



Algeria

Kerboua M., Benbadis A., Assabah A.

in

D'Onghia A.M. (ed.), Menini U. (ed.), Martelli G.P. (ed.).

Improvement of the citrus sector by the setting up of the common conservation strategies
for the free exchange of healthy citrus genetic resources

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Algeria

Project team

- Mr. M. KERBOUA, National Project Representative, Institut Technique d'Arboriculture Fruitière (ITAF) Boufarik
- Mr A. BENBADIS, ITAF - Boufarik
- Mr A. ASSABAH, Centre National de la Certification et du Contrôle des plants (CNCC) Alger

Importance of citriculture

The new citriculture programme belonging to the, «Plan National de Développement Agricole (PNDA» preview to increase the citrus area from 45.040 ha to 65.000 ha, and to reach a total production of 550.000 T.

Citrus distribution map



Citrus varieties

| Species/Varieties | Cultivated areas | Area (Ha) | Yield/Ha (q) |
|---------------------------|------------------------|--------------|--------------|
| Oranges | | | |
| - Common, Valencia | North centre (MITIDJA) | 3 500 | 120 |
| - Navel | North centre (MITIDJA) | 15 780 | 110 |
| - Blood | North centre (MITIDJA) | 7 500 | - |
| - Acidless | East (BOUNAMOUSSA) | - | - |
| Mandarins & Mandarin-like | East (SAF SAF) | 13 950 | 90 |
| Mandarin hybrids | West (HABRA, MINA) | - | - |
| Lemons | West (HABRA, MINA) | 3 000 | 120 |
| Grapefruit | West (HABRA, MINA) | 150 | 150 |
| Others | - | 3 020 | 110 |
| | Totale | 46900 | |

Citrus phytosanitary problems

| Pathogens | Diseases | References | |
|-----------------------------------|-------------------------------|------------|------------------------------------|
| Virus and virus-like | | | |
| CVV | Inf. Variegation/Crinkly leaf | X | (Bové, 1995) |
| CiLRV | Leaf rugose | X | (Bové, 1995) |
| CPsV | Psorosis | X | (ITAF, Report 1979); (Bové, 1995) |
| SDV | Satsuma dwarf | | |
| CTLV | Tatterleaf/Citrangle stunt | | |
| CTV | Tristeza | X | (ITAF Report, 2001); (Bové, 1995) |
| CVEV | Vein enation/Woody gall | | |
| | Concave gum | X | (ITAF, Report, 1979); (Bové, 1995) |
| | Cristacortis | X | (ITAF, Report 1982); (Bové, 1995) |
| | Impietratura | | |
| CEVd | Exocortis | X | (ITAF, Report 1980); (Bové, 1995) |
| CCaVd | Cachexia | X | (ITAF, Report 1985); (Bové, 1995) |
| CVds | Citrus viroids | | |
| | Chlorotic dwarf disease | | |
| | Gummy bark | X | (Bové, 1995) |
| Fungus | | | |
| <i>Phytophtora sp</i> | Phytophtora gummosis | X | (ITAF Report 1985); (Bové, 1995) |
| <i>Fusarium sp, Roselinia sp</i> | Root rot | | |
| <i>Phoma tracheiphila</i> | Mal secco | X | (Bové, 1995) |
| Bacteria and Bacteria-like | | | |
| <i>Pseudomonas syringae</i> | Blast and Black pit | | |
| <i>X. axonopodis pv citri</i> | Citrus canker | | |
| <i>Candidatus L. asiaticus</i> | | | |
| <i>Candidatus L. africanum</i> | Greening | | |
| Nematodes | | | |
| <i>Tylenchulus semipenetrans</i> | | X | (Bové, 1995) |
| <i>Pratylenchus vulnus</i> | | | |
| Phytoplasmas | | | |
| <i>Spiroplasma citri</i> | Stubborn | X | (ITAF Report 1985); (Bové, 1995) |
| | Witches' broom | | |

X= present in the country

Citrus germplasm

| Location | Date of creation | N° of accessions* | Characterization | | |
|---------------------------|------------------|-------------------|------------------|-----------------|----------|
| | | | morphological | tureens-to-type | sanitary |
| National | | | | | |
| ITAF Station -Boufarik | 1963 | 168 | Partial | Partial | - |
| Regional | | | | | |
| ITAF Station - Beni Tamou | 1978 | 46 | X | X | - |

