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## Self-declaration by Egypt of Compartment free from infection with Brucella with vaccination

**Declaration sent to the OIE on 5<sup>th</sup> August 2021 by Abdel Hakim Ali, OIE Delegate for Egypt and Chief Veterinary Officer.**

### 1. Introduction and historical data on the epidemiological situation of Bovine Brucellosis in Egypt

The objective of this self-declaration is to claim free status as compartment free from Infection with Brucella with vaccination in dairy cattle in compliance with the provisions of Chapters 1.6, 4.4, 4.5, and 8.4. of the OIE Terrestrial Animal Health Code (Terrestrial Code) as of 1 January 2021 and share the favourable brucellosis situation in Egypt between OIE Members.

Brucellosis is still a national, regional and international problem that threatens both animal resources and public health. The first scientific paper that has reported brucellosis in farm animals in Egypt was published in 1939. In Egypt Brucellosis is still threatening both animal husbandry and human health and increases the burden on the government due to economic losses and public health impact.

The agriculture law No. 53/1966 is the dedicated law that regulates control of zoonotic diseases. The first dedicated regulation for supervision, prevention and control of bovine brucellosis in Egypt was drawn up in CVO decree No. 10/1985, ([annex 1](#)). By this ordinance, bovine brucellosis was listed as an officially notifiable disease and subjected to specific sanitary veterinary measures, including quarantine, ([annex 1-1](#)). In 1988, the ministerial decree No. 1067 was the first ministerial decree dedicated to regulate standards operating procedures for controlling Brucellosis and bovine tuberculosis in details starting from notification process, testing, quarantine, slaughter and compensation, as well as vaccination schedule. The control of the disease is achieved by test, slaughter and sanitary disposal of all positive animals. In regards to suspected diseased cases, consumption of its products is prohibited.

The national policy for controlling Brucellosis in Egypt depends on test, slaughter and compensation with protective measures and prohibition of consumption of products from the affected animals.



## 2. The legal basis to support official Bovine Brucellosis free compartment status:

- The CVO decree No. 10/1985 regulates the implementation of the general policy for control of zoonotic diseases starting from notification, testing, implementation of control and elimination measures and following up, (annex 1).
- Articles 125, 129 and 131 of chapter 2 of the agriculture law No. 53/1966 regulate control of zoonotic diseases in Egypt. While, article No. 133 and 135 legalize the importation from other countries. As well, identification and animal registration are regulated by article No. 125, (annex 2).
- Ministerial decree 1329/1999 has been issued for updating ministerial decree No. 1067/1988. It regulates control measures of Brucellosis by assigning only governmental veterinarians to do rapid field tests for Brucellosis for all animals over 6 months (females, males that are used for breeding and artificial insemination) as well as reported aborted cases. Positive field tests' samples are considered suspected to be confirmed by complement fixation test (CFT) laboratory diagnosis in Brucellosis Research Department (BRD), Animal Health Research Institute. Confirmed animal cases are to be isolated, slaughtered and compensated. The herds that record one confirmed positive case must be put under veterinary quarantine with movement restriction for all animals included in this herd. The infected herd is tested every 21 days until 3 successive negative tests then every 6 month, (annex 3).
- As well, ministerial decree No. 1329/1999 determines the compulsory notification for Ministry of Health in regards to implement the required measures toward workers, associates and treatment or disposal of milk in the confirmed positive farms.
- Ministerial decree 1118/2013 regulates the mechanism of compensation of slaughtered positive cases, (annex 4).
- Ministerial decree 102/2017 regulates the vaccination of calves and ewes. The vaccination process regulations were updated by the Ministerial decree No. 102/2017 "female cattle and buffaloes calves have to be vaccinated every 4 to 7 months and tested one year later from vaccination date and those which test positive to be compensated and prohibit vaccinated calves to be slaughtered before 21 days of vaccination date (annex 5).
- The animal importation (bovine and their products) from other countries is regulated according to article 133, chapter 2 of the law No. 53/1966 and law No. 54/1983 which regulates importation of females and uncastrated bulls. Pregnant heifers and non-pregnant heifers for raising purpose should be free from Brucellosis. The imported animals should be tested negative for brucellosis 30 days before shipment accompanied by veterinary sanitary certificates in compliance with article 8.4.14. of the OIE Terrestrial Code. After official quarantine period (33 days) further serological testing by the official veterinary laboratory, (annex 6). Pregnant heifers are not considered negative for Brucellosis unless serologically tested 21 days after parturition or abortion.
- The second part of the first article of law No. 54/ 1983 regulates trading of bovine semen, embryos, "shipment should be accompanied by veterinary sanitary certificate attesting that the exported animals should be free from Brucellosis and upon arrival, the consignment should be tested again by veterinary authorized laboratory and not released from quarantine unless tested negative for Brucellosis".
- Law No. 53/1966 and its amendments by the legal presidential decree No. 13/2014 addressing that the governmental veterinarians are only specialized personnel in diagnostic testing processes for epidemic, infectious and contagious animal diseases including zoonosis and the system for identification and registration of animals, as well as animal movement system, (annex 7).
- In 1988, the ministerial decree No. 1067 was the first ministerial decree dedicated to regulate standards operating procedures for controlling Brucellosis and bovine tuberculosis in details starting from notification process, testing, quarantine, slaughter and compensation, as well as vaccination schedule. The control of the disease is achieved by test, slaughter and sanitary disposal of all positive animals. In regard to suspected diseased cases, consumption of its products is prohibited.
- After 2000, specific measures for prevention and disease control were contained in the structure of "The strategic program of veterinary actions for the surveillance, prevention, control and eradication of animal disease", drawn up by the General Organization of Veterinary Services.



