

Vegetable Seeds Production in Egypt, in Particular the National Program for Vegetable Seeds Production (VSP)

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ABSTRACT

The research aims to study the situation of seeds production, foreign trade, and the gap for vegetable seeds, as well as the situation and the achievements of the national program of vegetable seeds production. The research used the descriptive statistics, given the recent launch of the program in 2019. The results reveal that the value of Egypt's vegetable seeds exports and imports represents 6.74% and 55.56% of total seeds exports & imports respectively during 2015-2020, therefore, the gap (deficit) of vegetable seeds was reached an average of LE 761.3 million representing 61.74% of the total value of the deficit for seeds in Egypt. While the national program for VSP achieved during the year 2022, about 0.41% of the total seeds needed to cultivate the crops targeted by the program, and 2.4% of the quantity of imported seeds for these crops. As well as there are 316 breeds of vegetable crop seeds that were produced, 26 of registered hybrids, 17 promising hybrids, 4 hybrids under registration. According to the results achieved, the research presents the following recommendations:

- Conducting further studies to evaluate the achievements of the national program for VSP and to evaluate the productivity of vegetable seeds produced by the national program VSP to determine the extent of the program's success in equalizing the productivity of its imported counterpart.
- Devoting high attention to direct the activities of the national program for VSP to produce seeds that are compatible with different types of soil in the horizontal expansion projects.

Keywords: Seeds production- Seeds exports- Deficit-Hybrids- Certified seeds.

INTRODUCTION

The agricultural sector is the main pillar of the Egyptian economy, which contributes 11% of the total gross domestic product and employs about 23.8% of the population in 2020 (<http://www.capmas.gov.eg>), which is the highest employment share among the economic sectors, and the agricultural sector absorbs about LE 49 billion (\$3.13 billion), representing 5.3% of total investments in 2018/2019. As well as its sustenance about 55% of the population, most of whom live in rural areas (Central Agency for Public Mobilization and Statistics, 2020).

Vegetables are considered the agricultural crops of high economic and nutritional importance, and therefore farmers are interested in cultivating it; because it meet demand in a short time, and they are characterized by achieving a return that exceeds many other crops, in addition to being a source of foreign currency (Schreinemachers *et al.*, 2018).

Seeds mean the plant part that is used to reproduce the variety with its characteristics, which may be grain, seeds, cuttings, tubers, offshoots, or cells that are developed through tissue culture technology. About 2 million feddan of vegetables are cultivated in Egypt, with a production of 25.5 million tons, seeds for them are annually imported from abroad at a value of \$200 million (State Information Services, 2021).

The updated Agricultural Development Strategy 2030 aims to achieve four priority goals, which are as follows (Updated Agricultural Development Strategy, 2030):

- Raising the degree of food security in strategic food commodities, through further development of national strategies and plans for food security and nutrition.
- Implementation of digital transformation in the agricultural sector.
- Improving agricultural productivity.
- Sustainable use of natural agricultural resources.

Problem and Justifications:

Although Egypt possesses many natural, material and scientific capabilities and experience in the field of seed production for different crops, the seed of vegetable crops covers only 2% of the annual needs, and then Egypt imports 98% of its needs of seeds from abroad, so the research problem lies In exposure to economic, social and environmental risks as a result of the low production of vegetable seeds locally and dependence on abroad to meet their needs.

Objectives:

The research aims to study the current situation of seeds production, foreign trade, and the gap for vegetable seeds, as well as the current situation and the achievements of seeds production of the main vegetable

DOI: 10.21608/asejaiqjsae.2023.309322

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Received, June 20, 2023, Accepted, July 22, 2023.

crops within the national program of vegetable seeds production.

Research Method and Data:

The research used the descriptive statistics such as the average and percentages, given the recent launch of the national program of vegetable seeds production, annual data over the period 2015-2020 was used to study the current situation of domestic crop seeds production, as well as the current situation and the achievements of the seeds production of the main vegetable crops within the national program of vegetable seeds production.

The research depends on both secondary and raw data published and issued by Ministry of Agriculture and Land Reclamation (MALR), the Central Agency for Public Mobilization and Statistics (CAPMAS), and raw data was collected from Horticultural Research Institute (HRI); Agricultural Research Center.

A brief overview of the national program for vegetable seed production in Egypt:

In 2019, the national program for vegetable seed production was launched, which aims to develop local varieties and hybrids to replace imported ones. The program's implementation plan indicates that covering the annual needs of vegetable seeds will take several years, as this plan indicates that by 2023, certified hybrid seeds will be provided. It covers about 20%, 12%, 5%, 70% of the total area expected to be cultivated with each of the crops of tomatoes, melons, cantaloupes, beans.

Approved seeds will also be produced during the year 2022 of pepper and eggplant varieties, covering about 30%, 50%, of the total area expected to be cultivated from each of them, which means that there are opportunities to achieve a high percentage of self-sufficiency from some hybrid vegetable seeds within a short period of time from the rest crops covered by the program.

The objectives of the national program for VSP in Egypt:

- Reducing imports of vegetable seeds to economize foreign currency for the development of the Egyptian economy.
- Developing local vegetable varieties and hybrids that are equal to or superior to imported ones, characterized by high quality and resistance to stress and diseases.
- Developing local vegetable varieties and hybrids in which there is a link between the farmer's requirements in terms of early crop and quality characteristics, and are compatible with the taste of the Egyptian consumer.

- Control the prices of vegetable seeds in the Egyptian market to protect farmers from the greed of seed companies.

Target crops for the national program for VSP in Egypt:

The number of crops targeted for seed production has reached 11 crops, as follows:

Tomatoes, beans, peas, peppers, eggplant, squash, cucumbers, melons, cantaloupes, kidney beans, and potatoes.

Components of the national program for VSP in Egypt:

- Production of high quality, disease-free, high-purity seeds.
- Expanding the establishment of centers for the production of disease-free and genetically pure seedlings.
- Development of agricultural transactions.
- Expanding the use of integrated control methods.
- Expanding the use of agricultural mechanization and harvesting.
- Implementation of extension fields and field days to persuade farmers practically to develop and improve.
- Preparing, printing and distributing guidance brochures.

Results and Discussions

The current situation of vegetable seeds in Egypt:

Table (1) presents a list of produced and certified vegetable seeds over the period 2015-2020. It can be noted that pea seeds comes on top of vegetable seeds by recording a quantity of 287.4, 50.3 ton representing 47.1%, 41.2% of the period's average quantity of produced and certified vegetable seeds respectively. Beans seeds followed by recording 30.1%, 28% of produced and certified vegetable seeds respectively, squash ranks third by recording 16.5%, 24.8% of produced and certified vegetable seeds respectively. Other vegetable seeds ranks last by recording a total percentage of 6.3%, 6% of the period's average quantity of produced and certified vegetable seeds respectively. As well as it can be noted a decline in the locally produced quantity of the study crops from 1154.53, 186.62 tons in 2015 for each of the produced and certified seeds quantities respectively, to 173.88 and 82.22 tons in 2020, which may be due to many marketing, structural, organizational and procedural obstacles, including the absence and weakness of the efficiency of many legislations, the long required period to register new varieties, the difficulty of competing with the giant global companies producing vegetable

seeds that have the financial, procedural, technical and scientific possibilities for this industry, lack of genetic diversity of local vegetables varieties seed, and lack of transparency and governance during the stages of production and marketing of vegetable seeds locally.

Table (2) presents Egypt's seeds imports over the period 2015-2020. It can be noted that the value of Egypt's vegetables seeds imports averages to LE 771.8 million representing 55.56% of total seeds imports, which are estimated at LE 1.39 billion. It is also clear that the value of vegetable seed imports decreased from LE 957.4 million in 2019 (the beginning of the launch of the national program for VSP) to LE 929 million in 2020, 80% of the value of vegetable seed imports are imported from the United States of America (20.3%), China (16.6%), Thailand (14.5%), India (13.7%), Brazil (7.8%) and Chile (7.2%) in 2019.

Table (3) presents Egypt's most important vegetable seeds imports during (2015-2020). It can be noted that tomatoes and cucumber are the major two vegetable seeds by recording an value of LE 215.7, 192.5 million representing 27.9%, 24.9% of Egypt's most important vegetable seeds imports respectively, Pepper, Squash, Eggplant followed by recording an value of LE 68.9,

52.6 and 47.6 million representing 8.9%, 6.8%, 6.2% respectively.

It is clear from Table (4) that the quantity of imported potatoes seeds reached 164.81 thousand tons for the average period 2015-2020. Spunta variety represented 35.8% of the total imports of potatoes seeds, followed by Hermes and Cara varieties, about 20.3% and 17.9%, respectively.

Table (5) presents Egypt's vegetable seeds exports over the period 2015-2020. It can be noted that the value of Egypt's vegetables seeds exports averages to LE 10.53 million representing 6.74% of total seeds exports, which is estimated at LE 156.16 million. It is also clear that the value of vegetable seed exports increased from LE 9.7 million in 2019 (the beginning of the launch of the national program for VSP) to LE 10.75 million in 2020.

Studying Egypt's vegetable seeds exports over the period 2015-2020 (Table 6) reveals that the exports of potatoes seeds representing 25.43% of total vegetables seeds exports, peas, tomatoes and squash followed by 4.47%, 2.38% and 2.28% respectively.

Table 1. Domestic production of vegetable seeds in tons over the period (2015-2020)

Crops	Average		%	
	Produced	Certified	Produced	Certified
Peas	287.42	50.27	47.06	41.20
Cabbage	0.13	0.03	0.02	0.02
Green Beans	184.09	34.16	30.14	27.99
Green Kidney Beans	5.80	3.46	0.95	2.84
Squash	100.79	30.28	16.50	24.81
Water – Melon	29.86	1.86	4.89	1.52
Cucumber	0.38	0.00	0.06	0.00
Snake Cucumber	0.23	0.15	0.04	0.12
Cantaloupe	0.05	0.00	0.01	0.00
Melon (Shahd)	1.93	1.79	0.32	1.46
Pepper	0.03	0.03	0.01	0.03
Total	610.70	122.02	100.00	100.00

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 2. Egypt's seeds imports in LE million during (2015-2020)

Crops	Average	%
Field crops	490.33	35.3
Vegetable crops	771.8	55.6
Fruit crops	113.02	8.14
Medicinal and aromatic plants	0.54	0.04
Horticultural crops	13.54	0.97
Total	1389.2	100

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 3. Egypt's most important vegetable seeds imports in LE million during (2015-2020)

Crops	Average	%
Tomatoes	215.7	27.9
Cucumber	192.5	24.9
Pepper	68.9	8.9
Squash	52.6	6.8
Eggplant	47.6	6.2
Potatoes (Mini Tubers)	28.9	3.8
Cantaloupe	18.7	2.4
Water – Melon	12.3	1.6
Peas	9.2	1.2
Beans	7.9	1.03
Other vegetable	117.4	15.2
Total	771.8	100.0

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 4. Egypt's imports of most important potatoes seeds varieties in tons during (2015-2020)

Crops	Average	%
Spunta	58922	35.75
Hermes	33454	20.3
Cara	29556	17.93
L.Rosetta	7443	4.52
Bern	4725	2.87
Sante	3922	2.38
Diamant	3774	2.29
Penba	3467	2.1
Others	19545	11.86
Total	164807	100.0

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 5. Egypt's seeds exports in LE million during (2015-2020)

Crops	2015	2016	2017	2018	2019	2020	Average	%
Field crops	97.93	102.01	159.60	182.69	112.95	149.45	134.1	85.88
Vegetable crops	4.25	7.40	19.96	11.11	9.70	10.75	10.53	6.74
Fruit crops	2.40	4.94	9.53	16.02	14.47	16.33	10.61	6.8
Horticultural crops	0.39	0.18	0.00	0.15	0.00	0.03	0.13	0.08
Medicinal and aromatic plants	0.21	0.92	0.34	0.85	0.82	1.57	0.78	0.5
Total	105.20	115.45	189.43	210.80	137.94	178.12	156.16	100.0

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 6. Egypt's most important vegetable seeds exports in LE million during (2015-2020)

Crops	Average	%
Tomatoes	0.25	2.38
Cucumber	0.13	1.23
Pepper	0.0001	0.02
Squash	0.24	2.28
Eggplant	0.01	0.05
Potatoes	2.68	25.43
Water – Melon	0.00001	0.03
Peas	0.47	4.47
Other vegetable	6.75	64.1
Total	10.53	100.0

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

The gap value of vegetable seeds in Egypt during the period (2015-2020):

Studying the value of the gap (deficit) of vegetable seeds reveals that it realized deficits which increased from LE 399.74 million in 2015 to LE 918.23 million in 2020 as shown in Table (7), as well as the value of the gap (deficit) of vegetable seeds over the period 2015-2020 reached an average of LE 761.3 million representing 61.74% of the total value of the deficit for seeds in Egypt.

