

Jordan

Al Rwahnih M.

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

Bari : CIHEAM

Options Méditerranéennes : Série B. Etudes et Recherches; n. 33

2001

pages 181-186

Article available on line / Article disponible en ligne à l'adresse :

<http://om.ciheam.org/article.php?IDPDF=2001708>

To cite this article / Pour citer cet article

Al Rwahnih M. **Jordan**. 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*. Bari : CIHEAM, 2001. p. 181-186 (Options Méditerranéennes : Série B. Etudes et Recherches; n. 33)



<http://www.ciheam.org/>
<http://om.ciheam.org/>

Jordan

Project team

- Mr. M. AL RAWAHNIH, National Project Representative, Ministry of Agriculture, Amman
- Mr. G. ANFOKA, Al-Balqa' Applied University Faculty of Agricultural Technology, Al-Salt

Importance of citriculture

Citrus is mainly cultivated in the Jordan Valley, an area ranging from 300 to 400 m below sea level, where the special climate favours the excellent fruit quality. Extensive new orchards confirm the increase in the surface area grown with this crop, which is currently estimated at about 4000 ha. Although citrus fruits are annually exported, imports become necessary outside the harvesting season in order to meet local demand. The Government is interested in promoting and improving the citrus industry, mainly through crop protection. Superior, healthy budwood of major commercial citrus varieties has been introduced in the recent years in view of providing clean propagating material to the growers.

Citrus distribution map



Citrus varieties

Species/Varieties	Cultivated areas	Area (Ha)	Yield/Ha (q)	Exportation 1000/T
Oranges	Jordan Valley, upland	2000	186	54.82
- Washington navel		453		
- Moro		130		
- Valencia		213		
- French		24		
- Balady		165		
- Shamouti		220		
Mandarins and Mandarin-like		3000	98	26.6
- Clementine		1478		
- Mandarin		1034		
- Mediterranean Mandarin		56		
Lemons (Eureka, Lisbon)		2000	233	21.47
Grapefruit (Marsh, Triumph, Thompson)			328	1.26
Pummelo	3000	420	0.37	
Sour Orange	52			
Total		5416		

Citrus phytosanitary problems

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

X= present in the country

Citrus germplasm

Location	Date of creation	N° of accessions*	Characterization		
			morphological	trueness-to-type	sanitary
National					
Wadi Shuaib Station (Shuaib Valley)	1977		-	-	-
Wadi El-Yabi Station (Jordan Valley)	1979		-	-	-
Deir-Alla Station (Jordan Valley)	1979		-	-	-

Citrus germplasm list

Varieties/Species	
Mandarins and mandarin - like	
Honey	
Orlando	
Ponkan	
Fremont	
Bower	
Algerian tangerine	
Satsuma	
Fairchild	
Willow leaf	
Mandarin	
Wilking	
Kinow	
Minneola	
Frost dancy	
Pixie	
Tempie tangerine	
Kara	
Fortune	
King mandarin.	
Oranges	
More blood	
Marrs early	
Salustiana	
Washington navel	
Hamlin	
Tarocco	
Pineapple	
Shamouti (Jaffa)	
Valencia	
Common	
Lemons	
Eureka	
Lisbon.	
Grapefruits	
Red blush	
Marsh	
Pink marsh (Thompson).	
Pummelos	
Big	
Smali	
Webber	
Reinking	
Kumquats	
oval	
round	

Citrus programmes

Programmes	Proposed	Running (Date)	Legislation
Clonal and sanitary selection	-	-	-
Monitoring, Eradication and Control of Quarantine Pests	-	-	-
Certification	-	-	-
Quarantine	-	-	-
Others	-	-	-

Public and private institutions working in citrus

Institutions or others	Location	Type of activity	Personnel		Facilities
			Nb.	Qualifications	
Public					
Deir-Alla Station (Jordan Valley)	Amman	Research Extension	10 10	Researcher Technician	Experimental fields Plant protection lab.
Wadi El-Yabis Station (Jordan Valley)	Amman	Research Extension			Experimental fields Plant protection lab
National Centre of Agricultural Research and Technology Transfer	Al Baqah	Research	4	Researcher	Plant protection lab. Horticulturist lab.
University of Jordan		Research	5	Researcher	Plant protection lab. Horticulturist lab
Al-Balqa Applied University	Amman	Research	1	Researcher	
Mu'ta University	Al Karak	Research	1		

Financial Table

Project steps	Facility/instruments/activity	Units	Cost (€)
Inventory	GPS	1	5.000
	GIS	1	8.000
Conservation for characterization	Planting and equipments for the conservation field	1 Ha	25.000
Genetic and agronomic characterization	Laboratory equipments, furnitures and running materials	1	100.000
Physiological WUE characterization	Laboratory equipments, furnitures and running materials	1	30.000
Sanitary assessment	Laboratory equipments, furnitures and running materials	1	55.000
	1 Indexing greenhouse, equipments (benches, shade etc...) and running materials	100 m ²	100.000
	1 Insect-proof screenhouse	100 m ²	40.000
Sanitation	Equipments for <i>in vitro</i> laboratory	1	50.000
	1 thermotherapy chamber	1	30.000
	1 conditioned greenhouse	100 m ²	50.000
Conservation <i>in vitro</i>	Equipments for <i>in vitro</i> laboratory	1	100.000
Conservation <i>in vivo</i> Assessment of pomological traits	1 Insect-proof screenhouse	200 m ²	100.000
Training	Short- courses		80.000
	Stages		100.000
	Technical visits		70.000
	Travel expenses		45.000
Missions and part time personnel			80.000
Supply	Transport vehicle	1	30.000
	Books, publications, CD		3.000
	Personal computer and printer	1	3.000
General expenses			110.400
TOTAL			1.214.400

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"



No. 9/42/16/3 / 11206
Date 16/10/2001
الرقم
التاريخ
الموافق

To : Dr. Cosimo Lacirignola
Director of Mediterranean Agronomic
Institute of Bari

Subject : Citrus activity

Dear Dr. Cosimo Lacirignola

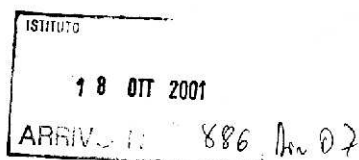
Referring to the memorandum of understanding between our Ministry and your recognized Institute for : Common Activities to promote Sustainable Agriculture in Jordan, which we signed together on November the 15th/2000.

Please be informed that Mr. Maher Al Rwahnih will act as the counter part from our side to this activity "Improvements of the citrus sector in the Mediterranean by the setting up of common conservation strategies for the free exchange of healthy citrus plant genetic resources" and will be responsible in following up related correspondence while he is doing his studies in Italy.

Thanking for your precious collaboration.

Best regards ..

Sincerely yours
Mahmud Duwayri
Minister of Agriculture



F R/MM/7