### 3. Tests for surveillance of *Brucellosis*

Egypt has developed a compulsory national program for the control of Brucellosis. The tests provided in the program are in compliance with chapter 3.1.4. Of the *OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (Terrestrial Manual)*, as follows:

1. Serological surveillance (field test): operated by the official veterinarians in the local veterinary services (veterinary directorates and veterinary administrations) by using Buffered Acidified Plate Antigen (BAPA) and Rose Bengal test. The seropositive samples have to be confirmed by CFT in the *OIE Reference Laboratory*, Brucellosis Research Department, Animal Health research Institute (AHRI):
  - a) Over 6 months aged cattle and buffaloes are tested twice a year (6 months interval).
  - b) Heifers of cattle and buffaloes that have aborted or which show clinical signs suspected to be of *Brucella* infection.
2. Anatomopathological examination and laboratory complex (Laboratory test):
  - a) From all the aborted animals, samples from placenta, fetal fluids and blood serum samples from 14 to 21 days after abortion have to be sent to Brucellosis Research Department, Animal Health research Institute (AHRI);
  - b) For confirmation/validation after slaughtering the culture and isolation from infected animals from different related tissues (e.g.; head, mammary, genital lymph nodes and spleen).

### 4. Surveillance of *Brucellosis*:

The bovine brucellosis surveillance program is implemented in compliance with chapters 1.4. and 8.4. of the *OIE Terrestrial Code* and chapter 3.1.4. Of the *OIE Terrestrial Manual*. The General Organization for Veterinary Services is implementing surveillance program for Brucellosis. Brucellosis Research Department (BRD) is specialized in all laboratory activities related to Brucellosis in collaboration and under supervision of Veterinary authority, including:

- Diagnosis (application and validation of different serological tests, isolation and identification of the causative agent on the genus, species and biovar levels).
- Differentiation between infected and vaccinated animals.
- Molecular trace back the sources and origin of isolated *Brucella* micro-organism through the
- Determine the sensitivity and resistance of the isolated *Brucellae* to antibiotics.

The accreditation body for *BRD* is the Egyptian Accreditation Council (**EGAC**) that is accredited by **ILAC- MRA** in complying with the requirements of the **ISO 17025. DBR** in AHRI contributed in the OIE Series on Brucellosis in the Middle East. During the 88<sup>th</sup> OIE General session 2021, DBR has recognized as an *OIE Reference Laboratory* after its official adoption by the general assembly of the OIE members.

#### 4.1 Passive Surveillance (Reporting System):

The passive surveillance is the main system for early detection and early warning. It is based on the fact that all stakeholders must immediately notify any suspicion of any disease to the nearest veterinary clinics (1<sup>st</sup> line). The veterinary clinics have to notify the local veterinary authority and finally up to central Veterinary authority, the General Organization for Veterinary Services (GOVS).

To facilitate and support rapid notification for any disease suspicions and prompt response, the following activities have been implemented:

- Transboundary animal disease information system (TAD info) in epidemiological units which receive all epidemiological data from the source (veterinary clinic records).
- Hotline: GOVS established a hotline for receiving any notifications.



