



Coordination of the Agricultural Research In the Mediterranean Area

## **D. 1.3 COUNTRY REPORT**

Overview on the research system and research programmes  
on Mediterranean agriculture

### **TUNISIA**

#### **IRESA**

*Country Focal Point: BEN RAYANA Aniss*

**2010**





## Coordination of the Agricultural Research In the Mediterranean Area

### BACKGROUND.

The purpose of this country report is to give an overview about agricultural research system and programmes in Tunisia under the authority of The Institution for Research and Higher Education in Agriculture (IRESA). Besides, information is given about setting priorities, monitoring, evaluation and funding of programmes.

Information given in this report are collected by the questionnaire developed by WP1 deputy Leader (Italian team) and adopted by all Arimnet partners.

The questionnaire was published in the special website of the project ([www.arimnet.net/database](http://www.arimnet.net/database)) in two versions. The French version was developed by the WP1 leader (French team). Besides, the Tunisian focal point has sent mailing to all research Institutes & Centers and Higher Education Institutes, with a monthly monitoring, in order to view the state of filling the questionnaire. In addition, IRESA's team has animated many work shops in the most important institutes in order to explain the objectives of the questionnaire and the way of filling it on line. For the questionnaires submitted in paper version, IRESA's team has taken the charge to fill it on line.

This report summarizes the data compiled by Focal Point of Tunisia.

### GENERAL ORGANIZATION.

#### Agricultural Research & Funding System in Tunisia.

The Institution for Research and Higher Education in Agriculture (IRESA) was established in 1990. It is an institution under the Ministry of Agriculture, Hydraulic Resources and Fisheries (MARHP). IRESA oversees about 90 % of the agricultural research programmes/activities undertaken in Tunisia.

#### IRESA mandate:

IRESA's mandate includes:

- Promoting agricultural research in Tunisia through the coordination of research, higher education and extension.
- Disseminating agricultural knowledge.
- Setting, funding and monitoring national research programs.
- Coordinating and evaluating the national agricultural research programs.

IRESA administers:

- 6 research institutes
- 4 for regional research centers
- 2 regional branches
- 11 higher-education institutions

#### Research Institutes & Centers

There are 10 agricultural research institutions throughout the country carrying out research programmes in all disciplines of agriculture. Six of them are national institutes:



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- INRAT: Institut National de la Recherche Agronomique de Tunisie
- INRGREF: Institut National de la Recherche en Génie Rural Eaux et forêts
- I.O: Institut de l'Olivier
- IRVT: Institut de la Recherche Vétérinaire de Tunisie
- IRA: Institut des Régions Arides Médnine
- INSTM: Institut National des Sciences et Technologies de la Mer

Four regional centers were created since 2007:

- CRR AO : Centre Régional de Recherche en Agriculture Oasienne
- CRR HAB: Centre Régional de Recherche en Horticulture et en Agriculture Biologique
- CRR CO: Centre Régional de Recherche du Centre Ouest Sidi Bouzid
- CRR GC : Centre Régional de Recherche en Grandes Cultures

### Higher Education Institutes

- INAT : Institut National Agronomique de Tunisie
- ESIAT : Ecole Supérieure des Industries Alimentaires de Tunisie
- ISAg Chott Meriam : Institut Supérieur Agronomique de Chott Meriem
- ESA Mograne : Ecole Supérieure d'Agriculture de Mograne
- ESA Mateur : Ecole Supérieure d'Agriculture de Mateur
- ESA Kef : Ecole Supérieure d'Agriculture du Kef
- ESIER Medjez El Bab : Ecole Supérieure des Ingénieurs en Équipement Rural
- ISP Tabarka : Institut Sylvo Pastoral
- ENMV Sidi Thabet : Ecole Nationale de Médecine Vétérinaire
- ISPA Bizerte : Institut Supérieur de la Pêche et de l'Aquaculture
- ISEPBG de Soukra : Institut Supérieure des Études Préparatoires en Biologie et Géologie

The higher education institutes are under the dual umbrella of MARHP and the Ministry of Higher Education and Scientific Research (MESRS).

Researchers and scientists are grouped in research laboratories and research units; 28 laboratories and 20 research units operate under IRESA.

### Priorities setting, monitoring and evaluation

National agricultural priorities are determined in a decennial plan (1999-2008), adopted by the government. The first decennial plan was approved by the government in March 1998 and has been implemented since 1999. Ten research domains have been identified:

- Cereals, legumes, forages
- Water resources
- Breeding
- Tree crop productions
- Horticultural productions
- Natural resources
- Aridology
- Agricultural mechanization
- Fishing and fish farming



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Animal health

### System of the research programming.

For each of the 10 domains, a steering and evaluating committee composed by researchers, scientists, representative of development and farmers act as Committee of Programming and Evaluation of the Agricultural Research (CPERA). Each committee studies all research propositions and evaluates their outputs.

