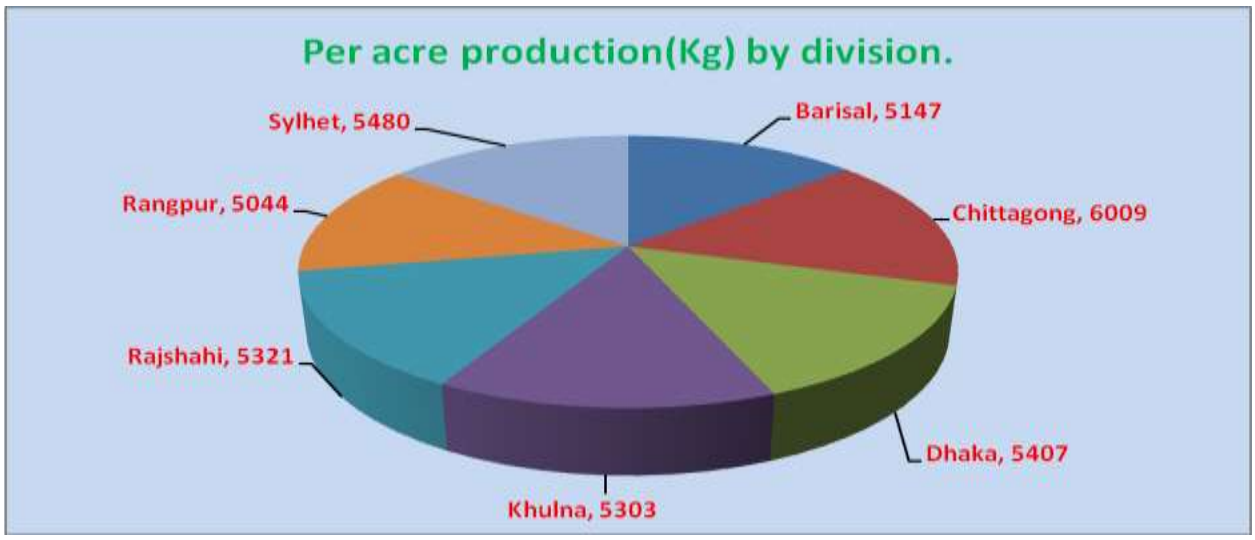


Table-6.1 shows the per acre production (Kg.) and per acre production value (Tk.) for green, ripen, shak & others pumpkin by division. The average per acre production value, per acre kilogram production of pumpkin crop are estimated Taka 57968 and 5470 kilogram respectively. The highest per acre production value of Taka 64373 and per acre production 5407 kilogram in Dhaka division whereas the lowest per acre production value of Taka 49797 and per acre production 5044 kilogram are found in Rangpur division.

Table-6.2 Per kg production value (Tk.), per acre production (Kg) & value (Tk) by season and division

Division	All			Summer			Winter		
	Per kg production value (Tk.)	Per acre production		Per kg production value (Tk.)	Per acre production		Per kg production value (Tk.)	Per acre production	
		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)
Average	10.60	5470	57968	10.60	5511	58408	10.60	5404	57285
Barisal	11.05	5147	56899	11.53	5232	60349	9.54	4897	46707
Chittagong	10.21	6009	61329	10.63	6073	64539	9.93	5970	59300
Dhaka	11.91	5407	64373	12.61	5566	70190	11.46	5312	60865
Khulna	10.06	5303	53344	9.85	5449	53687	10.95	4750	52028
Rajshahi	10.84	5321	57679	10.76	5350	57545	12.15	4905	59598
Rangpur	9.87	5044	49797	9.58	5273	50518	12.53	3280	41108
Sylhet	9.70	5480	53162	9.25	6309	58347	9.87	5217	51507

Table-6.2 is shows that per kilogram production value, per acre production quantity (Kg) and value (Tk.) by season and division. It is observed that the highest per kilogram production value in Dhaka division of Taka 11.91 and the lowest per kilogram production value in Sylhet division of Taka 9.70 respectively. The table also indicates that per kilogram production value are significantly different in divisions in two seasons.

Table-6.3 Per kg production value (Tk), per acre production (Kg) & value (Tk) by season and tenancy

Tenancy	All			Summer			Winter		
	Per Kg production Value (Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production	
		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)
Average	10.60	5470	57968	10.60	5511	58408	10.60	5404	57285
Own	10.60	5514	58422	10.50	5516	57926	10.74	5510	59150
All other	10.79	5359	57834	11.18	5441	60856	10.21	5245	53540

The above table shows that per kilogram production value (Tk.), per acre production quantity (Kg) and value (Tk.) by tenancy. It shows that the average per acre production value (Tk.), per acre production quantity (kilogram) and per kilogram production value (Tk.) of pumpkin crop in all other tenureship are estimated at Taka 57834, 5359 kilogram and Taka 10.79 respectively, whereas for owned land tenureship these are estimated at Taka 58422, 5514 kilograms and Taka 10.60 respectively. It is seen from the table that per acre production (kilogram) and value (Tk.) is significantly different in the two seasons.

Table-6.4 Per acre productivity of pumpkin crops by season and division

Division	All			Summer			Winter		
	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio	Per acre production		Benefit cost ratio
	Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)	
Average	24662	57968	2.35	25488	58408	2.29	23380	57285	2.45
Barisal	23865	56899	2.38	24942	60349	2.42	20685	46707	2.26
Chittagong	25180	61329	2.44	28757	64539	2.25	22919	59300	2.59
Dhaka	25990	64373	2.48	28164	70190	2.49	24679	60865	2.47
Khulna	24104	53344	2.21	24057	53687	2.23	24282	52028	2.15
Rajshahi	25617	57679	2.26	25607	57545	2.25	25747	59598	2.31
Rangpur	22146	49797	2.25	22393	50518	2.26	19168	41108	2.14
Sylhet	23195	53162	2.29	28995	58347	2.01	21343	51507	2.41

Per acre benefit cost ratio of pumpkin crop by season and division has been presented in the table-6.4. It is observed that the highest benefit cost ratio rate is in Dhaka division which is 2.48 followed by Chittagong division with 2.44 and the lowest benefit cost ratio is in Khulna division with 2.21 respectively.

Table-6.5 Per kg production value (Tk), per acre production (Kg) and value (Tk.) by season and variety

Variety	All			Summer			Winter		
	Per Kg production Value (Tk.)	Per acre production		Per Kg production Value(Tk.)	Per acre production		Per Kg production Value (Tk.)	Per acre production	
		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)		Qty. (Kg)	Value (Tk.)
Average	10.60	5470	57968	10.60	5511	58408	10.60	5404	57285
Local	11.06	4886	54017	10.67	4900	52272	11.58	4868	56355
Hybrid	10.19	6128	62472	10.54	6119	64522	9.54	6141	58560

It is seen from table-6.5 that the highest per acre yield rate of hybrid pumpkin is 6128 kilograms and its value is recorded at Taka 62472, followed by local variety of pumpkin is (4886 kilogram) with its value as Taka 54017. The lowest per kilogram production value is in hybrid pumpkin which is Taka 10.19 and the highest per kilogram production value is in local pumpkin which is Taka 11.06. Between the two seasons average per acre yield rate of pumpkin crop is not significantly different.

Table-6.6 Per acre productivity of pumpkin crops by varieties.

Variety	All			Summer			Winter		
	Per acre production		Benefit cost Ratio	Per acre production		Benefit cost Ratio	Per acre production		Benefit cost Ratio
	Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)		Cost (Tk.)	Value (Tk.)	
Average	24662	57968	2.35	25488	58408	2.29	23380	57285	2.45
Local	23147	54017	2.33	23371	52272	2.24	22847	56355	2.47
Hybrid	26351	62426	2.37	27590	64522	2.34	24063	58560	2.43

Table-6.6 exposes the productivity of the cost by varieties of pumpkin in both seasons in summer and winter. It is the most significant component of production because it determines whether the producer will continue the production of the respective crop. If the benefit cost ratio of a pumpkin crop is greater than one it means that the producer will be benefited and he will be interested to continue the production of the crop; and if it is less than one it means that the producer will be looser and he will quit the production of the crop. It is unearthed from the table that benefit cost ratio of pumpkin crops at national level is 2.35, in summer is 2.29 and in winter is 2.45. This means that the benefit cost ratio is greater than one in both the seasons and farmers get some profit from the production of pumpkin. At the national level the highest benefit cost ratio is 2.37 for hybrid categories of pumpkin and minimum/lowest benefit cost ratio of 2.33 in local variety of pumpkin.

Chapter-7

Sampling Error and Data Reliability

Sampling Error and Data Reliability

Using the Random Group Method the estimating variance of R, the following formula is used:

$$\text{Var®} = \frac{\sum_{g=1}(R_g - R)^2}{K(K-1)}$$

Where: R= the estimated average production cost

R_g= the estimated mean for the g^{th} random group

K = the number of random group

Table-7.1: Estimated per acre production cost (excluding leasing value) for the Year 2014 & their standard errors by division.

Division	Production Cost (Tk)	Standard Error	Relative Standard Error (%)
Average	24662	4.115	0.01669
Barisal	23865	13.486	0.05646
Chittagong	25180	10.696	0.04251
Dhaka	25990	9.229	0.03551
Khulna	24104	5.092	0.02114
Rajshahi	25617	5.232	0.02044
Rangpur	22146	12.004	0.05420
Sylhet	23195	5.010	0.02161

The table shows that the average production cost per acre for Barisal division of 23865 taka is significantly different from the 25180 taka average production for Chittagong division at 95% confidence interval. Similarly, the average production cost per acre for sylhet division of 23195 is significantly different from the 25990 taka average production for Dhaka division at 95% confidence interval. On the other hand, the average production cost per acre for Dhaka division of 25990 taka is significantly different from the 24104 taka average production for ion Khulna division at 90% confidence interval. Production cost per acre for all estimates have acceptable reliability in terms of sampling error.

Table-7.2: Estimated per acre production value (excluding leasing value) for the Year 2014 and their standard errors by division.

Division	Production Value (Tk)	Standard Error	Relative Standard Error (%)
Average	57968	28.913	0.04894
Barisal	56899	17.838	0.03019
Chittagong	61329	29.931	0.04855
Dhaka	64373	4.202	0.00633
Khulna	53344	15.685	0.02889
Rajshahi	57679	27.533	0.04667
Rangpur	49797	30.602	0.06116
Sylhet	53162	11.118	0.02037

The table shows that the average estimated per acre production values for all divisions of 57968 taka is significantly different from the average production for Khulna, Rangpur and Sylhet division at 95% confidence interval. However, the estimated per acre production value for Dhaka division is subject to the smaller standard error than for all six divisions. Production values per acre for all estimates have acceptable reliability in terms of sampling error.

Annex

Annex-A: Statistical Table
Annex-B: Concepts and Definitions
Annex-C: Questionnaire (Bangla)
Annex-D: Questionnaire (English)
Annex-E: Reference

Annex-A: Statistical Table

Table-1: Distribution of area (acre) under pumpkin cultivation by tenancy and division

.

Division	Tenancy					
	Total	Owned	Share crop	Mortgage	Lease	Other
1	2	3	4	5	6	7
All						
Bangladesh	120993	92555	7799	7068	11981	1577
Barisal	10686	8302	162	761	904	557
Chittagong	29885	18926	5271	2581	2759	348
Dhaka	24651	21465	802	1432	744	209
Khulna	27262	21250	463	675	4870	4
Rajshahi	12141	9460	475	1129	944	120
Rangpur	11493	9256	225	195	1501	315
Sylhet	4875	3895	401	295	260	24
Summer						
Total	73598	56492	3291	4161	8474	1168
Barisal	7983	6158	77	535	689	523
Chittagong	11576	6296	1753	1431	1897	199
Dhaka	9274	8402	264	225	382	-
Khulna	21629	17627	433	645	2918	4
Rajshahi	11345	8781	469	1054	908	120
Rangpur	10613	8381	220	195	1501	315
Sylhet	1180	846	73	75	178	6
Winter						
Total	47395	36063	4508	2907	3507	409
Barisal	2703	2144	84	226	215	34
Chittagong	18309	12630	3518	1150	862	149
Dhaka	15377	13063	537	1207	362	209
Khulna	5633	3623	29	29	1951	-
Rajshahi	796	679	6	75	36	-
Rangpur	880	875	5	-	-	-
Sylhet	3696	3049	328	220	81	18

Table-2: Distribution of number households under Pumpkin cultivation by tenancy & division.

Division	Tenancy					
	Total	Owned	Share crop	Mortgage	Lease	Other
1	2	3	4	5	6	7
All						
Bangladesh	663278	556319	34136	30315	32860	9647
Barisal	69485	59107	1203	3760	3309	2106
Chittagong	173769	130927	19193	10111	10796	2742
Dhaka	190719	170676	6406	6819	4339	2480
Khulna	82743	69248	1687	2575	9144	89
Rajshahi	71957	60979	2083	4728	3526	641
Rangpur	45093	40400	1428	867	969	1428
Sylhet	29512	24982	2136	1456	777	162
Summer						
Total	387382	323131	16540	17488	24952	5270
Barisal	48955	42187	451	2106	2331	1880
Chittagong	77973	54496	8397	5484	8397	1200
Dhaka	74180	69014	2066	1653	1446	-
Khulna	69337	57352	1598	2486	7813	89
Rajshahi	68351	57854	2003	4407	3446	641
Rangpur	41369	36727	1377	867	969	1428
Sylhet	7216	5501	647	485	550	32
Winter						
Total	275896	233188	17596	12827	7908	4377
Barisal	20530	16920	752	1654	978	226
Chittagong	95796	76431	10796	4627	2399	1542
Dhaka	116539	101662	4339	5166	2893	2480
Khulna	13406	11897	89	89	1332	-
Rajshahi	3606	3125	80	321	80	-
Rangpur	3724	3673	51	-	-	-
Sylhet	22296	19481	1489	971	227	129

Table-3: Distribution of area (acre) under varieties of Pumpkin cultivation by farming time and division.

Division	Variety			
	Total	Local	Hybrid	Others
1	2	3	4	5
All				
Bangladesh	120993	63598	56852	543
Barisal	10686	6145	4507	33
Chittagong	29885	18462	11343	81
Dhaka	24651	16671	7897	83
Khulna	27262	11575	15592	95
Rajshahi	12141	5664	6264	213
Rangpur	11493	3221	8254	18
Sylhet	4875	1860	2995	20
Summer				
Total	73598	36348	36866	385
Barisal	7983	4833	3124	26
Chittagong	11576	5840	5655	81
Dhaka	9274	6397	2851	25
Khulna	21629	11145	10420	64
Rajshahi	11345	5167	6007	171
Rangpur	10613	2408	8186	18
Sylhet	1180	558	622	-
Winter				
Total	47395	27250	19986	158
Barisal	2703	1312	1384	7
Chittagong	18309	12621	5688	-
Dhaka	15377	10274	5046	58
Khulna	5633	431	5171	31
Rajshahi	796	498	256	42
Rangpur	880	813	68	-
Sylhet	3696	1302	2373	20

Table-4: Distribution of households under varieties of Pumpkin cultivation by farming time and division.

Division	Variety			
	Total	Local	Hybrid	Others
1	2	3	4	5
All				
Bangladesh	648737	376580	268475	3682
Barisal	67530	36698	30606	226
Chittagong	166743	108477	57923	343
Dhaka	189066	131003	56823	1240
Khulna	79813	29297	49806	710
Rajshahi	71716	34696	36379	641
Rangpur	44583	20455	24026	102
Sylhet	29286	15953	12912	421
Summer				
Total	381430	202017	176978	2435
Barisal	47526	28651	18725	150
Chittagong	76602	42328	33931	343
Dhaka	73974	50211	22936	827
Khulna	67206	24592	42082	533
Rajshahi	68110	33815	33815	481
Rangpur	40859	17241	23516	102
Sylhet	7152	5178	1974	-
Winter				
Total	267307	174564	91497	1247
Barisal	20003	8046	11882	75
Chittagong	90141	66149	23992	-
Dhaka	115093	80792	33887	413
Khulna	12607	4705	7724	178
Rajshahi	3606	881	2564	160
Rangpur	3724	3214	510	-
Sylhet	22134	10776	10938	421

Table-5: Distribution of area (acre) and number of households by cultivation type and division

Division	Type of cultivation					
	Total		**Single**		**Mixed**	
	Area	Household	Area	Household	Area	Household
1	2	3	4	5	6	7
All						
Bangladesh	120993	648737	70724	387725	50269	261012
Barisal	10686	67530	7162	51286	3524	16243
Chittagong	29885	166743	14069	80715	15816	86028
Dhaka	24651	189066	13493	126251	11158	62816
Khulna	27262	79813	19739	40661	7522	39152
Rajshahi	12141	71716	7258	43511	4883	28206
Rangpur	11493	44583	5387	22648	6106	21934
Sylhet	4875	29286	3615	22652	1260	6634
Summer						
Total	73598	381430	42342	217497	31256	163933
Barisal	7983	47526	5145	35269	2838	12258
Chittagong	11576	76602	5237	36330	6339	40272
Dhaka	9274	73974	5151	47938	4122	26035
Khulna	21629	67206	14704	32582	6925	34624
Rajshahi	11345	68110	6552	40386	4793	27725
Rangpur	10613	40859	4940	19588	5672	21271
Sylhet	1180	7152	613	5404	567	1747
Winter						
Total	47395	267307	28382	170228	19013	97080
Barisal	2703	20003	2017	16018	686	3986
Chittagong	18309	90141	8832	44385	9477	45756
Dhaka	15377	115093	8342	78313	7036	36780
Khulna	5633	12607	5036	8079	597	4528
Rajshahi	796	3606	706	3125	91	481
Rangpur	880	3724	447	3061	434	663
Sylhet	3696	22134	3003	17248	693	4886

Table-6: Per acre land preparation cost (Tk.) by farming time and division

Farming year/ land type	Area	Land preparation cost (Tk.)					
		Total cost (Tk.)	Plough/Hoe		Power tiller		Other Cost (Tk.)
			Number	Cost (Tk.)	Number	Cost (Tk.)	
1	2	3	4	5	6	7	8
All							
Bangladesh	120993	3273	4.66	1384	3.12	1190	698
Barisal	10686	3195	6.88	1803	1.98	873	519
Chittagong	29885	3269	6.01	1439	3.23	781	1049
Dhaka	24651	3954	5.01	1914	4.00	1061	979
Khulna	27262	3189	3.54	1045	3.10	1778	366
Rajshahi	12141	2907	3.91	863	4.85	1487	558
Rangpur	11493	2725	4.43	1205	3.20	1111	409
Sylhet	4875	2687	5.94	1071	3.65	1214	402
Summer							
Total	73598	3058	4.39	1347	3.44	1357	354
Barisal	7983	2981	6.67	1718	1.07	836	427
Chittagong	11576	3115	6.22	1790	4.64	1003	322
Dhaka	9274	3441	6.16	1805	4.01	1116	520
Khulna	21629	3159	3.58	1098	3.67	1831	231
Rajshahi	11345	2837	4.12	880	5.07	1529	428
Rangpur	10613	2712	4.22	1215	3.32	1138	360
Sylhet	1180	3378	5.06	1112	3.72	1877	389
Winter							
Total	47395	3606	5.09	1443	3.21	932	1231
Barisal	2703	3826	6.51	2054	2.84	980	791
Chittagong	18309	3367	4.24	1218	2.33	640	1509
Dhaka	15377	4264	5.91	1980	2.99	1028	1255
Khulna	5633	3303	3.39	840	0.91	1577	886
Rajshahi	796	3910	1.01	621	4.23	878	2411
Rangpur	880	2870	5.07	1087	1.74	787	996
Sylhet	3696	2466	4.90	1058	3.63	1002	406

Table-7: Per acre seed and seed related cost (Tk.) by farming time and division

Division	Total cost (Tk.)	Seed		
		Qty.(Kg.)	Value (Tk.)	Seed sowing/ plantation cost (Tk.)
1	2	3	4	5
All				
Average	2880	0.481	1402	1478
Barisal	3074	0.597	1343	1731
Chittagong	2974	0.369	1256	1718
Dhaka	3251	0.583	1545	1706
Khulna	2688	0.445	1506	1182
Rajshahi	2401	0.418	1174	1227
Rangpur	2686	0.540	1576	1110
Sylhet	2724	0.612	1287	1437
Summer				
Average	2821	0.444	1467	1354
Barisal	3204	0.575	1305	1899
Chittagong	2902	0.302	1378	1524
Dhaka	3410	0.484	1846	1564
Khulna	2695	0.423	1527	1168
Rajshahi	2292	0.408	1110	1182
Rangpur	2702	0.546	1612	1090
Sylhet	3256	0.468	1487	1769
Winter				
Average	2972	0.537	1302	1670
Barisal	2688	0.663	1454	1234
Chittagong	3019	0.411	1179	1840
Dhaka	3157	0.642	1364	1793
Khulna	2662	0.526	1425	1237
Rajshahi	3955	0.562	2091	1864
Rangpur	2508	0.475	1146	1362
Sylhet	2554	0.658	1223	1331

Table-8: Per acre no. of labourer for seedling raising and their cost (Tk.) and seedling purchase cost (Tk.) by farming time & division

Division	Total Cost (TK.)	No. of labourer for seedling raising and their cost (Tk.)					Purchase cost (Tk.)
		Family (Number)		Hired (Number)		Cost (Tk.)	
		Male	Female	Male	Female		
1	2	3	4	5	6	7	8
All							
Average	640	1.58	0.33	0.85	0.09	505	135
Barisal	454	1.82	0.57	0.01	0.01	314	140
Chittagong	821	1.26	0.10	0.82	0.02	561	260
Dhaka	679	2.45	0.87	1.05	0.01	605	74
Khulna	574	1.44	0.13	1.06	-	539	35
Rajshahi	746	0.94	0.04	1.19	-	436	310
Rangpur	380	1.10	0.32	0.60	0.90	364	16
Sylhet	473	2.26	0.24	0.31	0.01	403	70
Summer							
Average	599	1.43	0.29	0.74	0.14	434	165
Barisal	348	1.68	0.26	-	-	235	113
Chittagong	629	1.33	-	0.15	-	221	408
Dhaka	871	2.07	1.23	1.09	0.02	703	168
Khulna	579	1.56	0.16	1.01	-	540	39
Rajshahi	747	0.85	0.03	1.21	-	418	330
Rangpur	372	1.01	0.35	0.63	0.97	356	15
Sylhet	823	2.69	0.38	0.47	-	658	165
Winter							
Average	705	1.82	0.38	1.00	0.02	617	88
Barisal	767	2.25	1.47	0.06	0.06	547	220
Chittagong	942	1.22	0.16	1.24	0.04	776	166
Dhaka	562	2.67	0.66	1.02	-	545	17
Khulna	553	0.95	-	1.26	-	537	16
Rajshahi	727	2.21	0.20	0.91	-	697	30
Rangpur	481	2.09	-	0.17	0.06	458	23
Sylhet	361	2.12	0.19	0.26	0.02	322	39

Table-9: Per acre no. of labourer & their cost (Tk.) for seedling plantation by farming time & division

Division	Total Cost (Tk.)	No. of labourer & their cost (Tk.)					Others cost (Tk.)
		Family(Number)		Hired (Number)		Cost (Tk.)	
		Male	Female	Male	Female		
1	2	3	4	5	6	7	8
All							
Average	697	1.87	0.41	1.36	0.15	582	115
Barisal	574	2.44	0.93	1.11	0.06	501	73
Chittagong	678	2.08	0.11	1.67	0.02	555	123
Dhaka	556	1.82	0.96	0.41	0.01	427	130
Khulna	577	1.61	0.21	1.25	0.13	526	51
Rajshahi	906	1.66	0.02	2.38	0.03	765	141
Rangpur	1232	1.44	0.29	1.64	1.09	987	245
Sylhet	688	2.54	0.65	2.17	0.04	607	82
Summer							
Average	708	2.00	0.41	1.20	0.23	593	115
Barisal	517	2.72	1.01	1.03	0.03	455	62
Chittagong	693	1.88	-	2.13	0.04	529	164
Dhaka	697	2.58	1.31	0.40	-	560	137
Khulna	437	2.02	0.27	0.21	0.16	398	40
Rajshahi	874	1.62	0.02	2.48	0.01	774	100
Rangpur	1277	1.41	0.30	1.69	1.18	1014	263
Sylhet	499	2.47	0.60	0.99	-	459	40
Winter							
Average	680	1.65	0.41	1.60	0.03	564	116
Barisal	743	1.61	0.70	1.36	0.17	635	107
Chittagong	669	2.20	0.19	1.39	0.01	572	96
Dhaka	471	1.36	0.75	0.42	0.01	364	126
Khulna	1112	0.02	-	5.23	-	1016	96
Rajshahi	1362	2.11	-	1.01	0.20	637	725
Rangpur	692	1.80	0.12	1.04	0.06	658	35
Sylhet	749	2.56	0.67	2.55	0.05	654	95

Table-10: Per acre no. of labourer & their cost (Tk.) and irrigation cost (Tk.) by farming time and division

Division	No. of labourer & their cost (Tk.)					Irrigation cost (Tk.)		
	Family (Number)		Hired (Number)		Cost (Tk.)	Irrigation cost (Tk.)	Irrigation related cost (Tk.)	Total cost (Tk.)
	Male	Female	Male	Female				
1	2	3	4	5	6	7	8	9
All								
Average	7.41	1.65	2.39	1.35	2094	2075	295	4465
Barisal	7.74	1.60	1.06	0.08	1764	2058	339	4162
Chittagong	6.69	1.87	2.12	3.19	2626	2175	339	5140
Dhaka	9.02	2.79	2.05	0.19	1774	1879	127	3780
Khulna	6.73	0.69	3.37	1.20	1890	2051	324	4265
Rajshahi	7.71	1.22	3.35	0.71	2373	2964	375	5713
Rangpur	6.63	1.78	2.01	1.76	2143	1461	355	3959
Sylhet	7.85	0.82	1.69	0.06	1496	1863	286	3645
Summer								
Average	7.56	1.78	2.59	1.11	2287	2441	358	5087
Barisal	7.43	2.03	1.24	0.04	2012	2318	392	4721
Chittagong	7.64	3.38	2.89	1.69	3693	2656	565	6914
Dhaka	9.92	2.74	1.80	0.36	1848	2727	104	4680
Khulna	6.96	0.78	3.11	1.41	1914	2259	316	4490
Rajshahi	7.68	1.30	3.46	0.76	2307	3097	375	5779
Rangpur	6.66	1.70	2.14	1.85	2166	1522	369	4058
Sylhet	7.13	0.47	1.21	-	1568	4228	567	6363
Winter								
Average	7.18	1.46	2.08	1.71	1793	1507	199	3499
Barisal	8.65	0.33	0.53	0.19	1032	1291	185	2508
Chittagong	6.09	0.92	1.63	4.15	1952	1870	196	4019
Dhaka	8.48	2.82	2.20	0.09	1730	1368	140	3238
Khulna	5.88	0.35	4.40	0.39	1798	1253	353	3404
Rajshahi	8.15	0.10	1.81	-	3307	1077	381	4765
Rangpur	6.32	2.78	0.41	0.64	1856	722	187	2764
Sylhet	8.07	0.93	1.84	0.08	1473	1108	197	2778

Table-11: Per acre pesticide & Insecticide cost (Tk.) and othr cost (Tk) by farming time and division

Division	Total Cost (Tk.)	Pesticide Cost (Tk.)	Insecticide cost (Tk.)	Others (TK.)
1	2	3	4	5
All				
Average	2078	1184	394	500
Barisal	1589	754	532	302
Chittagong	1810	901	358	552
Dhaka	1772	1079	379	314
Khulna	2963	2041	189	732
Rajshahi	2127	1063	763	301
Rangpur	1837	841	482	514
Sylhet	1838	703	406	730
Summer				
Average	2342	1343	443	556
Barisal	1579	711	608	260
Chittagong	2469	974	696	799
Dhaka	2000	1124	543	333
Khulna	3138	2338	4	796
Rajshahi	2104	1085	738	282
Rangpur	1694	703	521	470
Sylhet	2477	954	555	969
Winter				
Average	1668	936	318	414
Barisal	1618	882	308	429
Chittagong	1393	854	144	395
Dhaka	1635	1051	281	303
Khulna	2289	901	899	490
Rajshahi	2446	755	1114	577
Rangpur	3556	2504	2	1050
Sylhet	1635	623	359	653

Table-12: Per acre type of fertilizer used (kg) and Price (Tk.) by farming time & division

Division	Total value	Urea		TSP		DAP		MOP		Khail		Cake (Tk.)	Others (Tk.).
		Qty. (kg)	Price (Tk.)	Qty. (kg)	Price (Tk.)	Qty. (kg)	Price (Tk.)	Qty. (kg)	Price (Tk.)	Qty. (kg)	Price (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
All													
Average	5308	73	1172	59	1334	18	453	26	434	6	129	1474	313
Barisal	5741	99	1647	84	1941	8	176	21	407	3	95	1225	250
Chittagong	5026	78	1111	73	1420	12	200	19	264	6	74	1624	334
Dhaka	5691	62	948	47	1060	32	814	27	409	9	220	1840	400
Khulna	5622	89	1564	61	1523	18	479	35	634	3	65	1155	202
Rajshahi	4831	57	1002	47	1181	31	902	24	420	8	204	872	249
Rangpur	4721	43	792	43	1048	7	192	32	527	1	33	1691	436
Sylhet	4961	52	757	45	857	7	131	24	368	16	467	2013	369
Summer													
Average	5786	73	1242	58	1406	20	528	30	504	7	157	1637	313
Barisal	6369	113	1970	95	2283	8	191	20	436	3	84	1196	208
Chittagong	6098	92	1165	79	1489	13	222	30	386	10	101	2236	499
Dhaka	7233	57	993	49	1299	35	995	36	601	19	510	2438	388
Khulna	5619	80	1484	50	1360	21	579	31	565	2	55	1410	165
Rajshahi	4923	56	1006	48	1207	32	951	25	431	9	217	867	244
Rangpur	4828	45	814	45	1104	7	204	34	555	1	36	1750	465
Sylhet	6512	56	740	53	970	6	56	27	441	21	722	2959	624
Winter													
Average	4564	72	1062	61	1222	16	336	21	327	4	84	1221	313
Barisal	3887	57	692	50	933	7	130	22	321	6	128	1310	373
Chittagong	4347	69	1077	69	1376	12	186	12	186	4	56	1236	229
Dhaka	4761	65	921	47	915	31	705	22	293	2	39	1479	408
Khulna	5637	127	1870	105	2150	5	96	51	899	5	102	174	346
Rajshahi	3513	74	950	41	799	14	205	18	259	2	23	948	328
Rangpur	2224	22	524	14	380	2	51	8	185	*	5	983	97
Sylhet	4466	50	762	43	821	8	155	23	344	15	386	1712	288

Note: * means less than 1 kilogram

Table-13: Per acre type of Hormone used (kg) & their price (Tk.) by farming time & division

Division	Total Cost (Tk.)	Ocuzim		Ithril		Carbied		Others cost (Tk.)
		Qty. (MG)	Cost (Tk.)	Qty. (MG)	Cost (Tk.)	Qty. (MG)	Cost (Tk.)	
1	2	3	4	5	6	7		
All								
Average	501	235	324	31	38	27	26	108
Barisal	190	72	130	8	16	10	14	29
Chittagong	431	140	319	11	34	12	21	55
Dhaka	728	504	457	84	73	65	38	161
Khulna	319	105	254	3	6	*	1	55
Rajshahi	683	316	390	74	93	30	32	140
Rangpur	706	266	364	15	22	50	74	247
Sylhet	538	258	251	22	21	63	37	229
Summer								
Average	501	221	323	25	38	26	25	109
Barisal	160	65	104	6	12	12	17	27
Chittagong	769	224	546	17	81	28	52	89
Dhaka	573	513	351	71	58	47	12	151
Khulna	251	55	199	4	8	*	2	40
Rajshahi	685	334	413	60	69	32	33	140
Rangpur	700	285	390	16	24	42	42	244
Sylhet	615	326	231	5	4	204	99	281
Winter								
Average	500	256	326	41	39	29	28	107
Barisal	276	95	210	16	26	4	5	35
Chittagong	217	87	176	7	4	2	1	34
Dhaka	821	498	520	93	82	75	53	166
Khulna	578	298	463	-	-	-	-	115
Rajshahi	659	53	63	267	436	4	16	144
Rangpur	774	35	47			142	452	275
Sylhet	514	236	257	28	27	18	17	213

Table-14: Per acre no. of labourer and their cost (Tk.) for harvesting, transport and others cost (Tk.) by farming time & division

