

COMMERCIALIZATION BULLETIN: TOMATO

Bulletin #05

INTRODUCTION

China is the largest producer worldwide with over 16 million tons annual production (much of it consumed domestically, they export only 0.6 %) followed by USA (over 5.2 million tons) and India (over 4.1 million tons) 9 million tons; Kenya is not ranked but looking at the production statistics it would be ranked 14th with over 590,000 tons. The biggest exporter of fresh tomatoes is Mexico with over 1.1 million tons followed by The Netherlands (over 0.97 million tons) and Spain (over 0.82 million tons); Morocco (over 410,000 tons) is the largest exporter in Africa. The export market takes both fresh and processed (especially tomato concentrates) with the biggest importer of fresh tomatoes being Mexico with over 420,000 tons followed by China (over 390,000 tons) and Turkey (over 125,000 tons).

For imports and export of processed products: for tomato paste the biggest exporter is Italy with 644,000 tons followed by China (805,000 tons) and USA (240,000 Tons) with the biggest importer being USA with 618,000 tons followed by UK (500,000 tons) and France (440,000 tons). For tomato juice concentrate the biggest importer is Russia with over 3,900 tons followed by Estonia (1,400 tons) and Thailand (99 Tons) while big exporters include Russia with over 2,600 tons followed by Thailand (449 tons) and Estonia (326 tons).



Tomatoes in Kenya are a rain-fed smallholder crop and hence have the potential for mass economic empowerment especially the youth and bigger potential for East Africa export capacity of fresh and processed products. Domestic sales are characterized by periods of glut which make the prices to go down but consistent production is rewarded as there are annual periods of the crop being destroyed by blight and lack of rainfall which results in extremely profitable selling. USAID-KHCP and agricultural inputs suppliers Seminis Seeds and Osho Chemical Industries, promoted to growers the 240 square metres greenhouse kit with relative success, although there have been disappointments due to high expectations on the yield potential of the tomatoes; despite this growers have been adopting the use of greenhouse to grow tomatoes and now it is estimated 5 % of production is through greenhouses. Tomato fruits are used in salads or cooked as a vegetable; some is processed into tomato paste, sauce and puree.

As the tomato is on a transition from open field-rain fed to greenhouse-irrigated production, the thrust for commercial activity would be to focus on exports especially to the East Africa region; value adding; continual expansion of greenhouse production through promotions to local farmers and encourage introduction of new technologies such as use of hydroponics. This bulletin analyses markets, production, investment required and a case study of a successful farmer.

MARKETS

It is one of the most important vegetables grown in Kenya as it forms a major part of our daily meals. Minimal amounts of tomatoes are exported, possibly as fresh cherry tomatoes and processed products. Most tomatoes are sold fresh locally in the local domestic markets and distributed to retail outlets – like kiosks, supermarkets, green groceries and others in bigger towns of Nairobi, Mombasa, Nakuru, Kisumu, Eldoret and others. Tomato production in Kenya is barely sufficient to satisfy the local market demand especially for processing or export. Tomatoes are also processed into canned peeled tomatoes, tomato paste, tomato sauces, dehydrated tomato flakes, tomato powder, Ketchup. The major tomato markets for fresh produce are Nairobi (Wakulima wholesale market, Gikomba, Mathare and Kawangware) and Mombasa (Kongowea). Tomatoes are in high demand throughout the country and year for fresh consumption and processing.

Processing companies are many like premier food industries, Trufoods, Lyons, Nestle, Vega Company, Del monte making products such as tomato sauce, tomato juice, chili sauce, chili cubes, and others.

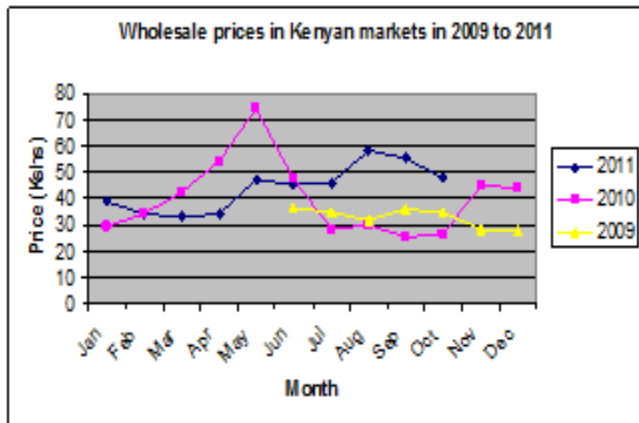
VOLUMES

Over 590,000 tons were produced in 2010 for sale; approximately 60 to 70 % reached the markets for selling both as fresh and processed.

Kenya exported into the region 3,380 MT of processed tomato products between 2006 and 2010 worth Ksh 209.7 million (\$2.9M) with the destinations being Tanzania, Sudan and Uganda. Of this, tomato sauce was the biggest component and is Kenya’s second largest export among processed vegetables having amounted to 2,804 MT worth Ksh 152.2 million (\$2.1 million).

Recent study (TNS-RMS East Africa) show that retail volumes in major supply networks in Kenya of fresh tomatoes have been declining between June and September 2011 from 65,781 tons to 55,627 tons.

PRICES



Prices of tomatoes vary with supply as traditional annual periods of oversupply bring prices down. Tomato prices are very fluid in the sense they are controlled by brokers especially in big markets of Nairobi’s Wakulima and Mombasa’s Kongowea. The average wholesale prices per kg in 2011, 2010 and 2009 were Ksh 44/-, 40/- and 33 respectively; this shows a general price increase in the last three years. Farm gate prices may vary from 400 to 4000 Ksh per 64 kg crate i.e. 6 to 62 Ksh per kg, hence an average of 17 Ksh per kg is normal; although direct marketing could fetch higher prices. Recent study (TNS-RMS East Africa) shows that retail value has increased in June 2011 to September 2011 from Ksh 2.6 billion to 3.7 billion with price per kg going up from Ksh 40.40 to 68.00 in the same period.

COMPETITION

Competition is basically between big buyers of the commodity mainly brokers in markets of large production areas of Karatina, Loitokitok, Kagio, Mwea and others.

Processing companies like Premier food industries, Trufoods Limited, Kiburi Food Processors, Frig-o-ken and others also compete for the product and have to import a lot from outside the country as tomato concentrates at between Ksh 130 to 140 per kilogram. This gives the tomato a regular market for producers throughout the year.

PRODUCTION AREAS

Tomatoes are grown in almost every part of Kenya. As it is a relatively short duration crop and gives a high yield, it is economically attractive and the area under cultivation is increasing daily. High humidity and temperature reduces fruit set and yields while very low temperatures delay colour formation and ripening. Tomatoes prefer medium rainfall and moderately tolerant to a wide range of pH but grows well in soils with a pH of 5.5 – 6.8 with adequate nutrient supply and availability. Addition of organic matter is, in general, favourable for good growth. Tomato is produced in Central regions of Kirinyaga, Muranga South, Laikipia West, Laikipia East and Thika; Rift valley regions of Loitokitok, Nakuru North, Narok South, Uasin Gishu North, Bureti, Keiyo, Kericho, Bomet, Narok North, Kipkelion, Sotik, T/Nzioa East, Kwana and Marakwet; Nyanza regions of Gucha, Homa Bay, Kisii Central, Kisii South, Nyamira, Nyando, Rachuonyo, Borabu, South Gucha, Rongo, Migori, Siaya, Bondo and Kisumu East; Western region of Bungoma West; North Eastern regions of Garissa ; and Coast region of Taveta. The most suitable areas are the arid and semi-arid regions such as Baringo, Machakos, Narok and Taveta where irrigation is necessary for most of the year. Also production is done under greenhouse especially around Nairobi, Eldoret and other towns. Tomato production is mainly small scale-rain fed: mostly covering one-eighth of an acre to one acre or even less with very few farmers committing more than 5 acres to tomato production. There is a trend towards production of tomatoes in greenhouses and it is possible that tomatoes produced in greenhouses in Kenya account for 5% of the total tomato production. In 2010, the area under the tomato crop was 18,981 ha producing 590,137 metric tons. The table below provides the provincial breakdown of production in Kenya.

Table I: Tomato production statistics 2006-2010

Province	Area (Ha)					Production (MT)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Central	3,700	3,477	2,600	2,600	3,796	111,000	104,310	11,700	156,000	171,600
Nyanza	7,074	6,495	4,779	5,517	5,538	141,480	194,850	143,370	165,510	166,140

Table 1: Tomato production statistics 2006-2010

Province	Area (Ha)					Production (MT)				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Coast	1,096	902	905	982	2,274	32,880	27,060	36,200	41,443	92,176
R/valley	4,509	5,159	4,774	4,946	4,131	135,270	154,770	143,220	84,292	77,004
Eastern	1,532	1,205	880	1,031	1,134	45,960	36,150	26,400	26,077	28,685
Western	1,179	1,213	1,923	1,638	1,718	23,580	36,390	57,690	37,590	38,426
N/Eastern	384	350	460	391	320	11,520	10,500	1,400	14,459	14,391
Nairobi	68	125	79	77	70	2,040	3,750	3,160	1,542	1,715
Total	19,542	18,926	16,400	17,182	18,981	503,730	567,780	402,070	526,923	590,137

TOMATO PROPAGATION

Before any production, it is advisable that soil analysis is done one month before in order to determine the fertility levels, pH, soil-borne pests, soil-borne diseases and any inherent challenge that may be in the soil.

Planting Material

There are two major varieties based on growth characteristics: determinate and indeterminate. Determinate varieties are normally for fresh market while indeterminate varieties for processing. Popular fresh market varieties include Moneymaker, Marglobe, Onyx, Star 9065, among others.

Varieties for processing include Riogrande and Cal J; but Cal J has become popular in the local fresh market due to its good shelf life and colour.

Varieties suited to greenhouse production are called “indeterminate types,” meaning they can keep growing and increasing in length, like a climbing plant, for at least ten months. This obviously increases yields per square metre compared to field production. Locally available tomato varieties suitable for greenhouse production are Anna FI and BHN-110.

Growers are advised to always buy seeds from reliable seed merchants and ensure that the seeds are certified by KEPHIS. Tomatoes are mainly propagated by raising seedlings in a nursery then later transplanting in the fields. To raise a sufficient amount of plants for one hectare, 150 - 200 g seeds should be sown on 250 m² of seedbed and about 1 to 1.5 kg/ha is used for direct sowing. The nursery site should be well chosen where other solanaceous crops have not been grown in the last 3 years due to the risk of crop infection by soil-borne diseases and pest infestations. The seeds can also be raised in seed boxes or germination trays or even purchased from HCDA registered and KEPHIS inspected nurseries. Transplanting is done 3 to 6 weeks after germination.

Land Preparation

The land for planting in the open field or green house should be ploughed to at least 15 cm deep and prepared to a fine tilth to ensure proper drainage. This should be followed by preparing raised beds. Add at least a debe of manure (12 – 15 kg or 15 tons per hectare) for every square meter of bed and a teaspoonful (matchbox full) of NPK (100 kg/ha) for every planting hole; for greenhouse production especially the typical 0.15 ha, 50 kg of NPK is applied at planting time. In areas where there is a high incidence of bacterial wilt, it is advisable to grow the crops off the ground in bags or even hydroponics. The soil put into the bags should be sterilized.

During land preparation for the greenhouse, you will need to consider the many greenhouse types used around the world. The simplest and best design for a small-scale grower is the free span or A-Frame type (this has proven popular with small-scale growers in Kenya).

Spacing is very much dependent on the variety whether for greenhouse or out in the field (an expert should be contacted to confirm) but a spacing of 60 – 100 cm between rows and 50 cm between plants is recommended. A plant population of between 20,000 – 33,000 plants/ha is expected.

CROP MANAGEMENT

For out of the field grown tomatoes medium rainfall is preferable. In hot dry areas, water application at 3-5 per day intervals is essential. Wet conditions increase disease incidences and fruits fail to ripen. Erratic moisture conditions lead to cracking of fruits and development of blossom scar. Weeding should be done regularly to reduce competition for nutrients by weeds. The weeds could also act as host for pests and diseases. Leaves close to the ground should be removed to help prevent the entry of blight. Workers (especially smokers) should wash their hands before handling plants as they may otherwise spread tobacco mosaic virus disease. The smaller fruit on a cluster should also be removed to allow the remaining tomatoes to obtain the desired, marketable size. There should be a maximum of six to seven fruits per cluster. The exact number depends on market preference. Clean water devoid of deadly human micro-organism should be used when cleaning the tomatoes and for irrigation.

In the greenhouse, extra consideration should be stricter hygiene i.e. any diseased leaves should be removed and taken out of the greenhouse; temperature and humidity should be well managed ventilation curtains should be considered during set-up of greenhouse; insect screens should be used in the holes underneath the curtains to prevent insects entering the greenhouse as they spread viruses and eat leaves; it is important to use drip irrigation in the greenhouse as any other system of irrigation will create difficulties in controlling humidity - high humidity can easily lead to diseases like mildews and blights. Remember to monitor soil moisture to prevent over watering, which may lead to bacterial wilt and fungal soil diseases.

Pests

The important thing to remember with pests and diseases is that scouting, early detection and proper hygiene/sanitation are critical to successful management. Incidences of excessive pesticide use are common on this crop during crop protection and it is important to observe proper pre-harvest interval as government regulators like KEPHIS and PCPB check for cases of misuse of pesticide. Insect pest of tomatoes include Thrips, aphids and whitefly; Spider mites (the most common spider mite is the two-spotted mite); American Bollworm (greenhouse conditions favour rapid development of this pest may occur); Diseases of tomatoes - bacterial Wilt (this has turned out to be devastating in some cases, but can be avoided with careful selection of the greenhouse site); Powdery Mildew (Lapses in humidity control and temperature can easily lead to a devastating attack); Blight (late blight is very serious in open field production but this fungal disease occurs rarely in the greenhouse); Nematodes of tomatoes (Root-knot nematodes are of major importance in tomato cultivation, as they can cause yield losses of about 30% in tomato in the tropics).

Fertility Management

For out of the field tomatoes, top-dressing with CAN at 100 kg/ha should be done when plants are 25 cm high. A second CAN application of 200 kg/ha 4 weeks later is beneficial. Potassium application is very important for fruit quality and maybe applied with CAN using Potassium nitrate at equal rates i.e. 100 kg/ha and 200 kg/ha on 3rd and 7th week after transplanting. All these applications are dependent on soil analysis done before land preparation. Potassium deficiency will result to fruits with poor taste and a hollow cavity; phosphorous deficiency will result in stunted growth, delayed maturity and reduced yields; nitrogen deficiency will result in small fruits; while calcium deficiency will result in blossom end rot (BER).

For greenhouse production especially the typical 0.15 ha fertilisers are applied through the drip system. Remember applications can only be accurately determined after a soil test During the period 3 to 6 weeks after transplanting, 36 kg of urea and 24 kg of polyfeed (19:19:19) are applied; the period 7 to 9 weeks, 27 kg of potassium nitrate and 24 kg of polyfeed are applied; during the final weeks of 10 to 25 weeks, 204 kg of potassium nitrate, 102 kg polyfeed and 102 kg of Calcium nitrate are applied.

HARVESTING AND YIELD

Time to First Harvest and Seasonality

Harvesting on time and proper post-harvest treatment of the fruit is very important. Tomatoes mature in 3 to 4 months or around 75 days after transplanting depending on the variety. Harvesting will continue for about one month depending on climate, diseases, pests, and the cultivar planted. During one season tomatoes must be harvested 4 to 15 times or one to three times a week.

For processing, fruits should be harvested ripe; but for fresh market, fruits should be harvested when slightly ripe so as to ensure that they reach the market when ripe. This is indicated by a pink colour first showing at the blossom end. A simple colour index for red tomatoes can be given to the tomato pickers so that they are familiar with this. Tomatoes should be harvested into clean plastic or wooden crates. Plan your harvest to coincide with your buyer's needs – remember that the fruit begins to lose quality the minute they are removed from the plant. This will depend on market preference and time it takes to get the tomatoes to market. For fruit that will travel long distances, harvesting at the colour break stage where the shoulders of the fruit are still green but the rest of the fruit is beginning to turn red is the norm. The greenhouse varieties like Anna FI and BHN-110 can be held on the plant for an additional 2 weeks even when red ripe, which helps with timing and dispatch to the market. When harvesting, ensure that the highest standards of hygiene are maintained – this will ensure a long, productive harvesting period. To avoid unnecessary damage to the fruit use bread crates (32kg) for picking and place (do not throw) the fruit into them. Every bruise or cut will count against your profits. Remember, quality is everything. On average 30 tons per Ha is expected, although greenhouses will yield higher with proper management; yields of 12 tons per 0.15 ha greenhouse are achievable, which translates to over 80 tons per hectare. Price changes in 2010 and 2011 indicated months of May and June with above average prices to be months with least supply and therefore ideal for targeting as an agri-entrepreneur but rain and dry spells also control prices significantly.

Post-harvest handling, storage and product specifications

For fresh market, the fruits should be graded by size as small, medium and large. This may not be necessary for processing tomatoes. The fruits should be packed in wooden (64 kg) or plastic crates and delivered to the market immediately. Storing tomatoes in tropical and subtropical climates can be difficult without cold storage. Tomatoes are stored at a temperature range of 6-13°C depending on the stage of ripeness. Tomatoes that are to be sold fresh for table consumption must not be stored for long. Tomatoes that have been processed, for example into tomatoes purée or juice, or dried or pickled can be stored from several months to a few years. To prevent rapid moisture loss, tomatoes should be stored at 80-95% relative humidity. Loading and dispatch area should be very clean and firm enough to facilitate easy accessibility of any vehicle or operations. Quality control facilities, procedure, standards and records should be available per produce type to enhance quality. These facilities include waste buckets, decomposition pit, quality assurance rulers, coolants, tables, etc. A charcoal cooler should be provided in the storage room before dispatch. Greenhouse tomatoes can store for at least two weeks without significant quality loss. This is not ideal because tomatoes will continue to ripen in storage. It is advisable to harvest direct from the greenhouse, remove the field heat from the fruit (cooling room or a shady shelter for a few hours) and then deliver to the market.

INVESTMENT: GROSS MARGIN ANALYSIS

The data given by farmers for open field grown tomatoes was averaged and from this the gross margin was estimated to be Ksh 289,700.00 per hectare or Ksh 114,900.00 per acre.