In each domain, a number of federative projects are selected that fulfil a number of re-established criteria; each of them contains several research actions.

For, the first decennial strategy, 42 federative projects were selected (150 actions) and financed by IRESA (MARHP).

These projects are evaluated by the CPERA's. Laboratories & units programmes are evaluated by CPERA and by CNEAR (National Committee for Evaluation of research activities) which is under the authority of MESRS.

The timeframe for research units is 3 years while that for the laboratories is 4 years.

MESRS allocates an annual budget to research laboratories and units based on an annual evaluation (scientific production...).

### Role of the CPERA's:

- Ex ant evaluation of the research actions
- Appreciation of the coherence between research actions and pertinence of the research programmes/actions.

### Follow – up and Evaluation:

- Annual follow – up according to reports of promotion of the research projects.
- evaluation of the results obtained at the completion of the projects (Evaluations are organized for this purpose)
- Identify the best results to be diffused
- Give direction for future programmes

A new decennial plan was prepared which starts in 2010. It includes new programmes such as:

- Organic agriculture
- Climate change
- Post harvest
- Plant protection
- Quality of agricultural products
- Socio economy aspects and agricultural policies



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

In 2009, new federative projects were adopted by CPERAs in the fields of cereals, plant protection, horticulture and water management.

An important program on quality of agricultural products started at the end of the first decennial strategy (15 projects were identified with this program).

A new laboratory on organic agriculture will be created before the end of 2010.

### MAPPING OF RESEARCH PROGRAMMES.

**Research Programmes:** number of programmes/projects: 101

#### Programmes Titles:

- 1 - Management of Tuta absoluta, a new pest of tomato culture
- 2 - Management of Bemisia tabaci on vegetables and ornamental crops in Tunisia (Cooperation with IRD, FRANCE)
- 3 - Improvement of melon culture
- 4 - Identification, characterization and maintenance of some local vegetable population (pepper, parsley, carrot...)
- 5 - Forest ecology and biodiversity
- 6 - Sylvo-pastoral techniques
- 7 - Management and resource valorisation
- 8 - Resource protection
- 9 - Forestry and Water research
- 10 - Research laboratory: Epidemiology of enzootic infections of herbivores in Tunisia
- 11 - Mass trapping of the Medfly Ceratitis capitata
- 12 - Biology and control of aphids under organic farming almond
- 13 - Prevalence of major pathogens bacteria (salmonella, E.coli, campylobacter) epidemiological surveillance of their resistance.
- 14 - Study of detoxification of clams in Tunisian coast
- 15 - Permanent monitoring program of medical prophylaxis of viral infections in major poultry farms
- 16 - Study of lentivirus in small ruminant in Tunisia.
- 17 - Epidemiology of staphylococcus aureus isolated from bovine mastitis in Tunisia
- 18 - Epidemiology of enterobacteriaceae isolated from poultry in Tunisia
- 19 - Isolation and characterisation of west Nile virus
- 20 - Improvement of the productivity of the dairy ewe (Sicilo- Sarde breed)
- 21 - Evaluation of cereal, forage and industrial varieties presented for inscription in catalogues.
- 22 - Growth performances and carcass characteristics of camelids
- 23 - Olive growing
- 24 - Organic horticultural crop production
- 25 - Convention: ISP Tabarka and the University of Arizona
- 26 - Convention: ISP Tabarka and DIPUTACION PROVINCIAL DEL HUELVA (SPAIN)
- 27 - Convention: ISP Tabarka and Saint Christophe Institute (France)
- 28 - Project : Comité Mixte de Coopération Universitaire (CMCU) French-Tunisian cooperation
- 29 - Assessment of severity of Fusarium wilts of some vegetables



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- 30 - Incidence of Verticillium wilts on some vegetable crops
- 31 - Incidence and Biological control of several potato diseases
- 32 - Interaction between salinity and Verticillium wilt severity on tomato
- 33 - Estimation of the climatic change effect on soil characteristics and crops, irrigated with saline water under semi arid climate
- 34 - Irrigation and drainage management in Tunisian Oases
- 35 - Valorisation of Tunisian medicinal and aromatic plants
- 36 - Monitoring network of rotavirus bluetongue and African horse in the Mediterranean basin
- 37 - Epidemiology and diagnosis of bluetongue and other clinically related viral diseases of relevance in animal health
- 38 - Irrigation scheduling and water requirements in conventional and organic orchards
- 39 - Epidemiology of mastitis, effect of the milking conditions on cows health, milk quality and performances
- 40 - Milk quality in Tunisia
- 41 - Nervous diseases of cattle
- 42 - Post harvest diseases of apple
- 43 - Study of watermelon hardening fruit
- 44 - Developing the culture of Strelitzia reginae in the coast's region of Tunisia
- 45 - Improvement of watermelon rootstocks for resistance to salinity, drought and fusarium
- 46 - Study of the behaviour of local and imported potatoes seed in the culture growing season
- 47 - Effect of ammonite fertilizers substituents on crop yield of potato
- 48 - Improvement of almond culture in central Tunisia
- 49 - Improvement of pistachio culture in central Tunisia
- 50 - The response of different olive cultivars to deficit irrigation
- 51 - Water use efficiencies of irrigated wheat with different irrigation systems
- 52 - Selection of irrigated durum wheat varieties adapted to central Tunisia conditions
- 53 - Control of the most important cereal diseases
- 54 - Unit of researches: Resources and improvement genetics of olive tree, pistachio and almond tree
- 55 - Laboratory of research: Improvement of olive oil and arboriculture productivity
- 56 - Selection of new early apricot cultivars
- 57 - Control of an orchard in biological mode
- 58 - Virus cleansing of local fig (Ficus caricaL) from Fig Mosaic disease.
- 59 - Research unit: Agroforestry
- 60 - Production and performances of barley under rainfall conditions and irrigated durum wheat
- 61 - Substitution of soya bean by faba bean in ruminants diets
- 62 - Use of the essential oils in animal nutrition
- 63 - Enhancement of male and female reproduction of ruminants
- 64 - Conservation agriculture based on direct drilling
- 65 - Control of biotic and abiotic stress of crop fields (Cereals and Pulses)
- 66 - Research Unit: Cultivated plant protection and Environment
- 67 - Research Unit: Technology and Quality
- 68 - Research Team: Economics of olive oil sector in Tunisia
- 69 - Integrated weed management
- 70 - Research Unit: Management and Enhancement of Forest Resources



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- 71 - Fight against biotic and abiotic stress of Cereals and Pulses
- 72 – Research laboratory: cereals & legumes
- 73 – Research laboratory: Livestock & forages
- 74 – Research laboratory: Biotechnology & crop physiology
- 75 - Research laboratory: Horticulture
- 76 – Research laboratory: Crop Protection
- 77 - Research laboratory: Agronomy
- 78 – Research laboratory: Rural Economy
- 79 - Research Unit: Integrated Crop Protection
- 80 - Research Unit : Ecosystèmes et Ressources Aquatiques
- 81 - Contribution to the establishment of a Label for the lamb of Sidi Bouzid
- 82 - Determination of parameters of different breeds of cattle fattened in Tunisia
- 83 - Study of variation in nutritional composition for the recovery of the sardine and sardinella
- 84 - Classification of carcasses, cutting reference, meat quality and identification of potential regional products under the system of small ruminant production in Tunisia
- 85 - Study of Tunisian consumer preferences for meat products and seafood
- 86 - Determining of the cost of wrapping major fresh vegetables and its impact on consumers
- 87 - Anguilla Anguilla: Smoking and study of nutritional and biochemical variation
- 88 - Determinants of milk quality in Tunisia
- 89 - Refrigerated storage of fruit, quality control fruit stored for a long period
- 90 - Supplemental irrigation, water management of vineyards and quality wines of appellation of origin in Tunisia
- 91 - Epidemiology of mastitis and influence of process conditions on the health of cows, milk quality and performance of the farm
- 92 - Study of conservation quality post mortem of the royal and white shrimp
- 93 - Research Unit: Exploitation of aquatic sources
- 94 - Research Unit: Monitoring and control of water quality
- 95 - Research unit: Preservation, Conservation, Development and recovery of Eglantier in Tunisia
- 96 - Research Unit: Food preservation
- 97 - Research Unit: Science and technology of Food
- 98 - Improving the productivity of barley in South - Promoting the culture of barley
- 99 - Pastoral ecology
- 100 - Economy and rural societies
- 101 - Aridology and oasis cultures

### Programmes types:

Institutional mission (core)	Regional	National	Trans-national	Area	International	Other
17	27	77	1	1	25	0

### Description of thematic areas:

The Programmes thematic areas are:



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)





## Coordination of the Agricultural Research In the Mediterranean Area

- Biochemical and molecular characterization of olive tree varieties and clones and valorisation possibility of Tunisian olive oils: 1
- Study of environmental factors impact and extraction conditions on the olive oil quality: 1
- Study of argan, almonds and pistachios oils quality: characterization and valorization: 1
- Clonal selection of “Chemlali” and “Meski” varieties: 1
- Assessment and selection of hybrids derived from crossbreeding operated on Meski, Chemlali and Chétoui: 1
- Survey of the behaviour of olive tree varieties according to the zone of culture: 1
- Propagation of the olive tree according to several processes and study of variety potentialities and vitro-olive tree: 1
- Faculty of olive tree varieties (local and foreign) at high density conduct: 1
- Reproduction biology and harvesting prediction: 1
- Identification, characterization and Conservation of almond’s genetic material: 1
- Evaluation, selection and in vitro propagation of *P. vera* and *P. atlantica* genotypes in view to produce healthy, vigorous and salt-tolerant clones that may be used as Rootstocks: 1
- Mycorrhizal inoculation and uses as biotic alternative to attenuate biotic and abiotic stress: 1
- Growth and development of the olive tree: 1
- Management of plantation in rainfed conditions (olive trees and arboriculture): 1
- Irrigation management (olive trees and arboriculture): 1
- Improvement of the fertility of soils and the orchards nutrition (olive trees and arboriculture): 1
- Mechanization of olives harvesting: 1
- Study of olive growing sector production systems in Tunisia: 1
- Globalisation and olive oil sector competitiveness: 1
- Prospective analysis of the olive sector: 1
- Olive Geographic Information System (Olive GIS) for farms, mills and other industrial structures: 1
- Global quality, quality sign and origin denomination: diagnostic and economics impacts: 1
- Protection of olive trees in the environment preservation context: 1
- Contribution to the study of olive tree mites in Tunisia and of control methods: 1
- Characterization of the olive tree virus in Tunisia: 1
- Bio-ecological study of the pomogranate pest: *Virachola* spp. (Lepidoptera, lycaenidae) and proposition of methods for biological control: 1
- Inventory and characterization of phyto-pathogenic bacteria of fruit trees: 1
- Characterization of almond and peach trees virus in Tunisia and proposition of control methods: 1
- Animal production: 1
- Ruminants nutrition: 1
- Biodiversity conservation and ecological monitoring long-term: 1
- Restoration, rehabilitation, management and rangeland management: 1
- Ecophysiology: 1
- Study and exploitation of natural biologically active substances: 1
- Mycology and technical production of truffles: 1
- Biometrics, forestry and forest management: 1
- Forest Plant Health Protection: 1
- Wood technology and enhancement of forest by-products: 1
- Modelling spatial remote sensing, GIS and geostatistics: 1
- Forest Economy: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)





## Coordination of the Agricultural Research In the Mediterranean Area

- Fight against major fungal diseases and water deficit in wheat and barley using antiperspirants: 1
- Inventory, study and proposed methods of struggle against the major viral diseases of legumes: 1
- Development of integrated control methods against major pests (aphids and weevils) pulses: 1
- Operation of radio for fostering tolerance of durum wheat and chickpea spring drought in semi-arid: 1
- Identification and study of behaviour of some agroforestry species: 1
- Techniques of multiplication and production of species of agro-pastoral-sylvo promising: 1
- Studies of agro-sylvo-pastoral systems: 1
- Identification, characterization, conservation and genetic improvement of plant genetic resources cultivated in arid environments and oasis: 1
- Biotechnology applied to agricultural production in arid areas and Sahara: 1
- Cropping systems and oasis production: 1
- Cropping systems and production in steppe areas: 1
- Conduct of greenhouse crops and geothermic culture: 1
- Phytosanitary problems and fight against predators in the oasis and greenhouses: 1
- Natural Resource Management in Arid areas: 1
- Rangeland management and land dynamics in the agrarian system of El Ouara: 1
- Oasis farming systems, constraints on development: 1
- Heritage and development, conservation, rehabilitation and recovery: 1
- Information and communication systems in arid areas: 1
- Physicochemical and bacteriological analysis of samples: 2
- Study of the trophic state of waters of the dam: 1
- Monitoring the water quality of river: 1
- Study of settle ability and turbidity: 1
- Physicochemical characterization of the aquatic sources: 1
- Improving the selectivity of fishing techniques: 1
- Development of aquaculture activities: 1
- Socio-economic study: 1
- Ecobiology Study and recovery of species: 1
- Poultry nutrition: 1
- Biotechnology: 1
- Microbiology (intestinal microflora): 1
- Immunity: 1
- Meat quality: 1
- Resources and improvement genetics of the olive tree: 1
- Cultural techniques in rainfed and irrigation conditions: 1
- Plant health care of the olive tree: 1
- Manufacturing technology of oil and table olive processing: 1
- