

Capacity Building

I. Training

a. APRP Special Training Coerces 2000-2001

1. Training Course on Collection and Utilization of Local Plant Genetic Resources

A training course was held in Damar, Yemen on collection and utilization of local plant genetic resources from 24 - 26 March 2001.

The course was conducted in collaboration between APRP/ICARDA and AREA. The course structured to be two days of lectures and one day as field trip to practice collecting. Thirteen trainees from nine different stations attended the raining course. The trainees practiced on how to fill the collection form by the site data, used the GPS to assign the coordinates and sampled different specimens from the targeted species. Discussions were made at each site to describe the characters and the data noticed and scored.

2. Regional Training Course on Solarization & Integrated Management of Green Houses

ICARDA's Arabian Peninsula Regional Program (APRP) organized a specialized training course on Solarization & Integrated Management of Green Houses, held at Al Marifa Training Center in Rumais, Muscat, 2-3 April. The course organized in collaboration with the Ministry of Agriculture and Fisheries (MAF) in Oman.

The TC focused on the application of Soil Solarization for the sterilization of greenhouses and biological control as part of the Integrated Production and Protection Management (IPPM) programs and practices that aim at improving the GH management using safe control measures to produce high value crops with less reliance on chemical control.

22 trainees participated from the Arabian Peninsula countries. Also, a number of highly qualified experts lectured in the subjects of GH management, soil solarization, GH insects and their natural enemies and application of chemicals and fertilizers for GH crops.

The TC was conducted in Arabic and the following are the main contents:



١. الإدارة المتكاملة للإنتاج والوقاية في الزراعة المحمية. د. احمد توفيق مصطفى
٢. أمراض النبات التي تقطن التربة والطرق العامة لمكافحتها. د. وليد أبو غربية
٣. الآفات الحشرية في الزراعات المحمية. د. عدنان بابي
٤. مكافحة البيولوجية للآفات الحشرية في الزراعات المحمية. د. عدنان بابي

٥. المسح الميداني للآفات الحشرية والأعداء الطبيعية في الزراعة المحمية. د. عدنان بابي و د. احمد مصطفى
٦. التعقيم الشمسي للتربة الزراعية- الأساسيات والتطبيقات العملية. د. وليد أبو غربية
٧. التعقيم الشمسي للتربة في بساتين الأشجار المثمرة. د. وليد أبو غربية
٨. استخدام بدائل بروميد الميثايل في مكافحة المتكاملة لأمراض التربة. د. وليد أبو غربية
٩. تأثير حجم قطرات الرش على مكافحة الأمراض والحشرات والسمية للنباتات. الأمان في استخدام المبيدات. م. احمد شهبندر
١٠. الأشكال المختلفة لمستحضرات المبيدات – أجهزة الرش الحديثة للمحميات. م. احمد شهبندر
١١. أهمية توازن العناصر السمادية - تأثير العناصر السمادية على جودة الثمار ومقاومة الجفاف والأمراض – أنواع المخلبيات (الشلات) للأسمدة التي تضاف للأوراق والتربة. م. احمد شهبندر
١٢. هياكل البيوت المحمية والاستفادة المثلى من المساحة المغطاة. م. عبد الفتاح طرشة
١٣. أغطية البيوت المحمية ومواد التظليل ومصدات الرياح في المناطق الحارة. م. عبد الفتاح طرشة
١٤. نظم التهوية والتبريد في البيوت المحمية- التحكم في الرطوبة النسبية. م. عبد الفتاح طرشة
١٥. الإضاءة- التدفئة - الاستفادة من حرارة التربة. م. عبد الفتاح طرشة
١٦. تدريب ميداني
- تعقيم بيت محمي بالطاقة الشمسية
 - التعرف على الآفات الحشرية وتشخيص الإصابة والأضرار
 - تعقيم تربة بساتين الفاكهة بالطاقة الشمسية
 - تشغيل وصيانة البيوت المحمية والأنظمة والأجهزة الملحقة بها.
 - فيلم عن الإدارة المتكاملة للحشرات (IPM) في الزراعة المحمية

3. Forage and Range Germplasm Collection in Dhofar, Oman. (Nov. 8-18, 2001)

In response to a request by the Sultanate of Oman for ICARDA-APRP to support and participate in germplasm collection mission in Dhofar region this trip was made. A similar mission was supported by ICARDA-APRP in 1998 for the Sohar region in Oman, where 68 accessions comprising 23 genera and 28 species were collected (both seeds and herbarium materials). The seeds collected then (especially of perennial grasses) are now being evaluated within the collaborative program between Oman and ICARDA-APRP for their forage value and water use efficiency with the objective of replacing the water hungry exotic forages such as Rhodes grass.