Division	No. of labourer and their cost (Tk.) for harvesting					Transport cost (Tk.)	Others cost (Tk.)
	Family (Number)		Hired (Number)		Cost (Tk.)		
	Male	Female	Male	Female			
1	2	3	4	5	6	7	8
All							
Average	14.85	2.44	4.10	1.17	3058	1431	332
Barisal	13.00	2.57	2.81	0.26	2878	1711	299
Chittagong	16.19	2.92	3.88	0.53	3179	1483	371
Dhaka	18.07	2.60	5.71	0.09	3592	1439	547
Khulna	11.66	1.39	3.61	3.35	2427	1309	171
Rajshahi	15.40	4.42	2.42	0.07	3422	1608	272
Rangpur	13.16	1.63	4.66	2.49	2641	1061	198
Sylhet	14.85	1.37	5.76	0.07	3619	1577	444
Summer							
Average	12.92	3.35	2.87	1.84	2893	1438	256
Barisal	12.06	3.03	2.61	0.01	2967	1883	212
Chittagong	12.95	5.46	1.69	1.24	3239	1510	421
Dhaka	15.26	5.79	3.14	0.04	3342	1506	411
Khulna	10.96	1.51	2.72	4.20	2269	1281	140
Rajshahi	15.26	4.61	2.42	0.06	3452	1656	258
Rangpur	12.97	1.76	4.73	2.68	2670	1071	210
Sylhet	13.06	1.48	4.17	0.08	3537	1280	254
Winter							
Average	17.85	1.03	6.02	0.14	3315	1421	450
Barisal	15.80	1.20	3.42	1.00	2616	1200	555
Chittagong	18.24	1.31	5.26	0.07	3142	1466	339
Dhaka	19.77	0.67	7.26	0.12	3742	1398	629
Khulna	14.34	0.90	7.03	0.06	3032	1419	291
Rajshahi	17.51	1.61	2.52	0.10	3005	936	469
Rangpur	15.35	0.12	3.82	0.23	2291	950	56
Sylhet	15.42	1.33	6.26	0.06	3645	1671	505

Table-15.a: Per acre production cost (Tk.) by farming time & division

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
Average	24662	3273	2880	1337	2094	2371	2078	5308	501	3058	1431	332
Barisal	23865	3195	3074	1028	1764	2398	1589	5741	190	2878	1711	299
Chittagong	25180	3269	2974	1499	2626	2514	1810	5026	431	3179	1483	371
Dhaka	25990	3954	3252	1235	1774	2006	1772	5691	728	3592	1439	547
Khulna	24104	3289	2688	1150	1890	2375	2963	5622	319	2427	1309	171
Rajshahi	25617	2907	2401	1652	2373	3340	2127	4831	683	3422	1608	272
Rangpur	22146	2725	2686	1612	2143	1816	1837	4721	706	2641	1061	198
Sylhet	23195	2687	2724	1161	1496	2149	1838	4961	538	3619	1577	444
Summer												
Average	25488	3058	2820	1307	2287	2799	2342	5786	501	2893	1438	256
Barisal	24942	2981	3204	865	2012	2710	1579	6369	160	2967	1883	212
Chittagong	28757	3115	2901	1322	3693	3221	2469	6098	769	3239	1510	421
Dhaka	28164	3441	3410	1568	1848	2832	2000	7233	573	3342	1506	411
Khulna	24057	3159	2695	1016	1914	2576	3138	5619	251	2269	1281	140
Rajshahi	25607	2837	2292	1621	2307	3472	2104	4923	685	3452	1656	258
Rangpur	22393	2712	2701	1649	2166	1891	1694	4928	700	2670	1071	210
Sylhet	28995	3378	3256	1322	1568	4794	2477	6512	615	3537	1280	254
Winter												
Average	23380	3606	2973	1385	1793	1706	1668	4564	500	3315	1421	450
Barisal	20685	3826	2689	1509	1032	1476	1618	3887	276	2616	1200	555
Chittagong	22919	3367	3020	1611	1952	2066	1393	4347	217	3142	1466	339
Dhaka	24679	4264	3157	1034	1730	1508	1635	4761	821	3742	1398	629
Khulna	24282	3303	2663	1665	1798	1606	2289	5637	578	3032	1419	291
Rajshahi	25747	3910	3955	2089	3307	1458	2446	3513	659	3005	936	469
Rangpur	19168	2870	2508	1173	1856	909	3556	2224	774	2291	950	56
Sylhet	21343	2466	2554	1110	1473	1305	1635	4466	514	3645	1671	505

Table-15.b: Per acre production quantity (Kg) & their value (Tk.) by farming time & division

.Division	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8	9	10
All									
Average	57968	52	133	231	2100	1916	17808	3323	37928
Barisal	56899	3	7	248	2424	1800	17511	3099	36957
Chittagong	61329	75	285	618	5621	2076	19259	3315	36165
Dhaka	64373	3	17	145	1520	2332	26034	2930	36802
Khulna	53344	2	3	57	348	1606	11625	3640	41368
Rajshahi	57679	28	53	19	293	2096	23163	3206	34172
Rangpur	49797	272	490	36	253	1395	7592	3613	41462
Sylhet	53162	78	148	197	1400	1603	13281	3680	38333
Summer									
Total	58408	62	120	128	1562	2064	19494	3319	37232
Barisal	60349	4	9	222	2144	1667	16176	3343	42020
Chittagong	64539	60	148	372	5617	2582	31057	3119	27717
Dhaka	70190	2	11	170	1858	2656	28711	2740	39609
Khulna	53687	3	3	37	332	1916	13962	3496	39389
Rajshahi	57545	23	46	20	307	2096	23240	3234	33492
Rangpur	50518	295	530	33	232	1492	8111	3748	41645
Sylhet	58347	310	606	364	2122	2538	23820	3407	31798
Winter									
Total	57285	36	153	389	2935	1687	15189	3328	39008
Barisal	46707	-	-	326	3249	2191	21457	2380	22001
Chittagong	59300	85	372	774	5623	1757	11799	3439	41506
Dhaka	60865	4	21	131	1315	2137	24419	3044	35109
Khulna	52028	-	-	137	408	417	2652	4196	48967
Rajshahi	59598	91	151	12	95	2093	22058	2800	37294
Rangpur	41108	-	-	77	503	220	1341	1983	39264
Sylhet	51507	4	2	144	1169	1305	9917	3768	40418

Table-16.a: Per acre production cost (Tk.) for local variety by farming time & division

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
Average	23147	3176	2707	1049	1985	2335	1845	5039	392	2967	1323	329
Barisal	23564	2915	3011	1223	1904	2897	1558	4993	141	2897	1703	322
Chittagong	23179	2946	3137	1104	2184	2352	1776	4586	284	3123	1344	343
Dhaka	25046	3653	2902	812	1706	2019	1627	5808	685	3901	1405	528
Khulna	20673	3197	1905	1071	1818	2223	2662	5452	44	1225	1049	27
Rajshahi	22100	2890	2088	1265	2276	2872	1257	3773	681	3475	1176	346
Rangpur	21947	2812	2870	800	2693	1749	2071	4468	766	2455	1070	194
Sylhet	25233	3437	2363	1676	1662	3181	1802	5164	290	3435	1728	495
Summer												
Average	23371	2959	2485	1027	2144	2685	2117	5536	372	2486	1329	232
Barisal	25176	2908	3338	992	2129	3269	1586	5517	131	3158	1918	228
Chittagong	22637	2497	2385	1058	2977	2111	2486	4676	422	2526	1158	341
Dhaka	27837	3094	3262	696	1710	3066	2129	7732	680	3410	1649	410
Khulna	20775	3169	1900	1109	1846	2275	2728	5535	45	1083	1059	27
Rajshahi	21857	2841	1896	1257	2115	2986	1154	3906	666	3511	1206	318
Rangpur	23164	2908	3014	773	2944	2034	1528	5254	750	2610	1102	247
Sylhet	31581	3895	2266	2041	1178	7500	2154	6405	491	3383	1957	311
Winter												
Average	22847	3466	3005	1080	1771	1867	1482	4372	420	3611	1314	458
Barisal	17626	2939	1807	2073	1072	1525	1456	3063	178	1935	912	666
Chittagong	23433	3156	3490	1126	1812	2465	1443	4544	219	3402	1432	343
Dhaka	23312	4000	2678	884	1703	1368	1315	4613	689	4207	1254	602
Khulna	18203	3898	2037	151	1146	947	1058	3450	30	4661	807	19
Rajshahi	24500	3376	3991	1343	3870	1744	2266	2458	834	3114	882	623
Rangpur	18313	2526	2443	879	1945	897	3692	2121	812	1989	971	39
Sylhet	22556	3244	2403	1523	1866	1360	1653	4641	206	3456	1632	572

Table-16.b: Per acre production quantity (Kg) & their value (Tk.) for local variety by farming time & division

Division	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8	9	10
All									
Average	54017	31	128	285	2412	1709	15548	2892	35929
Barisal	53235	6	12	264	2590	1549	15030	2333	35603
Chittagong	54074	94	404	702	5647	1418	9165	3074	38858
Dhaka	65968	4	18	173	1663	2091	26697	2596	37590
Khulna	40958	-	-	14	126	1594	7763	3470	33069
Rajshahi	50378	6	22	10	99	2395	24998	2204	25259
Rangpur	50974	12	25	81	518	1116	7692	3443	42739
Sylhet	47203	43	70	147	1260	1303	13177	3191	32696
Summer									
Average	52272	16	43	131	1467	1910	16802	2859	33961
Barisal	57150	7	15	255	2411	1613	15256	2545	39468
Chittagong	47881	64	179	300	4120	1643	15856	2461	27726
Dhaka	73850	3	16	216	2215	2574	29410	2513	42209
Khulna	40916	-	-	13	119	1631	7759	3522	33037
Rajshahi	48442	7	24	9	95	2403	24889	2099	23435
Rangpur	54835	16	33	81	509	1449	10000	3981	44292
Sylhet	61675	116	221	66	844	2605	29095	2866	31516
Winter									
Average	56355	52	242	491	3677	1440	13868	2937	38568
Barisal	38812	-	-	296	3252	1313	14195	1551	21365
Chittagong	56979	108	510	890	6363	1312	6026	3362	44080
Dhaka	61069	4	19	146	1320	1791	25011	2648	34719
Khulna	41973	-	-	40	286	691	7857	2198	33831
Rajshahi	69509	-	-	17	139	2319	26081	3243	43289
Rangpur	39445	-	-	84	545	121	800	1838	38100
Sylhet	41100	12	6	181	1435	754	6465	3328	33194

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Table-17.a: Per acre production cost (Tk.) for hybrid variety by farming time & division

