

WELCOME

ICAC delegates



- **COTTON MAINTAINING
RESEARCH SECTION**



Maintaining the cotton varieties in Egypt

The concept of “maintaining”

maintaining is the ability to keep out the variety from factors that cause genetic changes, “deterioration”, so that the standard characters of such variety should be kept stable for a long time.

Maintaining the cotton varieties in Egypt

main approaches:

1. Providing the cotton area for each variety annually by new waves of, genetically pure, cottonseed stocks.
2. Implementation of procedures for handling cottonseed through the ministry of Agriculture to control and maintain the varietal purification in Egypt.

Maintaining the cotton varieties in Egypt

cottonseed stocks; are the breeder seed, foundation seed, registered seed and the certified seeds that have the standard characteristics of the cotton variety, which are produced and propagated through the maintaining prgramme.

Breeding for maintaining cotton varieties

The maintaining programs:

Are breeding programs assigned for maintaining the Egyptian cotton varieties by producing and renewing cottonseed stocks. These programs are carried out by CMRS, Cotton Research Institute, ARC .

EGYPTIAN COTTON MAP

Sakha R.S.(5 M.P.)

Gemmeza R.S.

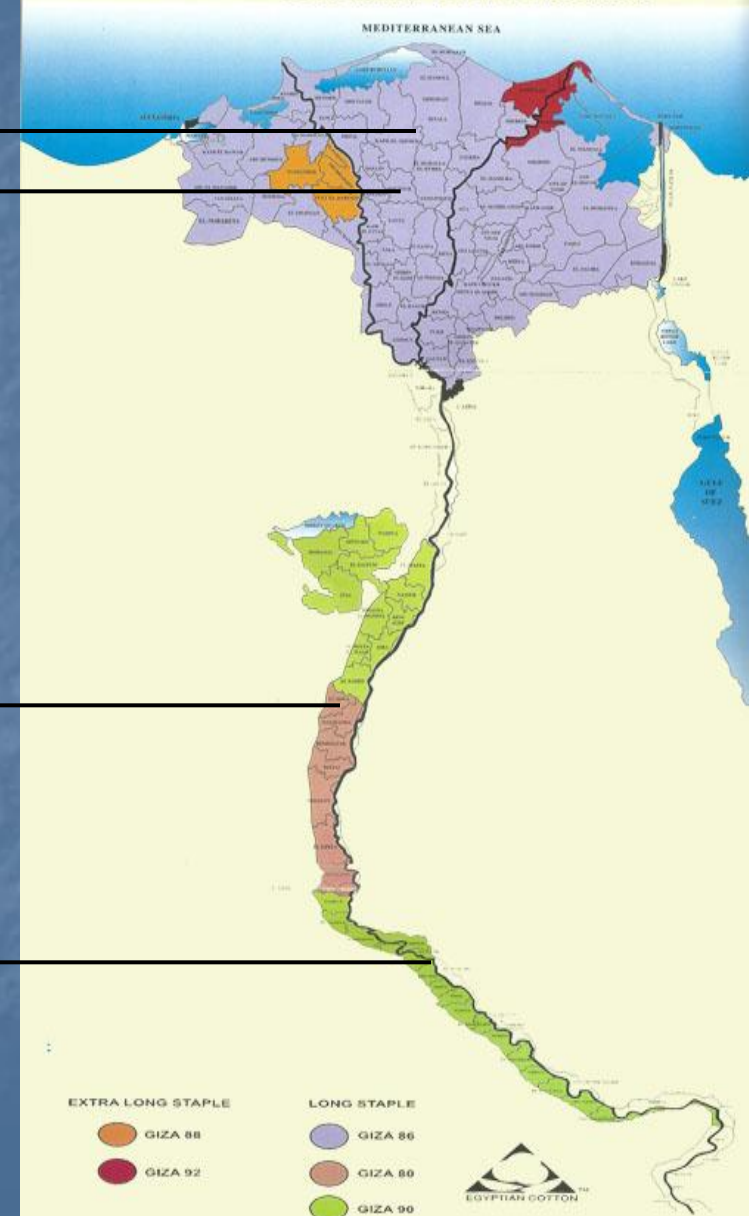
Sids R.S.