Citrus germplasm list

| Varieties/Species | |
|------------------------------------|------------------------|
| Mandarins and mandarin-like | |
| Clementine 36 | Shamouti 85 |
| Clementine 38 | Mme Vinous |
| Clementine 61 | Hamlin |
| Clementine 62 | Cine apple |
| Clementine 63 | Cears Brown |
| Clementine 64 | Valencia Late 248 |
| Clementine 71 | Valencia Late 247 |
| Clementine 36 | Valencia Late Campbell |
| Clementine38 | Valencia Late Olinda |
| Clementine 61 | Moro 24 |
| Clementine 62 | Washington Navel 141 |
| Clementine 63 | W.N. 39 |
| Clementine 64 | W.N. 205 |
| Clementine 71 | W.N. 251 |
| Clementine 2749 | Newhall Q8 |
| Fremont 01 | Newhall Q1 |
| Iwagtoo 01 | Newhall N4 |
| Page 01 | Newhall N5 |
| Pixie 01 | Newhall |
| Ortanique 01 | Navelina |
| Avana Tardivo 01 | Navelate |
| Avana Apirene 01 | |
| Ananas 01 | |
| Murcott 01 | |
| Cearson 01 | |
| Fairchild 01 | |
| Commune 118 | |
| Carval Hal 01 | |
| Kara 165 | |
| Kinnow 26 | |
| Satsuma.S ^t Jean 108 | |
| Satsuma Kowano 167 | |
| Tangelo Nova 01 | |
| Sweet oranges | |
| D.F. Améliorée B7 | Marsh |
| D.F. Améliorée A5 | Shambard |
| D.F. Améliorée E1 | Red Blush |
| D.F. Améliorée E2 | Thompson |
| D.F. Améliorée E3 | |
| Thomson Navel 215 | |
| Tarocco 23 | |
| Tarocco d'Italie 57 | |
| Grapefruits | |
| | Eureka 4S |
| | Lisbone 16 |
| | Lisbone 6 |
| | Feminello |
| | Santa Teresa |
| Lemons and lemon-like | |
| | |
| | |
| | |
| | |
| | |
| Lime | |
| | Tahiti |

Citrus programmes

| Programmes | Proposed | Running | Legislation |
|---|--|---------------------|------------------|
| Clonal and sanitary selection | Sanitary and clonal selection of 13 varieties | 1998 – 2004 by ITAF | |
| Monitoring, eradication and control of quarantine pests | DPVCT programme Monitoring of quarantine diseases (CTV, <i>S. citri</i>) | 2000 - present | |
| Certification | Certification of ITAF plots | 1993 - present | 93/284, 23/11/93 |
| Quarantine | | | National law |
| Others | Studies on the varietal collection | 1999 | |

DPVCT: Ministère de l'Agriculture Direction de la Protection des Végétaux et de Contrôle Technique

ITAF: Institut Technique d'Arboriculture Fruitière

Public and private institutions working in citrus

| Institutions or others | Location | Type of activity | Personnel | | Facilities |
|---|----------|---|-----------|----------------|---|
| | | | Number | Qualifications | |
| Public | | | | | |
| ITAF | Boufarik | Germplasm maintenance and pathogen detection | 05 | Engineer | Screenhouse Greenhouse Laboratories |
| Centre National de contrôle et certification (CNCC) | Alger | Certification controls for trueness-to-type and sanitary status | 01 | Engineer | Laboratories |
| Institut National de Recherche Agronomique (INRA) | Alger | Research Control of quarantine diseases | 01 | Engineer | Laboratories |
| Direction des Services Agricoles (DSA) | National | Border controls | 48 | Engineer | - |
| Chambre Nationale d'Agriculture | Alger | Legislation and marketing of agricultural products | 48 | - | - |
| Private | | | | | |
| Union Nationale des Paysans Algériens (UNPA) | Alger | Burocratic and legislative support to growers | - | - | - |

Financial Table

| Project steps | Facility/instruments/activity | Units | Cost (€) |
|---|---|--------------------|------------------|
| Inventory | GPS GIS | 3 1 | 15.000 8.000 |
| Conservation for characterization | Planting and equipments for the conservation field | 3 Ha | 75.000 |
| Genetic and agronomic characterization | Laboratory equipments and running materials | 1 | 200.000 |
| Physiological WUE characterization | Laboratory equipments and running materials | 1 | 50.000 |
| Sanitary assessment | Laboratory equipments and running materials | 1 | 85.000 |
| | 1 Indexing greenhouse, equipments (benches, shade etc...) and running materials | 200 m ² | 200.000 |
| | 1 Insect-proof screenhouse | 300 m ² | 120.000 |
| Sanitation | Equipments for <i>in vitro</i> laboratory | 1 | 100.000 |
| | 1 thermotherapy chamber | 1 | 30.000 |
| | 1 conditioned greenhouse | 200 m ² | 100.000 |
| Conservation <i>in vitro</i> | Equipments for <i>in vitro</i> laboratory | 1 | 100.000 |
| Conservation <i>in vivo</i> and assessment of pomological traits | 1 Insect-proof screenhouse | 700 m ² | 300.000 |
| Training | Short-courses | | 200.000 |
| | Stages | | 300.000 |
| | Technical visits | | 220.000 |
| | Travel expenses | | 100.000 |
| Missions and part time personnel | | | 120.000 |
| Supply | Transport vehicle | 2 | 60.000 |
| | Books, publications, CD | | 3.000 |
| | PC and printer | 1 | 3.000 |
| General expenses | | | 238900 |
| TOTAL | | | 2.412.890 |

Agreement

Official country agreement to the project on "Improvement of the citrus sector by setting up common conservation strategies for the free exchange of healthy citrus plant genetic resources"

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة الفلاحة

الأمين العام

الخطاب العاشر رقم ٢٠٠٣

AU
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OBJET: Lettre d'intention d'adhésion au projet sur
« l'Amélioration des agrumes dans le bassin Méditerranéen ».

Monsieur,

Suite aux conclusions de la première rencontre technique et scientifique commune du MNCC et du MECINET, qui a eu lieu à Alger en Octobre 2000, sur le projet d'amélioration des agrumes dans les pays méditerranéens, j'ai l'honneur de vous confirmer notre intention d'adhésion à ce projet ; en attendant la prochaine réunion qui aura lieu en EGYPTE fin 2001 pour l'élaboration du règlement intérieur du projet.

Veuillez agréer, Monsieur, mes salutations distinguées.

COPIE

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