The current situation of the main vegetable crops seeds within the national program for VSP in Egypt:

It is clear from Table (8) that the program achieved during the year 2022, about 0.41% of the total seeds needed to cultivate the crops targeted by the program,

and 2.4% of the quantity of seeds imported for these crops. The rest of the vegetable seeds required for cultivation are provided from local production.

Achievements of the national program for VSP in Egypt according to its components:

First: Breeding programs within the national program for VSP in Egypt:

Table (9) presents the most important breeds and promising hybrids and hybrids under registration for vegetable crops in the national program for VSP in Egypt. It can be noted that there are 316 breeds of vegetable crop seeds that were produced, 26 of registered hybrids, 17 promising hybrids, 4 hybrids under registration.

Table 7. The gap and surplus of vegetable seeds in LE million during (2015-2020)

Crops	2015	2020	Average	%
Field crops	-130.27	-477.69	-356.23	28.89
Vegetable crops	-399.74	-918.23	-761.28	61.74
Fruit crops	-17.22	-154.06	-102.4	8.3
Medicinal and aromatic plants	-0.03	1.46	0.25	-0.02
Horticultural crops	-8.53	-10.29	-13.41	1.09
Total	-555.79	-1558.82	-1233.08	100.0

Source: Economic affairs sector, bulletin of agricultural inputs, MALR.

Table 8. The quantity of vegetable seeds produced in tons through the national program for VSP in 2020

Crops	Total seeds needed to cultivation	The seeds produced through the national program for VSP	The quantity of seeds produced through the national program for VSP to total seeds needed	Total imported seeds	The quantity of seeds produced through the national program for VSP to total Imported seeds
Tomatoes	19.5	0.008	0.04	23.78	0.03
Eggplant	1.5	-	0.00	4.24	0.00
Pepper	9.0	0.005	0.06	14.2	0.04
Beans	2160	2.15	0.1	57.86	3.72
Peas	2880	2.1	0.07	795.9	0.26
Water – Melon	13.7	0.104	0.76	14.16	0.73
Squash	57.0	-	0.00	10.78	0.00
Cantaloupe	8.3	0.036	0.43	12.94	0.28
Cucumber	47.5	0.2	0.42	25.76	0.78
Kidney Beans	-	15.0	-	3.0	5.0
Snake Cucumber	-	1.96	-	0.4	490.0
Total	5196.5	21.6	0.41	963.04	2.24

Source: Updated Agricultural Development Strategy, 2030, MALR.

- Horticultural Research Institute (HRI), Agricultural Research Center (ARC).

Table 9. Breeds and promising hybrids and hybrids under registration for vegetable crops in the national program for VSP in Egypt

Crops	NO. of breeds	Registered Hybrids	promising Hybrids	hybrids under registration	Implementation place
Tomatoes	131	5	5	1	Qaha, Mansoura, Gymmiza, Noubaria, Sakha
Pepper	29	3	-	1	Qaha, Sakha
Eggplant	26	5	-	-	Qaha, Sakha
Squash	29	-	3	1	Gymmiza
Cucumber	33	1	-	1	Qaha, Sakha
Water – Melon	25	5	5	-	Qaha, Ismaalia
Cantaloupe	20	2	-	-	Qaha
Beans	40	1	4	-	Qaha
Kidney Beans	12	1	-	-	Qaha
Peas	30	2	-	-	Qaha, Shandwel
Snake Cucumber	-	1	-	-	Qaha
Total	375	26	17	4	-

Source: Updated Agricultural Development Strategy, 2030, MALR.

- Horticultural Research Institute (HRI), Agricultural Research Center (ARC).

Second: Vegetable seed multiplication programs within the national program for VSP in Egypt:

Studying the produce and target vegetable seeds (Table 10) reveals that the national program for VSP achieved 20.9%, 21.5%, 34.7%, and 88% of the target for seed production of peas, beans, water melons and tomatoes, while exceeded the target of seeds of snake

cucumbers, kidney beans, cucumbers and cantaloupes with rates ranged between 392% and 228.1% in 2022, and it is targeted to double the production during 2023 of more than 14 and 17 times for tomatoes and beans seeds than it was in 2022, while the target in 2023 will be lower than the product for Kidney bean seeds in 2022.

Table 10. The quantity of produce and target vegetable seeds (kg) within the national program for VSP in Egypt in 2022, 2023

Crops	2022				2023		Targeted quantity 2023/ Produced quantity 2022
	Targeted seeds quantity	Produced seeds quantity	Produced/ targeted seeds quantity (%)	Marketed seeds quantity	Marketed/ Produced seeds quantity (%)	Targeted seeds quantity	
Kidney Beans	4000	15000	375.0	0	0	12000	80.0
Beans	10000	2148	21.5	375	17.5	30000	1396.6
Peas	10000	2093	20.9	1538	73.5	15000	716.7
Snake Cucumber	500	1960	392.0	1879	95.8	2000	102.0
Cucumber	70	200	285.7	0.45	0.2	500	250.0
Water – Melon	300	104	34.7	20.7	19.9	400	384.6
Cantaloupe	16	36.5	228.1	1.9	5.2	50	137.0
Tomatoes	10	8.8	88.0	0.45	5.1	150	1704.5
Pepper	0	5.05			0	50	990.1
Squash						300	
Total	24896	21555.4	86.6	3815	17.7	60450	280.4

Source: Horticultural Research Institute (HRI), Agricultural Research Center (ARC).

Table 11. Funding sources and expenditures for the program till January 2023

Crops	Cost (Million)	Funder	Expenditures (Million)	remaining funding (Million)	The beginning of the project	Project end
The national project for breeding tomatoes, beans and peas to develop new local varieties	4.7	Agricultural development program	2.8	1.9	2019	2024
The national project for Registering, multiplication and spreading of new local hybrids and varieties of tomatoes and peas	5	Agricultural development program	2.7	2.2	2020	2024
A project of produce local vegetable hybrids of watermelon, cantaloupe, cucumber, Squash, pepper and eggplant	5	Scientific Research Academy	5	Stopped	2020	2023
Total	14.7 Million	-	10.6 Million	4.1 Million		

Source: Horticultural Research Institute (HRI), Agricultural Research Center (ARC).

Table 12. The revenues and profit of the national program for VSP in Egypt

Crops	Revenue(LE million)	Cost(LE million)	Profit (LE million)
2021	1.6		
2022	5.0		
Till February 2023	8.0		
Total	14.6	10.6	4.0

Source: Collected and computed from Horticultural Research Institute (HRI), Agricultural Research Center (ARC).

Cooperation with foreign companies within the national program for VSP in Egypt:

Cooperation has been established with a number of foreign companies to cultivate and breed varieties and hybrids of vegetable seeds in Egypt, such as the Indian, the Brazilian, the Hungarian, and the Dutch company.

Financing the National Program for Vegetable Seed Production in Egypt:

Table (11) shows the sources of funding for the program from its launching in 2019 until January 2023, which are the Agricultural Development Program, the Academy of Scientific Research, and the Horticultural Research Institute. Funding values reached LE 9.7, 9.57, 5 million respectively. The value of the disbursed amounts reached LE 10.62 million, representing 72.2% of the total financial allocations for the program.

Table (12) shows the revenues and profit of the program during 2021 and 2022 till February 2023 as a result of selling the seeds produced by the national program for VSP, reached to LE 14.558, LE 4.0 million respectively.

Executive summary

From the previous presentation of the reality of vegetable seed production in Egypt, the following can be shown:

- A decline in the locally produced quantity of the study crops from 1154.53, 186.62 tons in 2015 for each of the produced and certified seeds quantities respectively, to 173.88 and 82.22 tons in 2020.
- Tomatoes and cucumber are the major two vegetable seeds imports by recording an value of LE 215.7, 192.5 million representing 27.9%, 24.9% of Egypt's vegetable seeds imports respectively.
- The value of Egypt's vegetables seeds exports averages to LE 10.53 million representing 6.74% of total seeds exports.
- The value of the gap (deficit) of vegetable seeds over the period 2015-2020 reached an average of LE 761.3 million representing 61.74% of the total value of the deficit for seeds in Egypt.

Technical achievements of the national program for VSP:

- There are 316 breeds of vegetable crop seeds that were produced, 26 of registered hybrids, 17 promising hybrids, 4 hybrids under registration.

Economics achievements of the national program for VSP:

- The program achieved during the year 2022, about 0.41% of the total seeds needed to cultivate the crops targeted by the program, and 2.4% of the quantity of imported seeds for these crops.
- The revenues and profit of the program during 2021 and 2022 till February 2023 reached to LE 14.558 and LE 4.0 million respectively.

According to the results achieved, the research presents the following recommendations:

- Conducting further studies to evaluate the achievements of the national program for VSP and to evaluate the productivity of vegetable seeds produced by the national program VSP to determine the extent of the program's success in equalizing the productivity of its imported counterpart.

- Devoting high attention to direct the activities of the national program for VSP to produce seeds that are compatible with different types of soil in the horizontal expansion projects.

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الملخص العربي

إنتاج تقاوي الخضر في مصر مع التركيز على البرنامج الوطني لإنتاج تقاوي الخضر

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توفير فى قيمة تقاوى الخضر المستوردة خلال عام ٢٠٢١ وحتى فبراير ٢٠٢٣ حوالي ١٤,٥٥، ٤,٠ مليون جنيه على الترتيب.

وفي ضوء ما سبق يوصي البحث بما يأتي:

- إجراء مزيد من الدراسات لتقييم العمل والتقدم والإنجازات للبرنامج الوطني لإنتاج تقاوي الخضر للوقوف على مدى تحقيقه لأهدافه الموضوعية.
- ضرورة توجيه أنشطة البرنامج الوطني لإنتاج تقاوي الخضر لإنتاج تقاوي متلائمة مع مختلف أنواع الأراضي في مشروعات التوسع الأفقي.
- إجراء دراسات لتقييم إنتاجية تقاوي الخضر المنتجة من قبل البرنامج الوطني لإنتاج تقاوي الخضر للوقوف على مدى نجاح البرنامج في معادلة إنتاجية نظيرتها المستوردة.
- توجيه الاهتمام بزيادة المخصصات المالية الموجهة للبرنامج.
- الكلمات المفتاحية: إنتاج تقاوي - صادرات التقاوي- الفجوة- الهجن- التقاوي المعتمدة.

يهدف البحث دراسة الوضع الحالي لإنتاج والتجارة الخارجية والفجوة لتقاوي الخضر، وكذلك الوضع الحالي والإنجازات للبرنامج الوطني لإنتاج تقاوي الخضر. استخدم البحث أسلوب الإحصاء الوصفي نظراً لبداية انطلاق البرنامج الوطني لإنتاج تقاوي الخضر في ٢٠١٩. تبين من النتائج أن قيمة صادرات وواردات تقاوي محاصيل الخضر في مصر بلغت حوالي ١٠,٥٣، ٧٧١ مليون جنيه على الترتيب خلال متوسط الفترة ٢٠١٥ - ٢٠٢٠، وهى تمثل حوالي ٦,٧٤%، ٥٥,٥٦% من إجمالي صادرات وواردات مصر من التقاوي، ولذلك قدرت قيمة الفجوة من تقاوي الخضر بحوالي ٧٦١,٣ مليون جنيه تمثل نحو ٦١,٧٤% من إجمالي قيمة العجز التجاري للتقاوي في مصر. بينما حقق البرنامج الوطني لإنتاج تقاوي الخضر خلال عام ٢٠٢٢ حوالي ٠,٤١% من إجمالي التقاوي المطلوبة لزراعة المحاصيل المستهدفة بالبرنامج، وحوالي ٢,٤% من قيمة تقاوي الخضر المستوردة. كما يُعد إنتاج ٣١٦ سلالة من تقاوي محاصيل الخضر من الإنجازات الفنية للبرنامج الوطني لإنتاج تقاوي الخضر، ٢٦ من الهجن المسجلة، ١٧ من الهجن المبشرة، ٤ هجن تحت التسجيل. كما حقق البرنامج الوطني لإنتاج تقاوي الخضر