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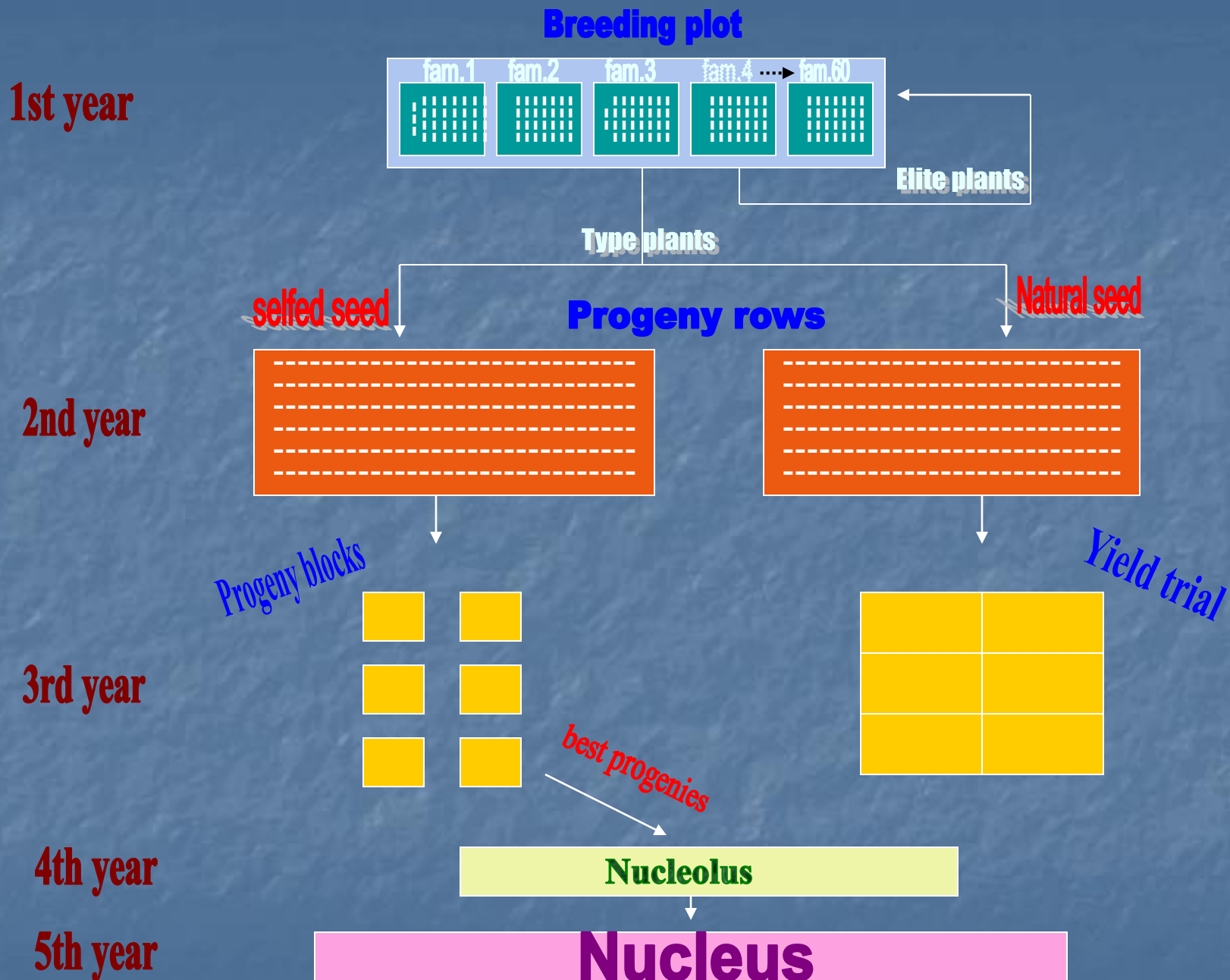


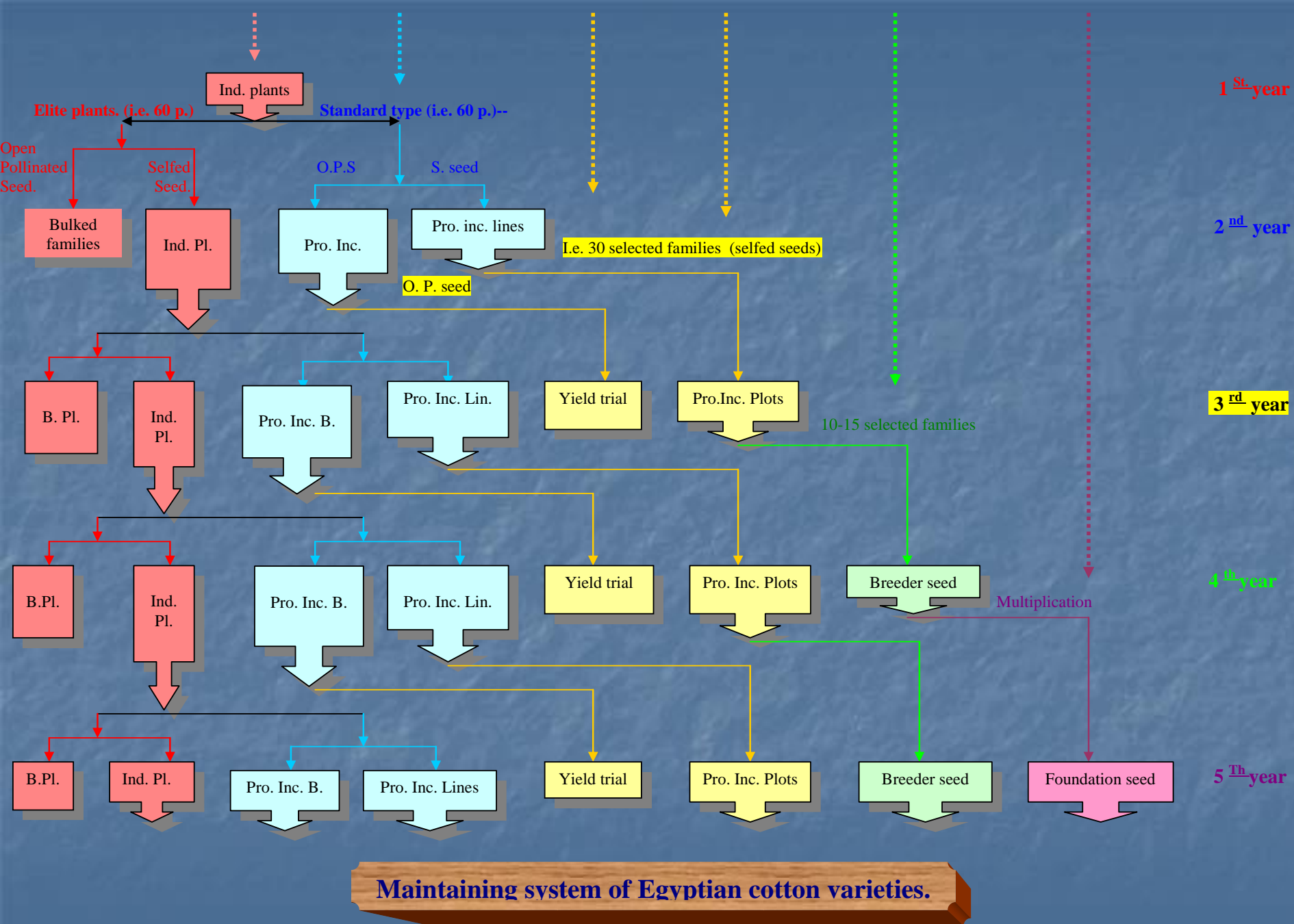
**Alexandria Cotton
Exporters' Association**
COTTON MAP 2013 / 2014 SEASON



The experimental plots of the recent maintaining program

- **Breeding plot.**
- **Progeny rows (A increase).**
- **Progeny blocks (B increase).**
- **Yield trial.**
- **Breeder seed (Nucleolus).**
- **Foundation seed (nucleus).**







Self pollinated individual plants



Bulk of open pollinated plants

Classification of cotton seed stocks in Egypt

- **Breeder seed.**
- **Foundation seed**
- **Registered seed.**
- **Certified seed**

1-Breeder seeds

- **A small amount of seed (5-10 Ardebs).**
- **BS are produced under breeder's control.**
- **They are cultivated in the governmental farms and not allowed for sell.**

2-**Foundation seeds**

- The name of the cottonseed stocks is taken at this stage of propagation.
- FS are propagated under the supervision of CRI and CASP.
- they have got higher level of purification.
- they are propagated to produce registered seed.
- Their lots are marked by white label.

3- Registered seeds

- **RS are propagated from foundation seeds in a large scale.**
- **They have got an acceptable degree of purification.**
- **Their lots are marked by blue labels.**

4- Certified seed

- **CS are grown in a larger scale that covered the rest of the concentration area.**
- **They have got a reasonable percent of purification.**
- **Their lots are marked by red labels.**

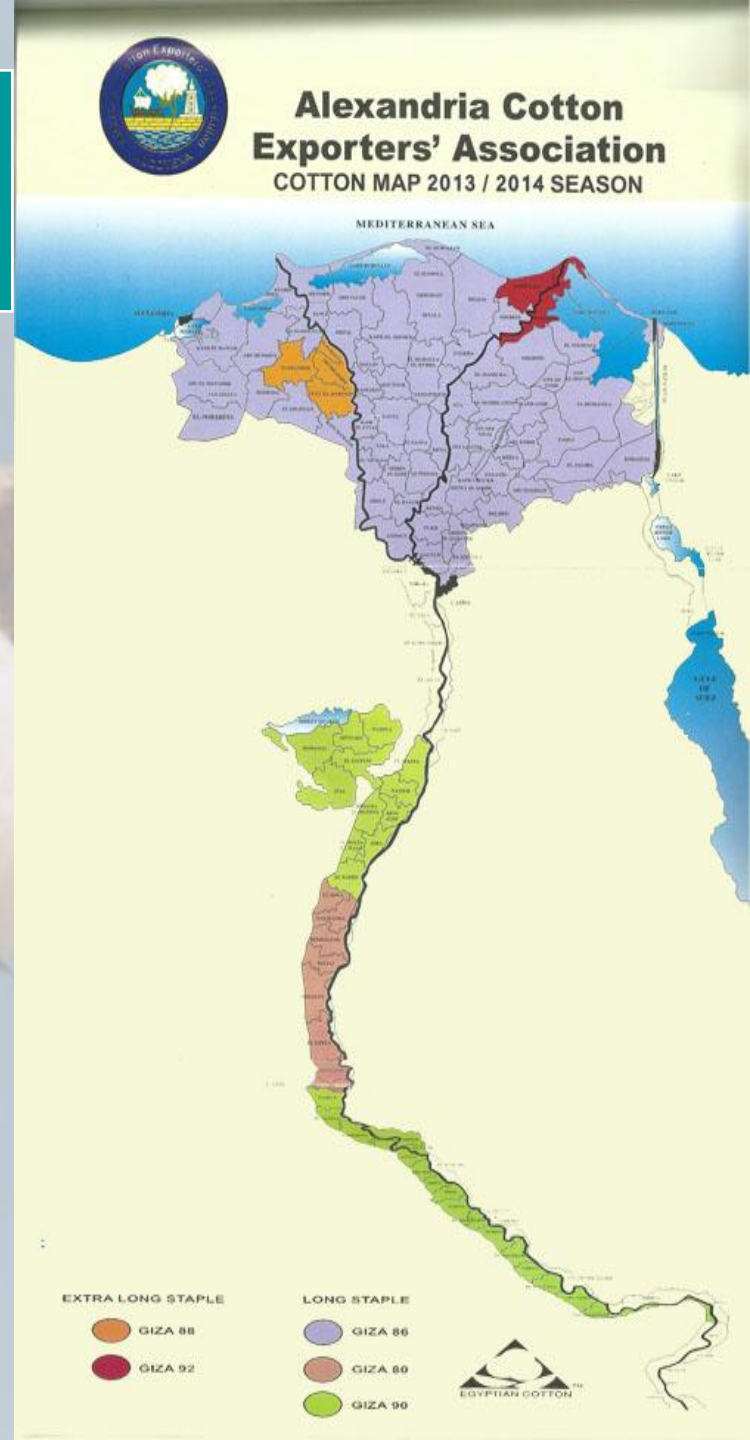
2. Implementation of the governmental decrees to control and maintain the varietal purification in Egypt

The Main Measures

- **Single-variety zoning system.**
- **Seed certification system.**

I- Single-Variety Zoning System

- This system started in 1958/1959 season; it means the allocation of certain varieties to separated areas best suited to their development.
- The area of each zone of a variety is annually determined by a **ministerial decree** according to some considerations.

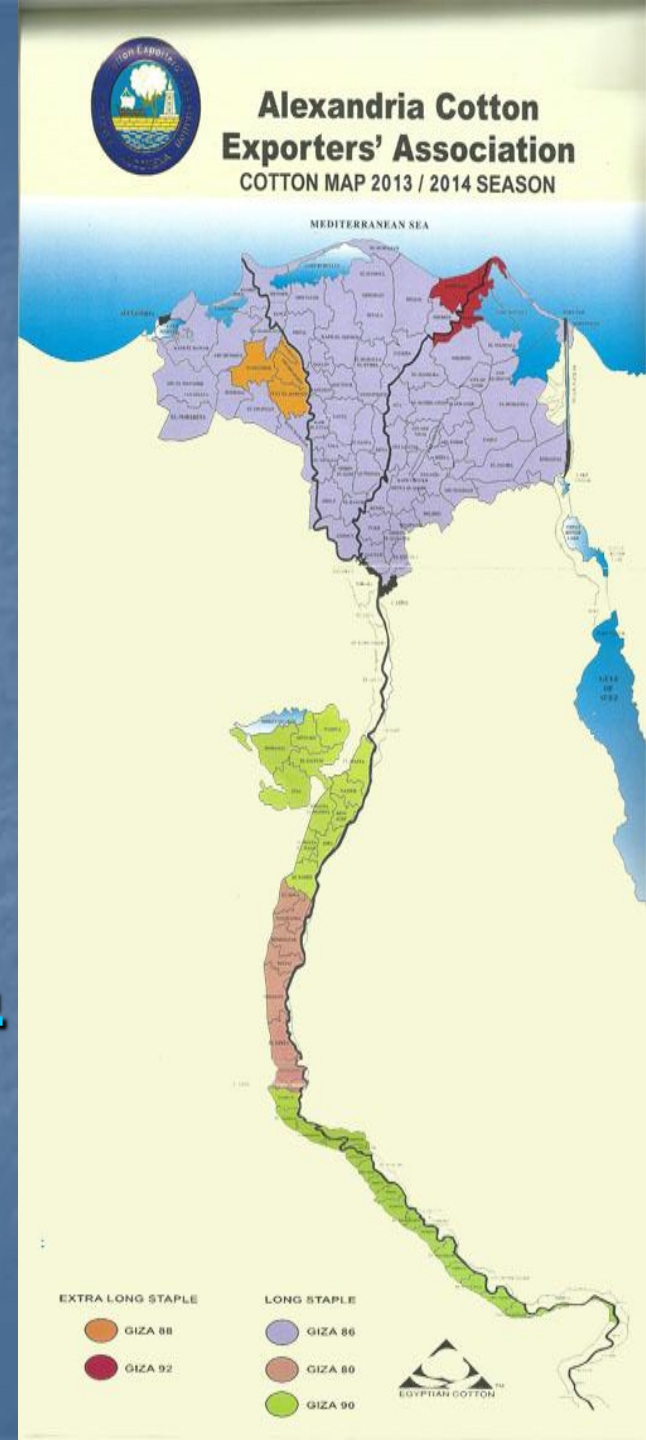


Consideration when choosing the CA

- **Export demands, local consumption**
- **Adaptability of the variety to a specific region.**
- **availability of pure cottonseed lots.**

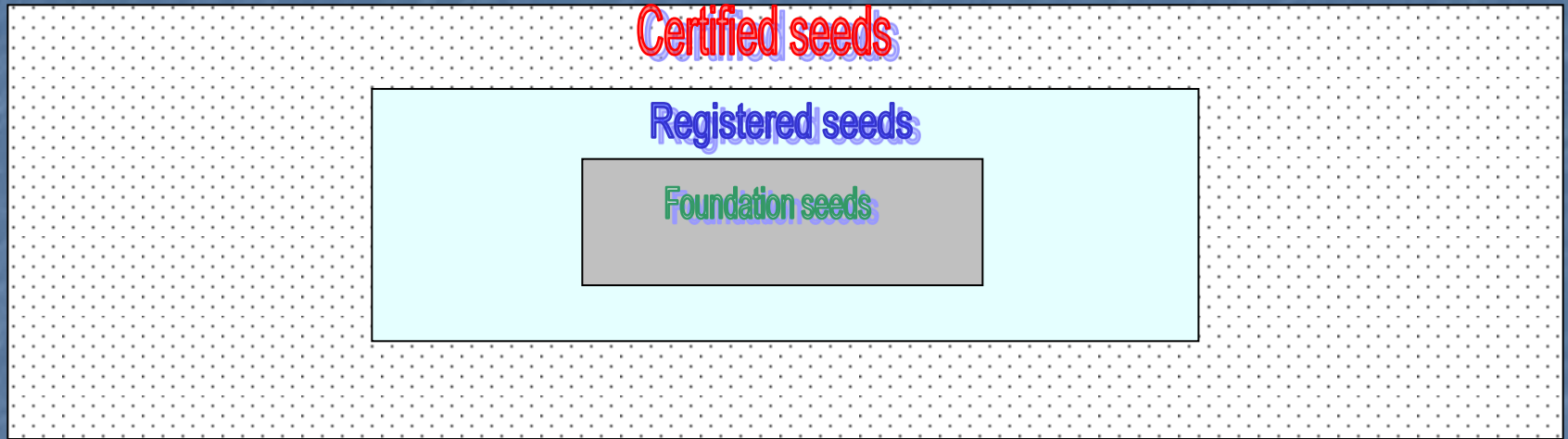
Concentration areas

- Annual declaration (Ministerial decree) of the propagation areas.
- Isolation distances.
- Concentric rings system.



Concentric Rings System

2014 season



2015 season



Diagram Shows The Propagation System At The Concentration Areas.

Roguing off-type cotton plants

committee of:

1. Cotton Research Institute (CRI).
2. Central Administration for Seed Production (CASP).
3. Cotton Improvement Fund (CIF).

patterns of off-type plants in Egypt.

- **Upland cotton plants.**
- **Hybrids of Upland plants.**
- **Other varieties**
- **Off types plants**

Field inspection

- **Evaluation roguing and production case of the propagated areas**
- **Yield estimation**
- **Detect the acceptable fields**

II- Seed certification system

1. “One gin – one variety”

- Introduced in 1958 (ministerial decree).**
- Separation of the cottonseed lots.**
- Inspection the gin-machine parts.**
- Cleaning seeds mechanically from impurities.**
- Treatment of the cottonseed stocks by heat.**

2. Seed examination

- Samples of seeds are drawn from each lot to be sent to CASC for testing:
- Varietals' purity: free of off-type seeds at 99.5%
- Cleanness%: percentage of the undesirable materials from cottonseeds. etc., broken seeds, aborted ovules or any other impurities
- Germination% rates : not less than 72%.
- Pure germination seeds value%. Not less than 70%
- Phytosanitary exam.

3. Spinning test

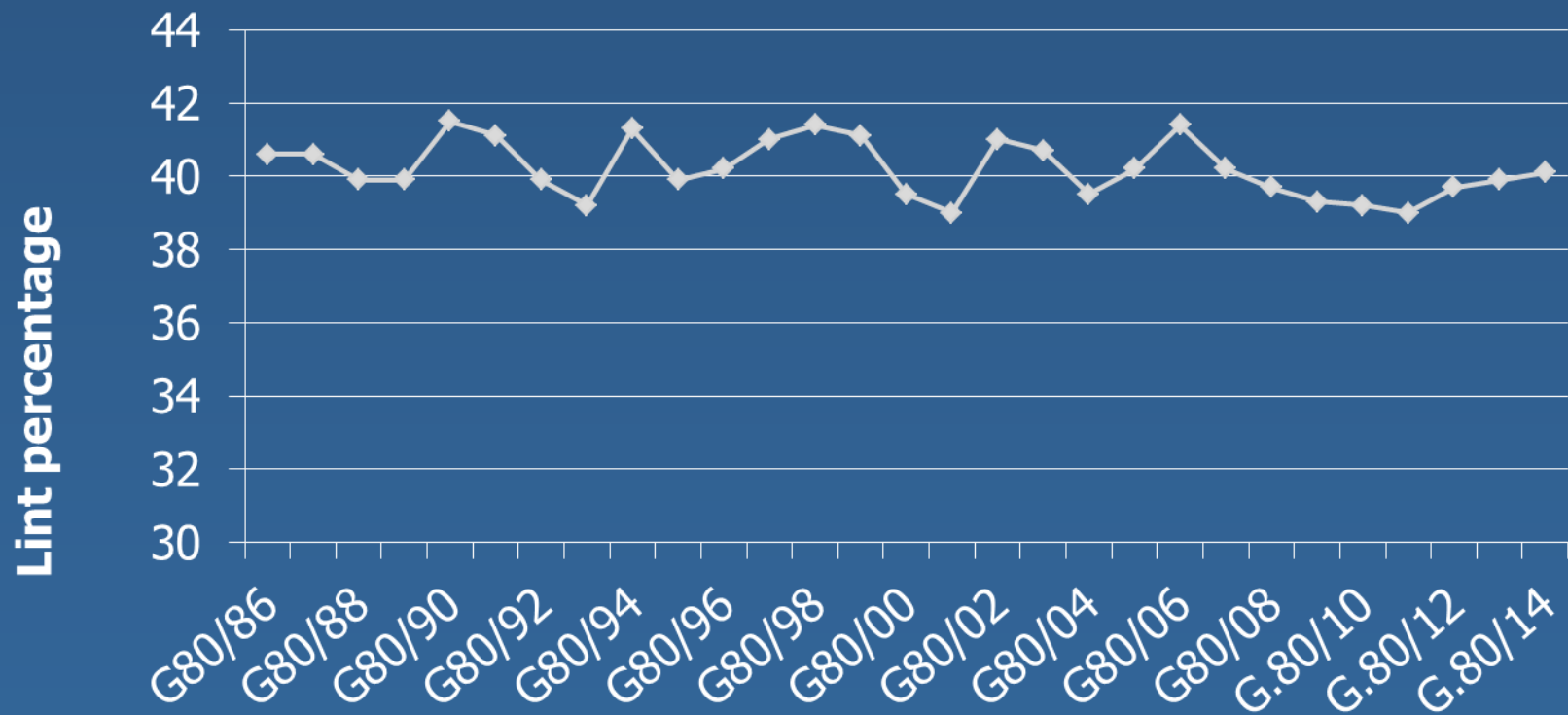
- **Estimation of the yarn strength property of each acceptable seed lot, should meet the standard level of the variety so as to final acceptance the cottonseed lot for further sowing and to keep the high quality of the growing Egyptian cotton varieties.**

4-Preparing the cottonseed for cultivation next season

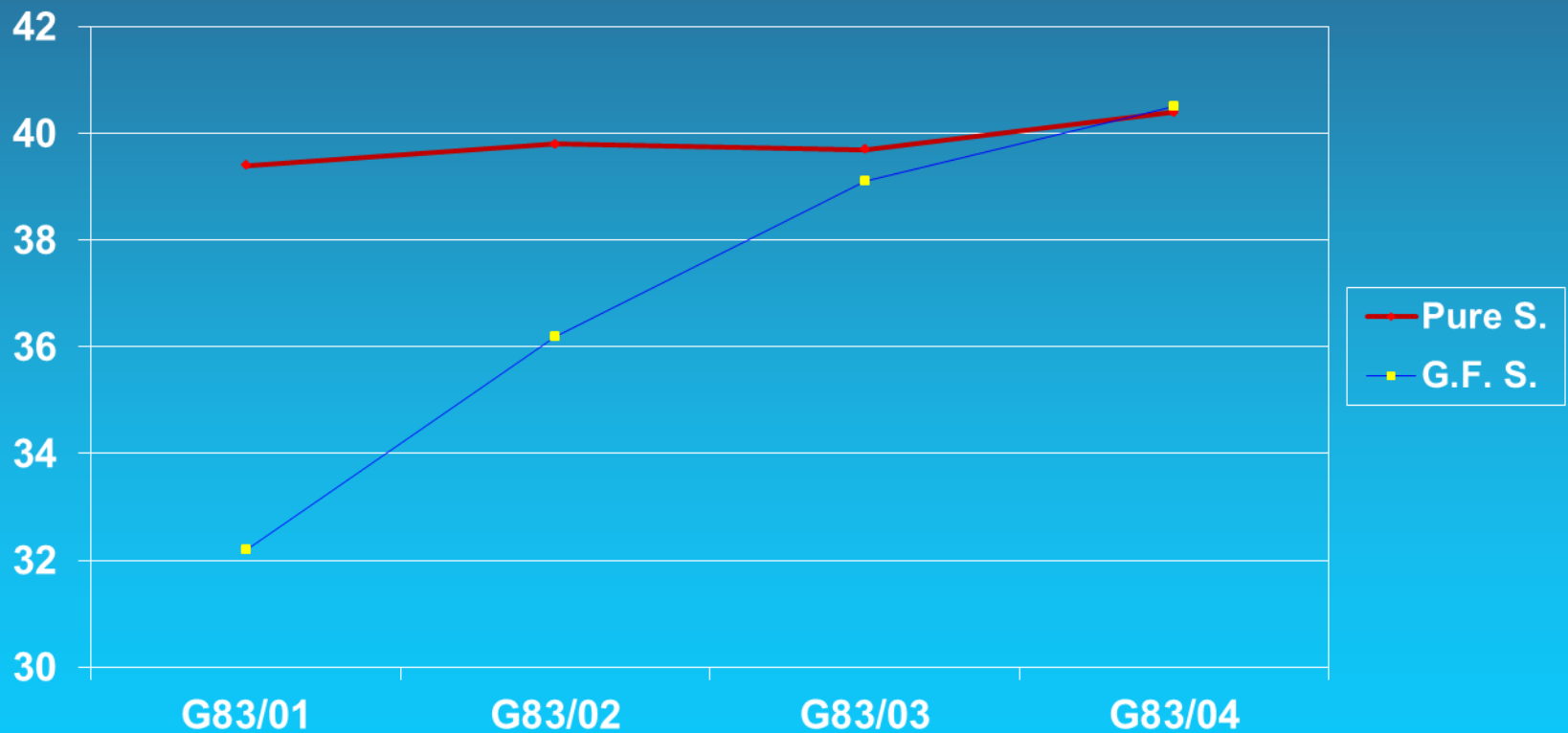
- Preparing the accepted and certificated cottonseed lots.
- Delinting, sorting & cleaning
- Treatments & coating
- Packaging into 25-30 Kg/fed.
- Data registration.
- Distribution the cottonseed packages to their determinant location according to the ministerial decree.