**Map showing
germplasm collection
sites (▲) in Dhofar
province during
November 2001**



Participants in the mission were Ali Shehade (ICARDA-GRU, Aleppo); Ahmed Osman (ICARDA-APRP, Dubai); Saleem Nadaf, Salih Al Hinahi and Safa'a Al Farisi (Research & Extension Ministry of Agriculture, Rumais, Oman). From Salalah (Range and Forest group) participated: Saeed Bin Masoud Al Omari (local coordinator), Ahmed Awad Bakeir, Mohamed Bin Mahad Al Awaeid, Salem Bin Mosalam Geid, Ahmed Suhail Al Marhoun, Msalam Ali Hardan and Ahmed Mosalam Al Amri.

Based on our field visits and discussions with government officials and herders the following recommendations are suggested:

- The stocking rate on the range is currently estimated at 2-3 times the carrying capacity, every effort need be given to reduce animal numbers. Without such step no range improvement program can succeed. The government program to create a market for excess animals is the only hope in the horizon.
- Range enclosures (currently about 25) are providing useful information on the potential for rangeland recovery. Also they are important for seed collection. The numbers of these enclosures need to be increased (doubled) for In-situ conservation of biological diversity on the rangelands of Dhofar

On the job training on various aspects of germplasm collection



- Currently the enclosures are opened for the herders at the end of each season. The new enclosures (10m x 10m) should be kept closed for a longer time in order for perennials (grasses) to recover and establish.
- The tree garden behind the building of the Agricultural Directorate, comprising over 90 tree and shrub species is important source of seeds for these species. A similar field need be established for seed multiplication of important range grasses. Large seed quantities will be needed if rehabilitation programs for the degraded rangelands are to be attempted.

Number of accessions of each species collected in Dhofar, Sultanate of Oman in November 2001

Trees and shrubs	Grasses and Legumes
1 <i>Acacia etbaica</i>	2 <i>Apluda mutica</i>
1 <i>Acacia gerardi</i>	1 <i>Cenchrus sp</i>
1 <i>Acacia nilotica</i> (subspecies <i>indica</i>)	1 <i>Dactyloctenium scindicum</i>
1 <i>Acacia laeta</i>	1 <i>Dichanthium aristatum</i>
2 <i>Acacia senegal</i>	1 <i>Dyschoriste dalyi</i>
2 <i>Anogeissus dhofarica</i>	1 <i>Loudetia flavida</i>
<u>1 <i>Belepharispermum hirtum</i></u>	<u>1 <i>Seteria sp</i></u>
1 <i>Euphorbia balsamiphora</i>	2 <i>Themeda quadrivalis</i>
1 <i>Ormocarpum dhofarensis</i>	1 <i>Trigonella sp</i>
11 Total	11 Total

- Small quantities of seeds of range plants are currently stored at room temperature. Proper cold storage facility is needed if seeds are to be stored for long time.
- Staff working on range/forestry who are currently under the Agricultural Directorate (The Range/Forestry Directorate was moved to Muscat in 1999) have received training (Diploma) in forestry and range work. They are in need of more training on all aspects of seed production, seed and herbaria storage and maintenance.
- A vacuum seed collector is available, but seed threshers and cleaners are lacking. ICARDA-APRP is providing seed scarifiers and seed cleaner equipments for the Sultanate of Oman. The seed multiplication efforts at Salalah can benefit from these facilities.

b. ICARDA's Training Courses 2000-2001

1. Participants from AP in Year 2000 TC

Headquarters Short-term Training Courses

a). Forage and Pasture Seed Production, SU (04-15 June 2000)

1. Abdullah Marzoug Al-Hajoj, S. Arabia
2. Ali Ahmed Hassan, UAE
3. Hadeed Salim Hadeed Bait Shajanah, S. Oman
4. Hamad Eid Al-Enazy, Qatar
5. Hana Amin Mohd Al-Zarooni, UAE

b). Statistical Analysis of Data, CBSU (3-14 September 2000)

6. Ahmed Abdul Wahab Malek, R. Yemen

Non-headquarters Short-term Training Courses

a). *Integrated Approaches to Breeding Cereals for Drought Resistance, GP, NRMP (27 March-7 April 2000) held at Rabat, Morocco*

7. Raad M. Salman, Yemen

b). *Watershed Management, NRMP (17-28 September 2000) in Mersa Matrouh, Egypt*

8. Lotfi Kasim Al-Asbahi, Yemen

c). *Utilization of Expert Systems in Agricultural Research and Production, HRDU (8-19 October 2000) held at CLASE, Cairo, Egypt*