- (GOVS) receives the notification alerts by email or fax as well as, monthly reports which are sent from all governorates indicating the health status in regards to zoonotic diseases.
- Community-based animal health and outreach teams (CAHO team), i.e., groups of trained veterinarians on participatory disease surveillance assigned for detection of diseases. CAHO teams carry out surveillance activities in case of suspicion of endemic notifiable diseases or exotic diseases, based on the following criteria:
  1. Routine work in high-density animal population villages (considering each village as an epidemiological unit)
  2. Selection of high-risk areas for enhanced surveillance based on health records and epidemiological investigations performed in previous visits and on rumours of any health issue in a specific area, village, sub-village or farm.
  3. When communications are received from animal keepers who observed clinical signs or suspect the existence of a notifiable disease.

\*Furthermore, CAHO program is participating in the national activities in order to reduce the incidence of zoonotic diseases by cooperation with the Ministry of Health in the line with one health approach.

Once notification is raised, the veterinary services implement rapid response by deployment of a rapid response team to carry out epidemiological investigations, implement control measures and take samples for laboratory confirmation. Suspected cases in the compartment free from *Brucella* were not reported in the past 12 months.

The predominant *Brucella* strain in Egypt is *Br. melitensis* biovar 3 for which there are no specific clinical signs (storm of abortion) that could be used as an indicator for raising suspicion for the disease. Therefore, the current criteria for raising suspicion are based on:

- Animals that are owned / treated by reported confirmed human cases.
- Any case of abortion in farm/ village with no mechanical aetiology (i.e; suspected infectious disease).
- Some other nonspecific clinical signs that could indicate the *Brucella* infection (low production and anestrus).

In case of suspicion according to the above-mentioned criteria, a field test is implemented. If the result is positive, a sample should be taken for confirmation by laboratory diagnosis in the AHRI (the OIE reference laboratory). If the result is confirmed positive, the emergency slaughter with hygienic measures have been implemented to the confirmed case and the control measures with active surveillance are implemented as mentioned in point 4.2. and point 5.

In case of unexpected change in clinical signs (i.e.; introduction of a new *brucella* strain) that might cause a specific clinical sign, storm of abortion in last stage of pregnancy' 3rd semester. In this situation the criteria for raising suspicion are:

- Probable case: clinical signs.
- Suspected case: clinical signs + positive field test.
- Confirmed case: sample from the animal of positive field test has confirmed by laboratory diagnosis.

#### **4.2 Risk- based Surveillance:**

Risk-based surveillance (RBS) is implemented as a national program for surveillance for Brucellosis in compliance with the Article 1.4.4. of the *OIE Terrestrial Code*. The main objective for risk-based surveillance (RBS) of Brucellosis is to control the disease and to mitigate the risk of transmission of Brucellosis to human. The ministerial decree 1329/1999 regulates this national program that depends on sero-testing and slaughtering of the positive reactor animals.

The main criteria for RBS:

- The total number of animals that should be tested per year is estimated by 10% of the total high-risk animals' population (around 350 thousand head/year).
- N.B: Total number of female animals is estimated as cattle (1.6 million head), buffaloes (0.9 million), sheep (0.7 million), goats (0.3 million).



- The surveillance is targeted and implemented in both farms and backyards sectors on the following bases:
  - The at-risk geographical areas that have high prevalence of Brucellosis (that are recorded from the previous results of different types of surveillance).
  - The risky geographical areas that have high density animal population in particular the mixed backyard population.
  - At risk animals:
    - Animal species; cattle, water buffaloes, sheep and goat;
    - Age category over 6-month-old;
    - Animal sex: Female and males that are used in natural mating or artificial insemination.

According to the laboratory results, the *Br. melitensis* biovar-3 is the predominant serotype in Egypt followed by *Br. abortus*.

**Total number and confirmed positive animals tested for Brucellosis in the RBS program during the past 3 years**

<b>Total tested and confirmed positive animal for Brucellosis 2018-2019-2020</b>										
Year	Cow		Water Buffalo		Sheep		Goat		Total	
	Total tested	No. of Brucella confirmed positive animals	Total tested	No. of Brucella confirmed positive animals	Total tested	No. of Brucella confirmed positive animals	Total tested	No. of Brucella confirmed positive animals	Total tested	No. of Brucella confirmed positive animals
2018	264552	598	67096	103	37657	407	12541	239	381846	1347
2019	228781	705	52980	126	38388	253	12751	70	332900	1154
2020	228604	437	47605	74	40624	176	12344	58	329177	745

## 5. Measures implemented to prevent and control of Brucellosis in Egypt

### 5.1. Vaccination:

Vaccination against Bovine Brucellosis is facultative according to ministerial decree 102/2017 and in compliance with the chapter 3.1.4. of the *OIE terrestrial Manual*. The national vaccination program summarized as:

- Vaccination of 4 – 7 months old female cattle and buffaloes using *Br. abortus* strain 19.
- Vaccination of 4 – 7 months old female sheep and goats using *Br. melitensis* strain Rev.1.
- The rough *B. abortus* strain RB-51 vaccine is used by some farms under direct supervision of veterinary authority.
- All vaccinated animals are tested after one year from the date of vaccination.

### 5.2. Biosecurity:

Biosecurity plan for dairy compartments:

Biosecurity plan is promoted, implemented and supervised by the GOVS to assist producers to develop practical strategies to protect their herds from diseases which can enter unseen and unexpectedly. The objective of such plan is to implement and document the methods of disease outbreaks prevention, regularly monitoring animals for any disease signs and being prepared to respond when an outbreak occurs.



The Biosecurity plan is attached in ([annex 8](#)). The main principles of the biosecurity plan are as follows:

- All Farm data should be identified and be clear.
- The designated biosecurity coordinator could be an employee or farm family member.
- The farm employees and workers are trained and evaluated annually for their knowledge and ability to implement biosecurity procedures.
- Implementation of Farm security procedures.
- SOPs for entering and leaving restricted access areas.
- Cleaning and disinfection procedures.
- Visitor Procedures.
- Line of Separation Access Points.
- Entry Biosecurity Procedures.
- Cleaning and Disinfection Stations.
- Sanitation – Cleaning and Disinfection.
- General Management Strategies.
- Animals' general recommendations.
- Recommendation for ensuring safe feed and water.
- Waste Management.
- Pest Control.
- Management of dead animal.
- Product Safety.

The official veterinarians are responsible for evaluation of the implemented biosecurity plan in the farm. The assessment is based on a specific sheet as attached in ([annex 9](#)).

### **5.3. Regulation for Importation:**

The importation of bovine species and their products is regulated according to article 133 of chapter 2 of the agricultural law No. 53/1966 and law No. 54/1983 which regulates importation of females, uncastrated bulls, pregnant and non-pregnant heifers for breeding or rearing purpose.

In compliance with article 8.4.14. of the *OIE Terrestrial Code*, the imported animal should be free from Brucellosis. The imported animals should be accompanied by veterinary sanitary certificates attesting that the imported animals were tested negative for brucellosis and isolated for 30 days before shipment.

After arrival, the imported animals are officially quarantined for 33 days for further serological testing by the official veterinary laboratory.

## **6. Implementation of “Compartment free from infection with *Brucella* with Vaccination” program in Dairy Cattle Farms in Egypt**

In compliance with article 8.4.11 of the *OIE Terrestrial Code* GOVS has implemented “Compartment Free from infection with *Brucella* with Vaccination” program in dairy cattle farms. Egypt is currently exporting dairy products to other countries. The program “Compartment Free from infection with *Brucella* with Vaccination” reinforces the international trade of Egyptian dairy product.

### **6.1. Requirement for joining program:**

The compartment must meet the following requirements:

1. The Facility/Farm has not been reported Brucellosis for at least the past year.
2. Two field tests have been performed to all herds within the compartment with confirmed negative results on all sexually mature animals: the first test is performed not before 3 months after the slaughter of the last confirmed positive case and the second test at an interval of 6 months.
3. Animals showing clinical signs consistent with infection with *Brucella* such as abortions have been subjected to the necessary diagnostic tests with confirmed negative results.
4. Compartments' Herds should have an integrated administrative and technical system with records of all activities within the farm and apply all the requirements of biosecurity and biosafety in detail.



5. Farms (compartment) should comply with all regulations for the prevention and control of Brucellosis that have been issued by the concerned governmental authorities.
6. Commitment with transparency, especially in cooperation with the competent veterinary authority (GOVS) in concerning with examination, sampling and rapid reporting for any suspected cases.
7. Full compliance with the directives issued by the follow-up committees (General Organization for Veterinary Services and Animal Health Research Institute).
8. The Farms are obliged to notify the official concerned parties with the herd movement from and to the area in advance.

#### **6.2. Surveillance:**

The implementation of the “compartment free from brucellosis with vaccination” program is carried out in dairy cattle farms in Egypt in the line of the national surveillance program to facilitate international trade of its products.

Two tests have been performed to all herds in the joined compartment with confirmed negative results on all sexually mature animals: the first test is performed not before 3 months after the slaughter of the last confirmed positive case and the second test at an interval of 6 months.

GOVS has certified 14 dairy cattle compartments that including 41 dairy cattle herds in this program, ([annex 10 a & b](#)). All these compartments are only having dairy cattle herds. All herds in all farms are free from brucellosis with vaccination by 100%.

#### **6.3. Infrastructural factor:**

Biosecurity requirements are among the most important steps to prevent the disease. The farms that are participated in the compartment free program were visited to evaluate the infrastructure and the overall implementation of the biosecurity.

#### **6.4. Monitoring and follow-up system:**

Field visits are carried out by the concerned veterinary officials. The Farm are visited either priorly informed or not.

#### **6.5. Movement control:**

The animal movement from/to the compartment is under complete supervision of the veterinary authority.

All the newly introduced animals to the compartment free from Brucellosis, should come from a certified farms that are free from Brucella. The movement of animals from the compartment is allowed based on the certification that the compartment of origin is free from Brucella according to its testing under complete supervision from the local veterinary authority (2 tests for Brucella/ year with a six-month interval. The 2 tests should be negative for Brucella).

Regarding introduction of semen to the compartment free from Brucellosis, the semen should be imported from abroad under complete supervision from the veterinary authority and according to the OIE health standards, or the semen which is locally produced.

The locally produced semen is produced in a national governmental center that are completely operated and supervised by the general administration of animal reproduction and artificial insemination in GOVS (General Organization for Veterinary Services). All the donor males in the aforementioned centers are tested 2 times per year (with six months interval) and are free from Brucella. The locally produced semen is tested for contaminations and infections including Brucellosis in the Animal Reproduction Research Institute which is the national laboratory in charge of lab diagnosis and researches of animal reproduction.



## 7. Conclusions

### Considering that:

- Brucellosis is a notifiable disease in the entire country.
- The control program of the Brucellosis was started in 1981.
- Vaccinated animals are permanently identified.
- The surveillance program revealed no evidence of infection with *Brucella* with vaccination in the 41 dairy cattle herds within in 14 dairy cattle compartments during the past 3 years.
- Animals showing clinical signs consistent with infection with Brucella such as abortions have been subjected to the necessary diagnostic tests with negative results.
- For at least the past year, there has been no evidence of infection with Brucella in other herds or flocks of the same compartment, or measures have been implemented to prevent any transmission of the infection with Brucella from these other herds or flocks.

**The OIE Delegate of Egypt declares that 14 dairy cattle compartments having 41 dairy cattle herds comply with the requirements for freedom from infection with Brucella in Bovids with vaccination as of 1 January 2021, in compliance with the provisions of Chapters 1.6, 4.4, 4.5, and 8.4. of the OIE Terrestrial Code.**



**I, the undersigned, Abdelhakim Ali**  
**Delegate of Egypt, Chairman of General Organization for Veterinary Services,**  
**to the World Organization for Animal Health (OIE), takes responsibility for the self-**  
**declaration of compartment free from infection with Brucella with vaccination.**

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Drawn up on 5 / 8 /2021  
Signature of the Delegate:



### Annex 10-a:

Farms that have joined "Compartment Free from infection with Brucella with Vaccination" Program

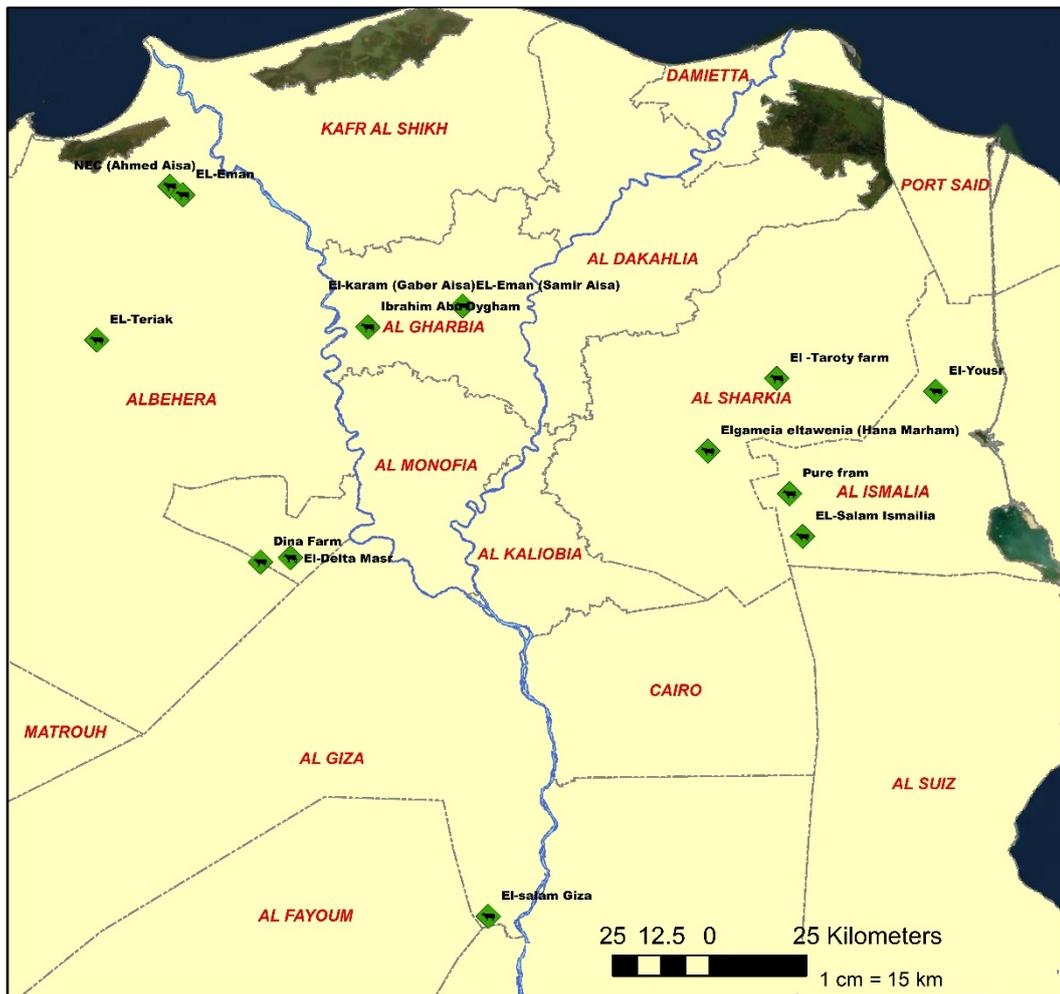
#	Name of farm/ compartment	Total No. of Cattle herds per each compartment	No. of Brucellosis tested Cattle herds	Locality	Number of tested females over 6 months*		Results of field test For 100% of the animal per each herd
					2019	2020	
Dina Farm		9	9	El Giza Governorate	2019	8499	Negative
					2020	7799	
					2021	8229	
El-Yousr		2	2	EL Ismaylaia Governorate	2019	796	
					2020	800	
					2021	982	
EL-Salam		2	2	EL Ismaylaia Governorate	2019	457	
					2020	392	
					2021	335	
EL-Teriak		2	2	EL Behira Governorate	2019	200	
					2020	300	
					2021	400	
Ibrahim Abu Dygham		2	2	El Gharbia Governorate	2019	76	
					2020	90	
					2021	59	
El-salam		3	3	El GIZA Governorate	2019	1200	
					2020	1090	
					2021	1100	
EL-Eman (Samir Aisa)		2	2	El Gharbia Governorate	2019	80	
					2020	106	
					2021	108	
El -Taroty farm		2	2	El Sharqia Governorate	2019	132	
					2020	150	
					2021	122	
Elgameia eltawenia (Hana Marham)		3	3	El Sharqia Governorate	2019	520	
					2020	523	
					2021	497	
Pure fram		3	3	EL Ismaylaia Governorate	2019	373	
					2020	461	
					2021	297	
NEC (Ahmed Aisa)		3	3	EL Behira Governorate	2019	304	
					2020	366	
					2021	338	
El-Delta Masr		4	4	El Menoufia Governorate	2019	1320	
					2020	1428	
					2021	1206	
El-karam (Gaber Aisa)		2	2	El Gharbia Governorate	9. 2020	10. 87	
					2021	105	
EL-Eman		2	2	EL Behira Governorate	2020	41	
					2021	91	

\*Number of tested females over 6 months: the mentioned tested number per each year is also the total population of females over 6 months in this year (the test is applied for 100% of the total population).



**Annex 10-b:**

**EGYPT**  
**Farm free from infection with Brucella with vaccination**



**Farm free from infection with Brucella with vaccination**

◆ Free Dairy Cattle Farm



Arab Republic of Egypt  
 Ministry of Agriculture and Land Reclamation  
 General Organization for Veterinary Services  
 A.H.F - Technical Office