Division	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ Insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
Average	26351	3382	3075	1663	2210	2408	2340	5607	622	3157	1552	335
Barisal	24263	3579	3159	762	1573	1713	1629	6753	256	2852	1720	268
Chittagong	28428	3798	2706	2144	3349	2778	1865	5744	671	3254	1705	414
Dhaka	27925	4594	3994	2133	1881	1971	2080	5421	818	2936	1511	586
Khulna	26663	3183	3274	1210	1943	2489	3188	5750	523	3324	1501	279
Rajshahi	28895	2924	2695	2015	2454	3767	2943	5823	685	3373	2014	203
Rangpur	22219	2690	2614	1931	1926	1843	1745	4815	682	2714	1058	199
Sylhet	21914	2216	2951	838	1392	1501	1861	4834	693	3734	1481	412
Summer												
Average	27591	3156	3155	1586	2431	2912	2567	6030	629	3299	1546	280
Barisal	24559	3095	2995	668	1829	1839	1567	7676	206	2668	1829	187
Chittagong	35164	3762	3442	1597	4442	4383	2451	7587	1133	3985	1879	504
Dhaka	28843	4222	3743	3534	2157	2305	1708	6052	333	3191	1186	412
Khulna	27588	3149	3550	917	1987	2899	3579	5709	473	3545	1520	261
Rajshahi	28940	2834	2644	1944	2478	3903	2948	5827	702	3398	2055	205
Rangpur	22164	2654	2609	1908	1936	1849	1744	4831	685	2688	1061	199
Sylhet	26670	2914	4142	678	1919	2369	2767	6608	721	3676	673	203
Winter												
Average	24063	3798	2928	1804	1804	1478	1922	4826	609	2896	1562	436
Barisal	23594	4671	3529	972	994	1430	1770	4669	369	3266	1475	450
Chittagong	21732	3834	1975	2687	2263	1183	1283	3911	212	2527	1533	324
Dhaka	27407	4804	4137	1341	1726	1782	2290	5064	1092	2791	1694	684
Khulna	24799	3250	2718	1800	1853	1664	2399	5832	624	2879	1464	315
Rajshahi	27858	5033	3880	3662	1888	574	2825	5735	292	2776	1048	145
Rangpur	28844	7002	3286	4699	791	1052	1926	2899	323	5913	700	254
Sylhet	20668	2033	2638	880	1254	1274	1624	4369	686	3750	1693	467

Table-17.b: Per acre production quantity (Kg) & their value (Tk.) for hybrid variety by farming time & division

Division	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8	9	10
All									
Average	62426	75	139	169	1749	2150	20357	3809	40182
Barisal	61920	-	-	227	2195	2144	20913	4150	38813
Chittagong	73190	44	91	482	5578	3152	35759	3708	31762
Dhaka	60988	3	16	87	1215	2843	24627	3638	35131
Khulna	62615	4	5	90	514	1616	14516	3768	47580
Rajshahi	64531	48	82	28	474	1814	21440	4146	42535
Rangpur	49335	375	672	19	149	1504	7553	3679	40961
Sylhet	56902	100	198	228	1488	1791	13346	3988	41870
Summer									
Average	64522	108	197	125	1657	2216	22176	3778	40492
Barisal	65325	-	-	171	1729	1752	17606	4584	45990
Chittagong	81979	55	115	447	7184	3565	46973	3808	27708
Dhaka	61947	-	-	66	1054	2840	27138	3252	33755
Khulna	67424	6	7	62	561	2223	20635	3467	46221
Rajshahi	65632	38	65	29	494	1823	21775	4243	43297
Rangpur	49238	378	678	19	150	1505	7551	3679	40860
Sylhet	55363	484	952	630	3267	2478	19091	3892	32052
Winter									
Average	58560	14	31	249	1917	2027	17000	3865	39611
Barisal	54233	-	-	355	3246	3028	28379	3169	22608
Chittagong	64451	33	66	517	3981	2742	24610	3608	35794
Dhaka	60446	5	25	99	1305	2845	23208	3855	35908
Khulna	52926	-	-	145	419	393	2188	4374	50319
Rajshahi	38722	281	469	-	-	1617	13586	1867	24668
Rangpur	61025	-	-	-	-	1410	7822	3724	53203
Sylhet	57305	-	-	123	1021	1612	11840	4013	44443

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Table-18.a: Per acre production cost (Tk.) by farming time and size of land

Size of land (Acre)	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	24662	3273	2880	1337	2094	2371	2078	5308	501	3058	1431	332
0.00–0.04	27091	3120	3058	1469	2791	3020	1819	5580	471	3988	1474	302
0.05-0.49	26665	3700	3070	1542	1937	2488	2115	5640	577	3562	1596	439
0.50-0.99	24608	3046	2844	922	2644	2579	2338	5577	507	2581	1303	266
1.00-1.49	22166	2693	2453	964	2234	2227	2182	5078	404	2686	1068	177
1.50-2.49	18047	2353	2703	911	2143	1709	1361	3970	232	1430	1161	75
2.50-4.99	16728	1963	1914	1403	1421	1306	1277	4264	184	1777	1079	139
5.00-7.49	20549	2602	2056	1110	1641	1983	2397	4433	610	2159	1252	306
7.50+	19858	2718	2614	2290	1308	1644	2479	2537	341	2431	1402	95
Summer												
Average	25488	3058	2820	1307	2287	2799	2342	5786	501	2893	1438	256
0.00–0.04	26936	3303	2981	1490	2678	3646	1839	5797	405	3376	1110	314
0.05-0.49	27867	3469	3090	1482	2182	3180	2353	6289	608	3172	1690	351
0.50-0.99	24712	2632	2720	921	2933	2526	2741	5674	431	2839	1106	188
1.00-1.49	22948	2795	2332	954	2439	2464	2573	5257	447	2870	732	85
1.50-2.49	17666	1792	2169	772	2046	1674	1715	4141	274	1461	1538	83
2.50-4.99	18327	2020	1710	1522	1235	1211	1371	6263	135	1681	1155	24
5.00-7.49	18138	2383	2760	1400	-	2833	1673	1908	500	2847	1500	333
7.50+	19962	2790	2571	2522	1354	1832	2079	2902	100	2273	1488	49
Winter												
Average	23380	3606	2973	1385	1793	1706	1668	4564	500	3315	1421	450
0.00–0.04	27289	2885	3157	1442	2936	2219	1793	5302	556	4771	1941	287
0.05-0.49	24774	4062	3039	1635	1550	1398	1739	4619	529	4176	1448	579
0.50-0.99	24422	3783	3064	923	2129	2674	1621	5404	642	2122	1654	406
1.00-1.49	20856	2523	2655	979	1890	1830	1528	4777	334	2379	1632	330
1.50-2.49	18606	3174	3485	1114	2285	1760	842	3718	172	1384	609	62
2.50-4.99	14816	1895	2158	1262	1643	1419	1165	1876	242	1893	988	275
5.00-7.49	21048	2647	1911	1050	1981	1807	2547	4955	633	2017	1200	300
7.50+	19617	2550	2713	1750	1200	1206	3410	1688	900	2800	1200	200

Table-18.b: Per acre production quantity (Kg) & their value (Tk.) by farming time and size of land

Size of land (Acre)	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8	9	10
All Areas									
All	57968	52	133	231	2100	1916	17808	3323	37928
0.00–0.04	63326	23	113	866	3278	2560	21193	3121	38742
0.05-0.49	61173	50	159	332	3175	2151	22378	3177	35461
0.50-0.99	54487	129	215	84	1030	1896	16491	3705	36752
1.00-1.49	54693	11	20	25	251	1767	9240	3395	45182
1.50-2.49	52626	8	39	15	481	1484	11405	2959	40700
2.50-4.99	43204	-	-	3	41	225	2543	3615	40620
5.00-7.49	59441	-	-	-	-	-	-	4793	59441
7.50+	50207	-	-	-	-	1150	4056	3834	46152
Summer									
Average	58408	62	120	128	1562	2064	19494	3319	37232
0.00–0.04	61487	30	112	598	2741	2863	22787	3039	35846
0.05-0.49	63038	45	102	158	2117	2318	25506	3152	35313
0.50-0.99	50939	189	293	101	1440	2012	17423	3722	31784
1.00-1.49	54766	17	32	23	197	1866	7626	3436	46911
1.50-2.49	53165	13	65	17	353	1274	8058	3183	44688
2.50-4.99	47674	-	-	-	-	9	93	4156	47581
5.00-7.49	54000	-	-	-	-	-	-	3150	54000
7.50+	49159	-	-	-	-	1644	5797	3524	43362
Winter									
Average	57285	36	153	389	2935	1687	15189	3328	39008
0.00–0.04	65681	13	113	1210	3966	2172	1953	3226	42450
0.05-0.49	58237	59	250	604	4839	1888	17453	3217	35694
0.50-0.99	60805	21	76	54	301	1690	14831	3676	45596
1.00-1.49	54571	-	-	28	342	1600	11942	3327	42287
1.50-2.49	51837	-	-	12	668	1791	16302	2631	34867
2.50-4.99	37862	-	-	6	89	482	5469	2968	32304
5.00-7.49	60567	-	-	-	-	-	-	5134	60567
7.50+	52650	-	-	-	-	-	-	4557	52650

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Table-19.a: Per acre production cost (Tk.) for own land by farming time and size of land

Size of land (acre)	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & Seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	24275	3334	2867	1398	1849	2272	1877	5246	505	3101	1484	344
0.00–0.04	26724	3126	3067	1507	2703	2893	1822	5490	460	3890	1462	302
0.05-0.49	26419	3771	3148	1623	1548	2417	1808	5691	598	3684	1667	465
0.50-0.99	23760	3114	2720	968	2513	2394	2257	5181	508	2502	1314	290
1.00-1.49	21972	2728	2260	1041	2204	2078	2118	5141	428	2732	1074	169
1.50-2.49	18510	2555	2762	864	2043	1858	1176	4146	206	1485	1332	83
2.50-4.99	16394	1955	1853	1405	1377	1234	1220	4220	144	1781	1075	130
5.00-7.49	20655	3258	2320	1101	1589	2037	2491	3318	614	2318	1335	275
7.50+	19801	2872	2210	2484	1448	1275	2815	2331	344	2315	1597	110
Summer												
Average	24892	3121	2759	1383	1846	2664	2144	5809	500	2903	1499	265
0.00–0.04	26827	3293	3031	1527	2651	3580	1865	5691	410	3341	1117	319
0.05-0.49	27278	3526	3156	1566	1497	3084	2076	6397	634	3219	1755	369
0.50-0.99	23939	2702	2435	1053	2736	2288	2702	5527	381	2770	1151	194
1.00-1.49	23028	2912	2232	993	2476	2292	2506	5299	485	3005	736	93
1.50-2.49	17453	1957	2105	686	1691	1781	1392	4284	230	1479	1755	92
2.50-4.99	17801	2008	1581	1533	1140	1069	1269	6309	57	1681	1152	-
5.00-7.49	18138	2383	2760	1400	-	2833	1673	1908	500	2847	1500	333
7.50+	19900	3046	1938	2881	1582	1312	2493	2679	43	2052	1811	62
Winter												
Average	23368	3645	3025	1419	1854	1697	1484	4419	512	3391	1461	460
0.00–0.04	26587	2906	3115	1481	2773	1988	1765	5224	526	4614	1917	279
0.05-0.49	25118	4143	3138	1708	1626	1406	1403	4621	542	4388	1534	609
0.50-0.99	23506	3700	3126	848	2194	2545	1624	4687	688	2122	1546	425
1.00-1.49	20155	2412	2308	1123	1735	1710	1450	4869	329	2262	1657	300
1.50-2.49	20086	3446	3743	1128	2569	1973	854	3940	169	1494	702	69
2.50-4.99	14816	1895	2158	1262	1643	1419	1165	1876	242	1893	988	275
5.00-7.49	21398	3516	2190	1012	2058	1801	2733	3735	648	2161	1286	257
7.50+	19617	2550	2713	1750	1200	1206	3410	1688	900	2800	1200	200