9. Ali Salem Al-Mutawa, UAE

10. Khalil M. Alsharjabi, Yemen

Individual Non-degree

a). *Organization and management of seed quality control Yemen 16 Jan.-10 Feb.*

11. Abdulrahman Saleh Saeed Al-Ansi.

12. Abo Backer Saleh Al-Hakem.

b). *Genetic resources documentation, Yemen, 23-28 Sept.*

13. Mohamed Abdollah Ghaleb

Individual degree 2000

14. Moubarak A. Bamoftah, Yemen. MSc Degree, Alexandria Univ., Sep.97-June 2000

15. Abdunasser M. Al-Bakri, Yemen .Ph.D. Degree, Gezira Univ., Aug. 98-2001

16. Abdulrahman El-Massoudi, Yemen. Ph.D. Degree, Wales Univ..Oct. 96-Mar. 2000

17. Hamad A. Salman, UAE. Ph.D. Degree, Glasgow University, 97-2000

18. Hamoud Al Mokbel, Yemen. Ph.D. Degree, Alexandria Univ., Feb.98-Oct. 2001

2. Participants from AP in Year 2001 TC

Headquarters Short-term Training Courses

a). *DNA Molecular Marker Techniques for Crop Improvement, GP (2-13 Sept.)*

1. Nagi Mohammed Zaid, Yemen

b). *Experimental Design, Data Management and Statistical Analysis, CBSU (16-27 Sept.)*

2. Abdullah Ibrahim Alturail, S. Arabia

c). *Experimental Station Operation Management, St. Op. (7-18 October)*

3. Salim Saud Al Kindi, S. Oman

d). *Scientific Writing and Data Presentation, CODIS (25-29 Nov.)*

4. Faisal Abdulla Ahmed, Yemen

5. Jamal Mahmoud Mahmoud , UAE

6. Mohamed Ali Al-Mudhwahi , Yemen

7. Mohammed Saif Galib, Yemen

Non-headquarters Training Courses

a). *Collecting and Utilizing of Local Plant Genetic Resources, AP (20-27 March 2001) held in Dhamar, Yemen*

8. Abdel Habib Mahyub Ali Al Kuds, South Highland Research Station, Taz
9. Abdullah Hussein Al Najjar, Genetic Resources Unit, Dhamar
10. Ahmad Ali Shamsan Al Dahmash, Genetic Resources Unit, Dhamar
11. Kaed Ben Askar Al Wade, Easter Research Station
12. Mouhamad Mukbel Mare'e, Central Research Station
13. Mouhammad Hasan Omar, Al Kod Research Station
14. Mouhammad Mouhammad Zaki Doss, Central Research Station
15. Munsif Saeed Khan, Animal Research Center
16. Nadia Kasem Abdel Rabb, Al Kod Research Station
17. Najib Abdallh Mouhammad, Genetic Resources Unit, Dhamar
18. Najib Ali Saeed Al Saghir, North Highland research Station
19. Rajab Mahfuz Sharfa, Saiwan Research Station
20. Saleh Omar Ahmad Bahhah, Eastern Coast Research Station, Al Mukalla

b). *Solaziration & Integrated Management of Greenhouses, AP (23-28 June 2001) held in Muscat, Sultanate of Oman*

21. Abdul Hakeem Ghailan, Yemen
22. Ahmed Mahamed Said Al Mandhary, S.Oman
23. Ahmed Mohamed Saeed Ali, U.A.E
24. Ali Rashid Masoud Al Abri, S.Oman
25. Amal Abdul Kareem, Kuwait
26. Faisal Hassan Abdullah, Bahrain
27. Habibah Saoud Al Menie, Kuwait
28. Hamed Eed Al-Enzi, Qatar
29. Humaid Ali Humaid Al Naseri, S.Oman
30. Issa Mohamed Sultan, Qatar
31. Mansour Mohamed Saeed Al Dalas, Yemen
32. Maria Mansour Almas Al Baloushi, S.Oman
33. Mohamed Al Aradi, Bahrain
34. Mohamed Moubark Mozhoud Al Hashemi, S.Oman
35. Mosaad Nagi Issa, Yemen
36. Naeila Hamdoon Sofian Al Musallamy, S.Oman
37. Naser Yaqoub Ramadan Gaber, Kuwait
38. Rashid Ahmed Ali Saeed, U.A.E
39. Salem Ali Salem Al Omrani, S.Oman
40. Salim Mohamed Khater Al Makhmari, S.Oman
41. Salim Mouhad Souhail Qoutne, S.Oman
42. Yousif A.A. Al Najim, K. S. Arabia

c). *Utilization of Expert Systems in Agricultural Research & Production, HRDU (13-24 October 2001) held at CLAES, Cairo, Egypt*

43. Abdullah Jasim Al-Buhssein Al-Buainain, Qatar
44. Mohammed Saleh Al-Nassiri, Yemen

Individual Non-degree

a). *Water harvesting research and literature review, Yemen , 15 July-2 Aug.*

45. Ahmed Mohammed Al-Wadaey

b). *Data management and analysis using Genstat, S. Arabia, 10-21 June*

46. Ali Mohamed Almadi

c). *Greenhouse management, Dubai, 29 Nov. 2000-26 Feb. 2001*

47. Mohamed Al-Saadi, Yemen

d). *Greenhouse management, Dubai, 18 Feb.-17 May 2001*

48. Hassaan Ali Mohammed Al-Kholany, Yemen

Individual degree 2001

49. Ali Ahmed Meghesh, Yemen. MSc. Degree, Jordan Univ., 2000-2003

50. Hamid Al-Khader, Yemen .MSc. Degree, Gezira Univ., Apr. 2001-2003

51. Naguib Abdel Galil Al-Arikil, Yemen. MSc. Degree, Gezira Univ., Dec. 98- June 2001

52. Abdul Rahman El-Shami, Yemen. Ph.D. Degree, Indian Agriculture Univ., Sep. 98- Sep. 2001

53. Abdunasser M. Al-Bakri, Yemen. Ph.D. Degree, Gezira Univ., Aug. 98-2001

54. Hamad A. Salman, UAE .Ph.D. Degree, Glasgow Univ., 1997-2001

55. Hamoud Al Mokbel, Yemen. Ph.D. Degree, Alexandria Univ., Feb.98-Oct. 2001

II. Meeting, Seminars & Workshops

1. APRP coordinated with the Agricultural Research and Extension Authority (AREA) of the Ministry of Agriculture and Irrigation and Faculty of Agriculture of the University of Sana'a a national **workshop on Protected Agriculture in Yemen – Current Status and Future Challenges**, held at the Univ.of Sana'a, 2-3 April. The objectives of the workshop were to:
 - Create common vision on the directions of PA under Yemeni conditions.
 - Identify roles and responsibilities of different stake-holders as well as decision makers in the implementation and interventions aimed at improving qualities and quantities of agriculture production of value added crops.
 - Promote marketing and export of these crops to a wider range of markets in the region.

The workshop was attended by Farmers, Private companies, Decision makers in the Ministry of Agriculture and Irrigation (MAI), academic staff engaged in green house cultivation, researchers and Extension personal and agencies in both traditional and new areas of green house cultivation.

2. APRP held its second **Regional Technical Coordination Meeting (RTCM)- Rangeland & Water** at Al Jouf, Kingdom of Saudi Arabia (KSA) in May 2001. The meeting, which was attended by 29 scientists from the seven AP countries and ICARDA focused on rangeland seed production and irrigated forages. A two days traveling workshop preceded the meeting, which gave the participants a chance to see activities on seed production and the field reach on rangelands in the northern part of the Kingdom. The meeting was used to review ongoing research and to plan for the coming season.
3. APRP coordinated with the International Center for Biosaline Agriculture (ICBA) and the Ministry of Agriculture and Fisheries (MAF) a **Symposium on Prospects of Saline Agriculture in the GCC countries** in Dubai, UAE during March.
4. The program (APRP) also participated in an Expert Consultation Meeting on Conservation and sustainable Utilization of plant genetic resources held in May 2001 in the Sultanate of Oman.
5. APRP participated in a **Regional Workshop on Municipal Wastewater in West Asia** organized by UNEP/PERSGA/ROPME in Bahrain from 10-12 Nov.2002. More than 40 experts from Governments, Regional Governmental and non-Governmental Organizations discussed and endorsed a regional multi-stakeholder work programme to address the major impediments and the priorities and recommendations for action on municipal wastewater management.
6. APRP organized a number of **seminars** with the Extension Department in the Municipality of Abu Dhabi, UAE for growers and extension staff. The first seminar was on **Integrated Production and Protection Management Program for GH Crops** was held on October 2001 in Abu-Dhabi. Three more

seminars on rangeland rehabilitation, fodder crops and protected agriculture are scheduled for the New Year.

7. **Regional Stakeholders Roundtable meeting** was held September 23-25, at Sheraton, Manama, Bahrain in preparation for the World Summit on Sustainable Development-WSSD. The meeting was attended by 75 persons, representing ten Arab countries, Parliamentarian, Regional NGO's, Private Sector, Academician & Scientific Research, Regional Youth organizations, Regional Women Organizations, Media; National and International Organization working in the region. ICARDA was invited and was represented by a senior scientist from APRP-Dubai. The meeting was organized by UNEP, ESCWA and CAMRE.
8. At the "**Experts Meeting of Soilless Culture Techniques**" organized by the Federation of Arab Scientific Research Councils and held 1-2 November in Amman, Jordan, Dr. Ahmed Moustafa presented a keynote address on: Soilless Culture in the Arabian Peninsula – Research and Applications.