All values in Kenyan Shillings

Table 2: Profitability (gross margin analysis) for 1 hectare

ITEM	Unit Cost - Ksh	Quantity (Ha)	Total Cost (Ha) - Ksh	Quantity (Acre)	Total Cost (Acre) - Ksh
Gross Income					
Sales (30 tons @ 17 Ksh/kg)	17	30,000	510,000	12,000	204,000
Total Income			510,000		204,000
Cost of Production					
Seed (Cal J) 200gm	300	4	1,200	2	600
Nursery Management (Man Days - MD)	150	8	1,200	4	600
Ploughing	3,000	2	6,000	2	2,400
Transplanting (MD)	150	25	3,750	10	1,500
Fertilizer:					
Manure (Metric Ton)	2,000	15	30,000	6	12,000
NPK (100 kg)	2,500	2	5,000	1	2,500
CAN (300 kg)	2,100	6	12,600	3	5,250
Pesticides	2,000	5	10,000	2	4,000
Foliar Feed	500	10	5,000	4	2,000
Weeding (MD)	150	75	11,250	30	4,500
Spraying labor (MD)	250	30	7,500	12	3,000
Staking sticks (no of items)	2,500	20	50,000	8	20,000
staking labor (MD)	150	25	3,750	10	1,500
Sisal Twine (rolls)	150	12	1,800	5	750
Pruning (MD)	150	25	3,750	10	1,500
Harvesting (MD)	150	300	45,000	120	18,000
Grading (MD)	150	150	22,500	60	9,000
Total Variable Costs			220,300		89,100
Gross Margin			289,700		114,900
TOTAL YIELD (KG)			30,000		12,000
MARGIN PER KG (Ksh)			10		10
AVERAGE MONTHLY INCOME for 5 months (Ksh)			57,940		22,980

In order to get the net income of the greenhouse grown crop (0.15 ha of variety Anna FI), several cost items were considered and a gross margin analysis drawn as below:

Table 3: Gross margin analysis for greenhouse tomatoes

Item	Description	cost				
Green house value	The structure 0.15ha in size costed Ksh 450,000 and would support 6 crop seasons.	75,000				
Planting materials	The planting material bought at seedlings level from a registered farm at a price of Ksh 5/= per seedling. The 0.15 ha greenhouse required 5000 seedlings.	25,000				
Planting	Planting is done on raised beds covered with a mulch material. 1 bag of DAP is used. The price of DAP at the time was Ksh 3,500 and the mulch Ksh 3000. The planting exercise took a total of 15 man days @ Ksh 200 per MD	9,500				
Plant Nutrition	Nutrition of greenhouse tomato is very important because it directly determines the yield. Fertilizers are applied through irrigation water. The choice of fertilizer to use was determined by the nutrient it contains and the stage of the crop. The table below shows the type of fertilizers used and their quantities on a weekly basis:	56,112				
	Wk		Fertilizer	Kg	cost per kg	cost
	3 to 6		Urea	36	54	1944
			Polyfeed 19:19:19	24	152	3648
	7 to 9		KNO3	27	100	2700
			Polyfeed 19:19:19	18	152	2736
	9 to 25		KNO3	204	100	20400
			Polyfeed 19:19:19	102	152	15504
			CaNO3	102	90	9180
TOTAL				56112		
Pest control	Pest control may revolve around controlling early and late blight for diseases and whitefly, aphids and leaf miner on the side of insect pest. Appropriate pesticides may be used.	9,200				
Crop maintenance	Labor for the entire cropping season was 420 man days at Ksh200	84,000				
Total cost	The total expenditure	257,212				
Gross income	At the end of the season the crop had given 10,390 kg of grade 1 and 1,537 kg of grade 2. All grade 1 tomatoes were sold at Ksh 40 thus realizing a total of Ksh 415,600. Grade 2 on average went for Ksh20/kg thus giving a total of Ksh 30,740.	446,340				
NET INCOME (KSH)		189,128				
TOTAL YIELD (KG)		11,927				
MARGIN PER KG (KSH)		16				
AVERAGE MONTHLY INCOME (OVER FIVE MONTHS PERIOD IN KSH)		37,505.60				

From this 0.15 ha unit it is evident with good management and proper technical support a farmer may get over Ksh 37,000 per month from around a third of an acre; the only challenge is that greenhouse start cost may be high.

INVESTMENT REQUIREMENTS

Table 4: Investment returns - provincial analysis

Province	Value (Ksh '000)				
	2006	2007	2008	2009	2010
Central	2,775,000	2,607,750	3,510,000	546,000	6,006,000
Nyanza	3,537,000	4,871,250	3,584,250	4,965,300	4,984,200
R/valley	3,381,750	3,869,250	2,864,400	1,966,785	2,843,667
Coast	822,000	676,500	905,000	1,036,063	2,304,400
Western	589,500	909,750	1,442,250	1,503,604	1,577,040
Eastern	1,149,000	903,750	528,000	536,090	589,699
N/Eastern	288,000	262,500	460,000	437,680	431,730
Nairobi	51,000	93,750	94,800	49,344	42,875
Total	12,593,250	14,194,500	13,388,700	15,954,866	18,779,611

CASE STUDIES

Case Study: Kiserian's SIBRO Farm, Joseph Okumu, 43 years

Mr. Joseph Okumu is a farmer growing tomato under greenhouse and has been doing it for two years with much success. Green house tomatoes are the indeterminate type, which means that they would continue growing so long as you maintain them. It is therefore expected that the crop be maintained well to reap maximum from it. It is estimated that the crop has the potential of being harvested for up to 6 months economically. The variety that was grown was Anna FI; in a greenhouse of 0.15ha. The greenhouse stands on 0.15ha of land, and if maintained well may last for around 4 years. If a crop of tomato has a season of 30 weeks, then the green house is projected to support 6 season of tomato crop. The planting material was bought at seedlings level from longonot farm in Naivasha. The greenhouse required 5000 seedlings. Planting was done on raised beds covered with a mulch material. One bag of DAP was used during planting. The agronomy included nutrition, pest control and crop management. Nutrition of greenhouse tomato is very important because it directly determines the yield. Other than DAP, all the other fertilizers like Urea, Poly feed 19:19:19, potassium nitrate and CAN were applied through irrigation water. The choice of fertilizer to use was determined by the nutrient it contains and the stage of the crop. Pest control revolved around controlling early and late blight for diseases and whitefly, aphids and leaf miner on the side of insect pest. Green house farming is highly labor intensive and needs very many people to maintain a tomato crop. The main activity during the early growing period is support in terms of training of the crop and de-suckering. When the crop goes to reproductive stage, the harvesting also becomes a heavy duty. Harvesting was mostly done on Tuesday and Saturdays. Harvesting started in week 11 and went through to week 30 when it was no longer economical to maintain the crop. Harvested commodity was categorized into grade 1 and 2; at the end of the season the crop had given over 11 tons worth over 400,000 Ksh with over 250,000 Ksh used in production costs, making over 150,000 Ksh during its five to six months of growth.

IMPORTANT CONTACTS

Service provider	Service	Contact
HCDA	Licenses nurseries with commercial planting material	Managing Director, Horticultural Crops Development Authority (HCDA) Nairobi Horticultural Centre, Airport Road, Opp. JKIA P.O. Box 42601-00100 Nairobi, Kenya (E.A) Telephone: +254-20-2088469, +254-20-2031560; Fax: +254 -20-3235898; Email: md@hcda.or.ke ; Website: www.hcda.or.ke
KEPHIS	Inspects and certifies planting material nurseries; Does pesticide residue analysis tests	Managing Director, KEPHIS P.O. Box 49592-00100, Nairobi, Kenya; Tel.: +254-20-3536171/2; Fax: + 254-20-3536175; Email: director@kephis.org ; Website: www.kephis.org
PCPB	Registers pest control products and sellers of pest control products	Managing Director/Secretary, PCPB P.O. Box 13794-00800, Waiyaki, way, Nairobi Tel.: 0208021846/7/8 Email: pcpboard@todays.co.ke ; md@pcpb.or.ke ; Website: www.pcpb.or.ke

Kenya Horticulture Competitiveness Project

USAID-KHCP is a five-year project designed to increase smallholder farmer incomes through enhanced productivity, crop diversification and improved market access.

Visit www.GrowKenya.org for more information on upcoming activities and to read our monthly bulletins and success stories.

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