Table-19.b: Per acre production quantity (Kg) & their value (Tk.) for own land by farming time and size of land

Size of land (Acre)	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)	Qty. (Kg)	Value (Tk.)
1	2	3	4	5	6	7	8	9	10
All									
All	58422	37	82	236	2017	1911	17545	3367	38777
0.00–0.04	63294	23	115	860	3301	2547	20934	3136	38945
0.05-0.49	62476	37	93	343	3139	2156	22339	3250	36905
0.50-0.99	52035	86	135	83	821	1903	15812	3676	35267
1.00-1.49	54309	12	23	27	252	1820	9748	3292	44286
1.50-2.49	53735	9	46	16	522	1655	13160	2917	40008
2.50-4.99	42750	-	-	3	42	233	2630	3631	40078
5.00-7.49	70927	-	-	-	-	-	-	5387	70927
7.50+	54102	-	-	-	-	54	202	4478	53900
Summer									
Average	57926	52	107	126	1365	2031	18614	3359	37841
0.00–0.04	61547	32	119	576	2673	2843	22408	3085	36348
0.05-0.49	64430	45	102	154	1884	2308	25053	3259	37390
0.50-0.99	44544	147	230	100	1185	2048	16092	3640	27038
1.00-1.49	53166	19	36	26	220	1898	7674	3317	45236
1.50-2.49	51133	15	76	18	339	1337	8982	2943	41736
2.50-4.99	47105	-	-	-	-	10	99	4221	47006
5.00-7.49	54000	-	-	-	-	-	-	3150	54000
7.50+	54886	-	-	-	-	77	310	4435	54576
Winter									
Average	59150	14	46	398	2975	1734	15977	3378	40152
0.00–0.04	65597	12	110	1235	4128	2156	18991	3202	42367
0.05-0.49	59515	23	79	630	5041	1925	18227	3235	36169
0.50-0.99	62705	-	-	59	302	1695	15413	3727	46990
1.00-1.49	56276	-	-	30	306	1686	13317	3249	42653
1.50-2.49	57615	-	-	14	795	2130	19390	2880	37430
2.50-4.99	37862	-	-	6	89	482	5469	2968	32304
5.00-7.49	75931	-	-	-	-	-	-	6048	75931
7.50+	52650	-	-	-	-	-	-	4557	52650

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Table-20.a: Per acre production cost (Tk.) for all other tenancy by farming time and size of land

Size of land (Acre)	Per acre production Cost (Tk)											
	Total	Land Preparation	Seed & seed sowing	Seedling related	Wedding	Irrigation	Pesticide/ insecticide	Fertilizer	Hormone	Harvesting	Transport	Others
1	2	3	4	5	6	7	8	9	10	11	12	13
All												
All	26534	3301	3316	1179	2824	2808	2717	5427	458	2977	1251	275
0.00–0.04	27948	3024	2910	989	2614	4210	1873	5882	558	4389	1280	219
0.05-0.49	27345	3490	2845	1297	3172	2716	3099	5480	516	3087	1298	346
0.50-0.99	26505	3376	3482	634	2898	3169	2515	5887	431	2899	1041	173
1.00-1.49	26431	3034	4002	651	2302	3029	2550	4987	361	4176	1002	336
1.50-2.49	27004	2806	5274	1017	2997	2937	1996	6117	364	2061	1321	115
2.50-4.99	25502	2984	3327	2418	2267	2370	2173	4853	701	2361	1460	586
5.00-7.49	20549	2602	2056	1110	1641	1983	2397	4433	610	2159	1252	306
7.50+	24720	3686	3233	3348	1326	2324	2387	3626	87	2687	1949	65
Summer												
Average	27971	2950	3145	1145	3625	3203	3025	5635	453	3156	1413	221
0.00–0.04	27091	3449	2093	831	3074	4753	1464	6033	266	3910	982	234
0.05-0.49	29928	3261	2973	1184	4370	3537	3263	5993	517	3060	1474	297
0.50-0.99	26640	2628	3332	602	3430	2954	2923	5855	552	3179	1022	162
1.00-1.49	26248	2357	3088	393	2311	3417	3152	5084	118	5476	801	52
1.50-2.49	26581	1923	3701	910	3745	2534	2798	5891	345	2416	2136	183
2.50-4.99	26450	2200	3700	1350	2700	3400	2936	5544	1340	1680	1200	400
5.00-7.49	18138	2383	2760	1400	-	2833	1673	1908	500	2847	1500	333
7.50+	24720	3686	3233	3348	1326	2324	2387	3626	87	2687	1949	65
Winter												
Average	24491	3801	3559	1228	1686	2246	2278	5132	465	2722	1021	352
0.00–0.04	28665	2669	3593	1121	2229	3756	2215	5756	802	4789	1528	206
0.05-0.49	23078	3868	2632	1485	1192	1360	2830	4632	516	3130	1007	427
0.50-0.99	26208	5034	3815	704	1719	3646	1610	5959	163	2277	1082	199
1.00-1.49	26557	3502	4633	830	2296	2761	2135	4919	530	3278	1141	532
1.50-2.49	27429	3696	6859	1124	2244	3343	1186	6345	384	1703	498	48
2.50-4.99	25275	3172	3238	2674	2164	2124	1990	4688	548	2524	1523	631
5.00-7.49	21048	2647	1911	1050	1981	1807	2547	4955	633	2017	1200	300
7.50+	-	-	-	-	-	-	-	-	-	-	-	-

Table-20.b: Per acre production quantity (Kg) & their value (Tk.) for all other tenancy by farming time and size of land

Size of land (Acre)	Total Value (Tk.)	Per acre production quantity (Kg.) and their value (Tk.)							
		Seedling		Flower/Shak		Green		Ripen	
		Qty. (No.)	Value (Tk)	Qty (Kg)	Value (Tk)	Qty (Kg)	Value (Tk)	Qty (Kg)	Value (Tk)
1	2	3	4	5	6	7	8	9	10
All									
All	57834	103	285	174	1976	1788	15735	3397	39838
0.00–0.04	64051	14	72	969	3046	2814	24330	2996	36604
0.05-0.49	55788	90	374	316	3403	2130	22314	2921	29696
0.50-0.99	59948	288	483	78	1524	1854	16688	3872	41254
1.00-1.49	55689	-	-	7	258	1824	7575	3735	47857
1.50-2.49	62847	21	106	3	102	1439	5448	3329	57191
2.50-4.99	53327	-	-	-	-	-	-	4420	53327
5.00-7.49	59441	-	-	-	-	-	-	4793	59441
7.50+	61784	-	-	-	-	1364	7367	3646	54417
Summer									
Average	60856	116	205	120	2047	2063	20970	3258	37633
0.00–0.04	60313	-	-	952	3798	3253	28734	2310	27781
0.05-0.49	58868	43	99	174	2988	2404	27803	2747	27978
0.50-0.99	65337	384	580	110	2131	1967	21252	3905	41374
1.00-1.49	56519	-	-	3	34	2231	10097	3663	46388
1.50-2.49	64197	42	211	5	203	1302	6368	3874	57415
2.50-4.99	56454	-	-	-	-	-	-	3150	56454
5.00-7.49	54000	-	-	-	-	-	-	3150	54000
7.50+	61784	-	-	-	-	1364	7367	3646	54417
Winter									
Average	53540	84	399	252	1875	1398	8294	3595	42972
0.00–0.04	67175	26	131	982	2418	2447	20650	3570	43976
0.05-0.49	50699	167	828	552	4090	1676	13245	3208	32535
0.50-0.99	48008	74	267	8	181	1604	6572	3799	40988
1.00-1.49	55116	-	-	9	412	1542	5832	3785	48871
1.50-2.49	61487	-	-	-	-	1577	4521	2780	56966
2.50-4.99	52578	-	-	-	-	-	-	4725	52578
5.00-7.49	60567	-	-	-	-	-	-	5134	60567
7.50+	-	-	-	-	-	-	-	-	-

Table-21: Per acre leasing value (Tk.) by division

Division	Leasing value (Tk)
All	5854
Barisal	4825
Chittagong	5554
Dhaka	7289
Khulna	5985
Rajshahi	5810
Rangpur	6154
Sylhet	5399

Table-22: Distribution of number household, amount of loan, repayment amount (Tk) and money used for pumpkin by seasonality & source of loan

Items	Source of loan					
	Total	Bank	NGO	Mahajon	Relative/ Neighbor	Others
1	2	3	4	5	6	7
All						
Number of H/H loaner	23711	3984	6632	5935	6101	1058
Amount (Tk.) of loan	301081683	85567985	83921290	38749830	44600578	48242000
Repayment amount (Tk.)	202504231	53069173	54619910	27056612	39536847	28221690
Money (Tk.) used for Pumpkin farming	173010876	39869645	32856028	29030290	22779353	48475560
Summer						
Number of HH loaner	13048	1153	5437	3926	2007	525
Amount (Tk.) of loan	109393713	9120495	61834970	24814960	9771288	3852000
Repayment amount (Tk.)	79114821	7113895	43944276	16764610	7662409	3629630
Money (Tk.) used for Pumpkin farming	79700196	23855290	28045543	17151860	7005843	3641660
Winter						
Number of HH loaner	10663	2831	1195	2009	4094	533
Amount (Tk.) of loan	191687970	76447490	22086320	13934870	34829290	44390000
Repayment amount (Tk.)	123389411	45955278	10675634	10292002	31874438	24592060
Money (Tk.) used for Pumpkin farming	93310680	16014355	4810485	11878430	15773510	44833900

Table-23: Distribution type of problem wise households by their level of problem

Sl. No.	Type of problem	Level of problem		
		Principal	Medium	Minimum
Total		620236	620236	620236
1	Shortest of fertilizer	18215	8592	8536
2	High price of fertilizer	75448	55517	30441
3	Diseases affected	199118	89020	49684
4	Heavy Rainfall	24784	29851	19610
5	Shortage of Rainfall/Drought	32626	43328	28137
6	Flood	2940	4500	6902
7	Storm/Typhoon	3363	9648	9351
8	Lack of marketing	75474	71036	45583
9	Low value of produced pumpkin	87786	81124	97785
10	Low value of produced seedling	3207	5021	10438
11	Lack of capital	49728	87547	56098
12	Lack of adequate government support	29114	90621	138787
13	Lack of technical knowledge	13312	36696	67887
14	Shortest of technical cooperation	5121	7735	51001

Annex-B: Concepts and Definitions

Mauza:

Mauza is the demarcated lowest administrative territorial unit having separate jurisdiction list (JL) number in the revenue records. Every mauza has its well demarcated Cadastral Survey (CS) map. Mauza should be distinguished from local village since a mauza may consist of one or more villages or part of a village.

Primary Sampling Unit (PSU):

PSU, here in this Pumpkin survey refers to one or more than one mauzas or any part of a mauza. For effective implementation of this survey, 210 primary sampling units have been selected from the whole country.

Stratum: The country divided into seven divisions. Each division treated as a Stratum.

Ultimate Sampling Units (USUs):

All the households having at least 1(one) decimal area of land under Pumpkin cultivation were listed from the selected PSUs and then 30 households have been drawn following the systematic random sampling, where a mouza was treated as the primary sampling unit (PSU) and within the selected mouzas, Pumpkin crop producing households were the ultimate sampling unit.

Household (HH):

A household means a group of persons normally living together and eating in one mess (i.e. with common arrangement of cooking) with their dependents, relatives, servants etc. A household may be a one person household or a multi-person household. In other words, when a group of persons living together generally maintain a family or family like relations and take meals from the same kitchen is termed as a household. Popularly, it is described as "*Khana*". In some cases there may be more than one household in a single house or in one dwelling arrangement. Similarly, a household may have more than one house or structure or shed.

The household must be distinguished from a family which consists of blood related members who may live in different places but members of the household must share the same kitchen and live together.

Owned land:

Owned land means the area of the land owned by the holder including members of this household having a title of land with the right to determine the nature and extent of

its use and to transfer the same. Moreover, there might be some land over which the holder or any member of the households has owner-like possession.

Share crop:

Land under share cropping is treated as the land which is cultivated under the condition of sharing the crops between land owner and the cultivator. The ratio of share cropping might vary from place to place. It might be one third (1/3) or half (1/2) or two-thirds (2/3) between owner and cultivator.

Mortgage:

The land which is taken in exchange of money paid by the mortgagee to the land owner for a fixed period of time under the condition that land would be released upon refunding the money to the mortgagee by the owner is considered as the land under mortgage.

Lease:

The land which is taken by the cultivator from the owner in exchange of a certain amount of money for one year or for any period of time for the purpose of cultivating crop is treated as land under lease. Under this criterion, land will automatically be released from the occupancy of the cultivator after the certain period of time.

Others:

The land which does not satisfy any of the four criteria mentioned earlier is treated as the others category.

Single cropped area:

Single cropped area means wherein one crop has been grown in survey year.

Mixed cropped area:

Mixed cropped area is defined an area where two or more crops are grown simultaneously in a survey year.

Reference period:

The year 2013, prior to the survey year 2014, was considered as reference period.

Pumpkin farm holding:

The households having at least one decimal area of land under Pumpkin cultivation was considered as the Pumpkin farm holding.

Annex-C: Questionnaire (Bangla)

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
বাংলাদেশ পরিসংখ্যান ব্যুরো
এগ্রিকালচার উইং
প্রোডাক্টিভিটি এ্যাসেসমেন্ট সার্ভে অব
ডিফারেন্ট এগ্রিকালচারাল ক্রপস্ কর্মসূচি
ই-২৭/এ আগারগাঁও, ঢাকা-১২০৭।

গোপনীয়

মিষ্টি কুমড়া ফসলের উৎপাদনশীলতা জরিপ-২০১৪

প্রথম অংশ

১। খানার পরিচিতি

খানার ক্রমিক নং | | | | স্ট্যাট্রাম নম্বর | | পিএসইউ নম্বর | | | নমুনা খানা নম্বর | | |

খানা প্রধানের নামঃ				পিতা/স্বামীর নামঃ				
বিভাগের নাম:	কোড			চাষী/উত্তর দাতার মোবাইল নম্বরঃ				
জেলার নাম:	কোড			উপজেলার নাম:	কোড			
ইউনিয়নের নাম:	কোড			মৌজা/গ্রামের নাম:	কোড			

দ্বিতীয় অংশ

২। মিষ্টি কুমড়া ফসলের অধীন জমির পরিমাণ, মালিকানা, চাষের প্রকার, চাষের ধরন এবং খরচ (টাকায়)

চাষের সময়	জমির পরিমাণ							মিস্টি কুমড়া জাতের প্রকার	চাষের প্রকার কোড	চাষের ধরন (নিজস্ব হলে বাজার দরে লিখতে হবে)					মোট খরচ (টাকা) (১২+১৪+১৫)=১৬
	একর	শতক	নিজস্ব		অন্য থেকে নেয়া					লাঙ্গল/কোদাল		যান্ত্রিক		অন্যান্য খরচ (টাকা)	
			একর	শতক	কোড	একর	শতক			সংখ্যা	খরচ (টাকা)	সংখ্যা	খরচ (টাকা)		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬
গ্রীষ্মকালীন															
শীতকালীন															

* অন্য থেকে নেয়া কোডঃ বর্গা-১, বন্ধক-২, লীজ-৩ এবং অন্যান্য-৪ * জাতের প্রকার কোডঃ দেশী-১, হাইব্রিড-২ এবং অন্যান্য-৩ * চাষের প্রকার কোডঃ একক-১, মিশ্র-২

৩। মিষ্টি কুমড়া ফসলের বীজ বপন, চারা উত্তোলন, ক্রয় ও রোপণ খরচ (টাকায়)

চাষের সময়	বীজের পরিমাণ, মূল্য, বীজ বপন/ রোপণ ও অন্যান্য খরচ			চারা উত্তোলন, ক্রয় ও রোপন খরচ												মোট খরচ (টাকা) (৩+৪+৯+১০+১৫ +১৬)=১৭
	পরিমাণ (কেজি)	মূল্য (টাকা)	বপন/রোপণ ও অন্যান্য খরচ (টাকা)	শ্রমিকের সংখ্যা (পারিবারিক)		শ্রমিকের সংখ্যা (ভাড়া)		উত্তোলন খরচ (টাকা)	ক্রয় খরচ (টাকা)	পারিবারিক (সংখ্যা)		ভাড়া (সংখ্যা)		রোপন খরচ (টাকা)	অন্যান্য খরচ (টাকা)	
				পুরুষ	মহিলা	পুরুষ	মহিলা			পুরুষ	মহিলা	পুরুষ	মহিলা			
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬	১৭
গ্রীষ্মকালীন																
শীতকালীন																

৪। মিষ্টি কুমড়া ফসলের নিড়ানী ও সেচ খরচ(টাকায়)

চাষের সময়	নিড়ানি খরচ					সেচ এবং সেচ সম্পর্কীয় খরচ			মোট খরচ (টাকা) (৬+৯)=১০
	শ্রমিকের সংখ্যা				খরচ (টাকা)	সেচ খরচ (টাকা)	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (৭+৮)=৯	
	পারিবারিক		ভাড়া						
	পুরুষ	মহিলা	পুরুষ	মহিলা					
১	২	৩	৪	৫	৬	৭	৮	৯	১০
গ্রীষ্মকালীন									
শীতকালীন									

৫। মিষ্টি কুমড়া ফসলের কীটনাশক, বালাইনাশক (পোকা মাকড় ও রোগ দমন) পরিমাণ ও খরচ(টাকায়)

চাষের সময়	কীটনাশক নামের কোড, পরিমাণ ও খরচ							বালাইনাশক নামের কোড, পরিমাণ ও খরচ							মোট খরচ (টাকা) (৪+৭+৮+১১+১৪ +১৫)=১৬
	১ম কীটনাশক			২য় কীটনাশক			অন্যান্য খরচ (টাকা)	১ম বালাইনাশক			২য় বালাইনাশক			অন্যান্য খরচ (টাকা)	
	কোড	পরিমাণ	খরচ (টাকা)	কোড	পরিমাণ	খরচ (টাকা)		কোড	পরিমাণ	খরচ (টাকা)	কোড	পরিমাণ	খরচ (টাকা)		
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪	১৫	১৬
গ্রীষ্মকালীন															
শীতকালীন															

কীটনাশকের নাম ও কোডঃ ক্যারাট-১, ভলিউম-২, প্রোক্লেম-৩, একতারা-৪, এডমায়ার-৫, সবিক্রন-৬, সেভিন-৮৫-৭ এবং অন্যান্য-৮।

বালাইনাশকের নাম ও কোডঃ টিল্ট-১, রিডোমিল এম জেড-২, স্কোর-৩, এ্যামিষ্টার টপ-৪, ভারটিমেক-৫, ডাইথেন-এম-৪৫-৬, নিউবেন-৭, বর্দ্দো-মিকচার-৮, সিকিউর-৯, ইনডোফিল-এম-৪৫-১০ এবং অন্যান্য-১১।

৬। সার ব্যবহারের পরিমাণ (কেজিতে) ও মূল্য (টাকায়)

চাষের সময়	ইউরিয়া		টিএসপি		ডিএপি		এমওপি		খৈল		গোবর সার (টাকা)	অন্যান্য সার (টাকা)	মোট মূল্য (টাকা) (৩+৫+৭+৯+১১+১২ +১৩)=১৪
	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)	পরিমাণ (কেজি)	মূল্য (টাকা)			
১	২	৩	৪	৫	৬	৭	৮	৯	১০	১১	১২	১৩	১৪
গ্রীষ্মকালীন													
শীতকালীন													

৭। মিষ্টি কুমড়া ফসলের হরমোন পরিমাণ (কেজিতে) ও মূল্য (টাকায়)

চাষের সময়	হরমোন কোড, পরিমাণ ও খরচ				
	কোড	পরিমাণ (মিলি:/গ্রা:)	খরচ (টাকা)	অন্যান্য খরচ (টাকা)	মোট খরচ (টাকা) (৪+৫)=৬
১	২	৩	৪	৫	৬
গ্রীষ্মকালীন					
শীতকালীন					

৮। মিষ্টি কুমড়া ফসলের ঋণ সংক্রান্ত তথ্য(টাকায়)

চাষের সময়	ঋণ সংক্রান্ত তথ্য					
	কোন ঋণ নিয়েছেন কি?	হ্যাঁ হলে উৎস	টাকার পরিমাণ	উক্ত ঋণের জন্য কত টাকা পরিশোধ করেছেন	উক্ত ঋণের জন্য কত টাকা পরিশোধ করতে হবে	ঋণকৃত টাকার মধ্যে কত টাকা মিষ্টি কুমড়া চাষের জন্য ব্যয় করেছেন
১	২	৩	৪	৫	৬	৭
গ্রীষ্মকালীন	হ্যাঁ-১, না-২					
শীতকালীন	হ্যাঁ-১, না-২					

মিষ্টি কুমড়া ফসল হরমোনের নাম ও কোডঃ ওকোজিম-১, ইথ্রিল-২ ও কার্বাইড-৩ **ঋনের উৎসের কোডঃ** ব্যাংক-১, এনজিও-২, মহাজন-৩, ফঁড়িয়া/পাইকার-৪, আত্মীয়/প্রতিবেশী-৫ এবং অন্যান্য-৬

৯। মিষ্টি কুমড়া ফসলের উত্তোলন ও পরিবহন খরচ(টাকায়)

চাষের সময়	মিষ্টি কুমড়া ফসলের উত্তোলন					পরিবহন খরচ (টাকায়)	অন্যান্য খরচ (টাকায়)	মোট খরচ (টাকা) (৬+৭+৮)=৯
	শ্রমিকের সংখ্যা				খরচ (টাকায়)			
	পারিবারিক		ভাড়া					
	পুরুষ	মহিলা	পুরুষ	মহিলা				
১	২	৩	৪	৫	৬	৭	৮	৯
গ্রীষ্মকালীন								
শীতকালীন								

১০। মিষ্টি কুমড়া ফসলের চারা বিক্রয়, মিষ্টি কুমড়ার শাক/ফুলের বিক্রয় মূল্য ও উৎপাদিত মিষ্টি কুমড়ার বিক্রয় মূল্য (টাকায়)

চাষের সময়	মিষ্টি কুমড়ার চারা বিক্রয়		উৎপাদিত মিষ্টি কুমড়ার শাক/ফুলের বিক্রয় মূল্য			উৎপাদিত মিষ্টি কুমড়া						মোট মূল্য (টাকায়) (৩+৬+৯+১২)=১৩
	পরিমাণ (সংখ্যা)	মূল্য (টাকা)	পরিমাণ		মূল্য (টাকা)	পরিমাণ (কাঁচা)		মূল্য (টাকা)	পরিমাণ (পাঁকা)		মূল্য (টাকায়)	
			(আটি)	কেজি		সংখ্যা	কেজি		সংখ্যা	কেজি		
১	**২**	**৩**	**৪**	**৫**	**৬**	**৭**	**৮**	**৯**	**১০**	**১১**	**১২**	**১৩**
গ্রীষ্মকালীন												
শীতকালীন												

১১। মিষ্টি কুমড়া ফসল চাষের জন্য এক একর জমি ‘এক বছরের জন্য’ লীজ নিতে জমির মালিককে কত টাকা দিতে হয়। টাকাঃ

১২। মিষ্টি কুমড়া ফসল চাষে প্রধান তিনটি সমস্যা আপনি কি মাত্রায় অনুভব করেন তা নির্দিষ্ট স্থানে কোড দিন।

অতি সমস্যা ☐ **মধ্যম সমস্যা** ☐ **স্বল্প সমস্যা** ☐

- **সমস্যার নাম ও কোড ঃ** সারের অভাব-১, সারের উচ্চ মূল্য-২, রোগের আক্রমন-৩, অতি বৃষ্টি-৪, অনাবৃষ্টি/খড়া-৫, বন্যা-৬, ঝড়/টাইফুন-৭, বাজারজাতকরণের অভাব-৮, উৎপাদিত মিষ্টি কুমড়া ফসল উৎপাদিত চারার নিম্ন মূল্য-১০, প্রয়োজনীয় মূলধনের অভাব-১১, সরকারী সহযোগিতার অভাব-১২, কারিগরি জ্ঞানের অভাব-১৩, কারিগরি সহযোগিতার অভাব-১৪।

তথ্য সংগ্রহকারীর নামঃ .....
পদবীঃ .....
তারিখঃ.....

সুপারভাইজারের নাম .....
পদবীঃ .....
তারিখঃ.....

Annex-D: Questionnaire (English)

Government of the People's Republic of Bangladesh
Bangladesh Bureau of Statistics
Agriculture Wing
Productivity Assessment Survey of Different Agicultural Crops Program
E-27/A, Agargoan, Dhaka-1207

Confidential

Pumpkin Productivity Survey-2014

First Part

1. Indentification of Household

Household SI No. | | | | **Statrum No.** | | **PSU NO.** | | | **Selected Sample Household No.** | |

Name of Head of Household :				Father/Husband Name:		
Division name :	Code			Farmer/Respondent Mobile No:		
District Name :	Code			Upazila Name :	Code	
Union Name :	Code			Mouza/VillageName :	Code	

Second Part

2. Area under Pumpkin Crop, Land ownership, Cultivation type, Variety, Land Preparation and cost (Tk.)

Farming period	Land area							Variety of Pumpkin (Code)	Caltivation type (Code)	Land preparation (Market price is shown when cultivated is own)				Others Cost (Tk.)	Total Cost (Tk.) (12+14+15 =16)
	Acre	Decimal	Owned		Land from taken					Plough/Hoe		Mechanized			
			Acre	Decimal	Code	Acre	Decimal			No.	Cost (Tk.)	No.	Cost (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Summer															
Winter															

*** Land ownership code-**Owned-1, Share crop-2, Mortgage-3, Lease-4 and others-5 *** Variety of pumpkin code:** Local-1, Hybrid-2 and Others-3
*** Caltivation type code**: Single-1, Mixed-2

3. Seedling, plucking of seedlings, purchase of seedling and planting Cost (Tk.)

Farming period	Quantity of seed, purchase, seedling/plantation & other cost			Plucking of seedling, purchase & plantation cost												Total cost(Tk.) (3+4+9+10+15+16)=17
	Qty. (Kg)	Cost (Tk.)	plantation of seed/seedling & other cost	No. of Labour (Family)		No. of Labour (Hired)		Plucking cost (Tk.)	Purchase cost (Tk.)	Family (Number)		Hired (Number)		Plantation cost (Tk.)	Other cost (Tk.)	
				Male	Female	Male	Female			Male	Female	Male	Female			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Summer																
Winter																

4. Weeding & Irrigation cost (Tk.)

Farming period	Weeding cost					Irrigation & Irrigation related cost			Total cost (Tk.) (6+9)=10
	No. of Labour				Cost (Tk.)	Irrigation cost (Tk.)	Other Cost (Tk.)	Total Cost (Tk.) (7+8)=9	
	family		Hired						
	Male	Female	Male	Female					
1	2	3	4	5	6	7	8	9	10
Summer									
Winter									

5. Insecticide & Pesticide code, Quantity (gm/ml) & cost (Tk.)

Farming period	Insecticide code, Quantity & cost							Pesticide code, Quantity & cost							Total cost (Tk.) (4+7+8+11+14+15)=16
	1st term used Insecticide			2nd tern used Insecticide			Other Cost (Tk.)	1st term used Pesticide			2nd tern used Pesticide			Other Cost (Tk.)	
	Code	Quantity (gm/ml)	Cost (Tk.)	Code	Quantity (gm/ml)	Cost (Tk.)		Code	Quantity (gm/ml)	Cost (Tk.)	Code	Quantity (gm/ml)	Cost (Tk.)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Summer															
Winter															

Inseticide name & code: Karate-1, Voliam-2, Proclaim-3, Actara-4, Admire-5, Shobicron-6, Sevin-85-7 and Others-8.
Pesticide name & code: Tilt-1, Ridomil Gold MZ-2, Score-3, Amistar top-4, Vertimec-5, Dithan-M-45-6, Nuben-7, Boudeaux mixture-8, Secure-9, Indofil-M-45-10 & Others-11.

6. Use of fertilizer Quantity (Kg) & cost (Tk.)

Farming period	Urea		TSP		DAP		MOP		Cake		Cowdung cost (Tk.)	Other Fertilizer cost (Tk.)	Total Cost (Tk.) (3+5+7+9+11+12+13)=14
	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)	Quantity (Kg.)	Cost (Tk.)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Summer													
Winter													

7. Use of Hormone Quantity (gm/ml) & cost (Tk.)

Farming period	Hormone code, Qty. & cost (Tk.)				
	Code	Quantity (ml./gm.)	Cost (Tk.)	Other cost (Tk.)	Total cost (Tk.) (4+5)=6
1	**2**	**3**	**4**	**5**	**6**
Summer					
Winter					

Hormone name & code: Ocuzim-1, Ithril-2 & Carbied-3

8. Production of Cauliflower loan related information Tk.)

Farming period	Load related Information					
	Loan taken?	If yes, source	Amount of Taka	Amount of loan to be paid	Amount of loan to be realized	Loan(money) used for Pumpkin crop under cultivation
1	**2**	**3**	**4**	**5**	**6**	**7**
Summer	Yes-1, No.-2					
Winter	Yes-1, No.-2					

Loan source code: Bank-1, NGO-2, Mahajan-3, Foria/Paikar-4, Relative/Neghbour-5 and Others-6

9. Harvesting and transport cost (Tk.)

Farming period	Harvesting of pumpkin crop					Transport Cost (Tk.)	Other Cost (Tk.)	Total Cost (Tk.) (6+7+8)=9
	Number of Labour				Cost (Tk.)			
	Family		Hired					
	Male	Female	Male	Female				
1	2	3	4	5	6	7	8	9
Summer								
Winter								

10. Selling value of Seedling, Shak/Flower and production of Pumpkin Value

Farming period	Seedling sell value		Shak/Flower sell value			Production of Pumpkin crop & value						Total cost(Tk.) (3+6+9+12)=13
	Qty. (Number)	Cost (Tk.)	Quantity		Cost (Tk.)	Quantity(Kacha)		Cost (Tk.)	Quantity(Ripe)		Cost (Tk.)	
			(Ati)	(Kg)		Number	Kg		Number	Kg		
1	2	3	4	5	6	7	8	9	10	11	12	13
Summer												
Winter												

11. Per acre yearly leasing value for Pumpkin crops. **Taka:**

12. Mention three main problems for Pumpking cultivation.

Principal **Medium** **Minimum**

- **Problems name & code:** Shortest of fertilizer-1, High price of fertilizer-2, Diseases affected-3, Heavy Rainfall-4, Shortage of Rainfall/Drought-5, Flood-6, Storm/Typhoon-7, Lack of marketing-8, Production low value-9, Seedling low value-10, Lack of capital-11, Lack of adequate government support-12, Lack of technical knowledge-13 & Shortest of technical cooperation-14.

Data collector name: .....
Designation: .....
Date:.....

Supervising Officer name:.....
Designation: .....
Date:.....

Annex-E: Reference

1. Statistical Year Book of Bangladesh, 2012
   - Bangladesh Bureau of Statistics
2. Agriculture Sample Census, 2005
   - Bangladesh Bureau of Statistics
3. Agriculture Sample Survey, 2008
   - Bangladesh Bureau of Statistics
4. Preliminary Report on Agriculture Census, 2008
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7. Census of Agriculture, 1996
   - Bangladesh Bureau of Statistics
8. Yearbook of Agriculture Statistics of Bangladesh, 2012
   - Bangladesh Bureau of Statistics
9. Report on the cost of production of 10 Crops (Aus, Aman, Boro, Wheat, Jute, Potato, Onion, Maize, Oil-seeds & Pulses), 2008-09
   - Bangladesh Bureau of Statistics
10. Report on the cost of production of 04 Crops (Watermelon, Tomato, Papaya & Brinjal) 2012
    - Bangladesh Bureau of Statistics

Acronyms

BBS	Bangladesh Bureau of Statistics
CH	Chittagong Hill
GDP	Gross Domestic Product
GOB	Government of Bangladesh
HH	Household
Kg	Kilogram
M. Tons	Metric Tons
No.	Number
PASDAC	Productivity Assessment Survey of Different Agricultural Crops
PSU	Primary Sampling Unit
RSE	Relative Standard Error
SE	Standard Error
Tk	Taka
T/ha	Ton per hector
USUs	Ultimate Sampling Units
%	Percentage

List of personnel engaged in the preparation of the report

1. **Mr. BidhanBaral, Joint Director.**
2. **Mr. Mostafa Ashrafuzzaman, Deputy Director**
3. **Mosammat Sayeeda Begum, Programmer**
4. **Mr. Md. Rezaul Karim, Assistant Statistical Officer**
5. **Mr. Md. Mortuza Hossain, Assistant Statistical Officer**
6. **Mr. Md. Shah Alam Miah, Statistical Investigator**
7. **Mr. Md. Iqbal Hossain, Enumerator.**
8. **Mr. A. K. M. Akhter Hossain, Steno-Typist/Computer Operator.**

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