Evaluation the purification of the cottonseed stocks

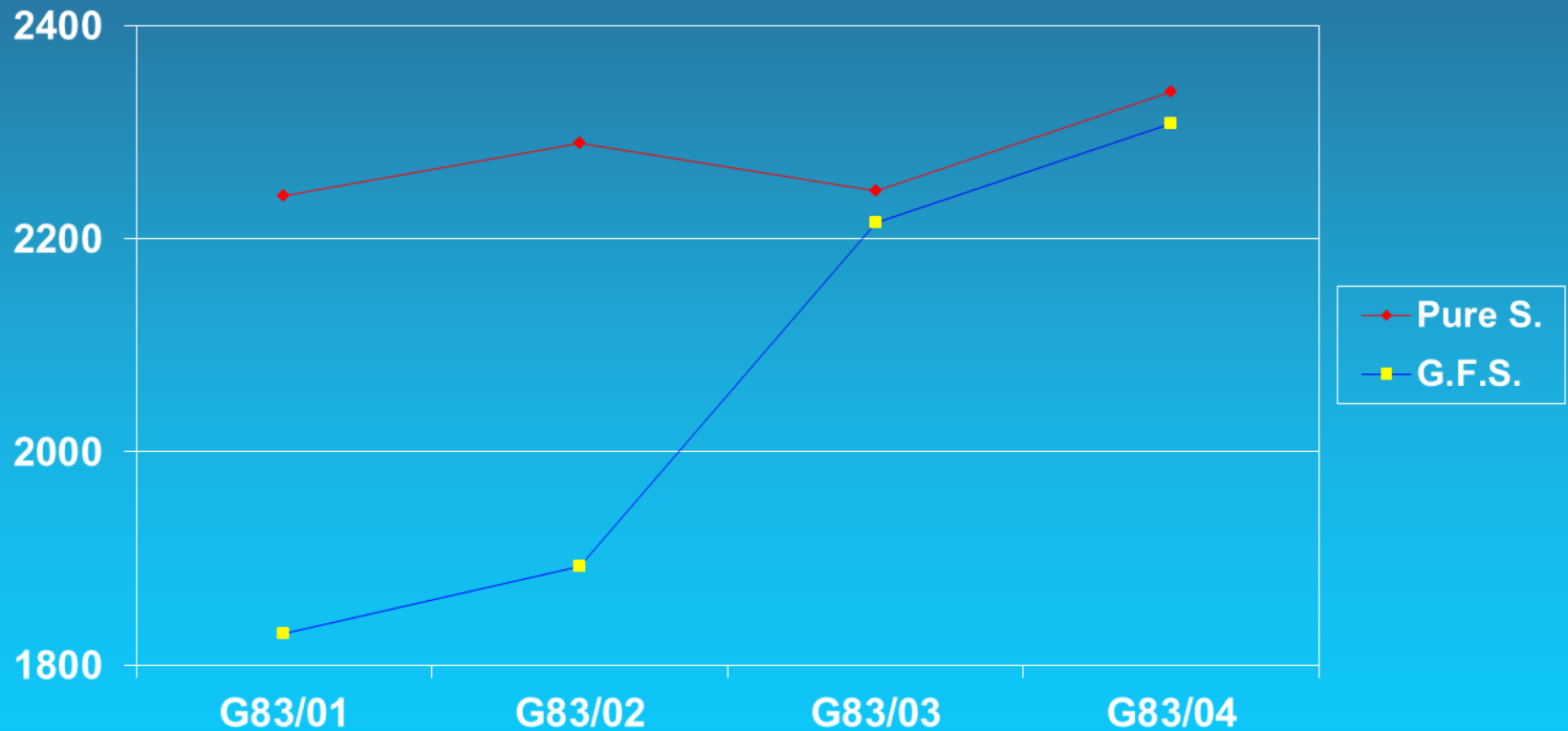
Lint percentage in successive pure strains of G. 80



Comparing the lint percentage trait of pure strains and the corresponding general farm strains (deteriorated case)



Comparing the yarn strength trait of pure strain comparing with the corresponding general farm strain (deteriorated case)



Conclusion

- **Maintaining the standard characters of the old varieties for a long time;**
 - G.45 (more than 55 years)**
 - G.70 (more than 40 years)**
 - G.80 (more than 30 years)**



A painting of the Great Pyramids of Giza at sunset. The sky is a warm, golden yellow with soft clouds. The pyramids are silhouetted against the bright sky. In the foreground, a caravan of camels and people is gathered near a small body of water, possibly a oasis. Palm trees are scattered on the right side of the scene. The overall mood is peaceful and nostalgic.

**Thank you for all
& Best wishes**

Dr. Gaber Hemaïda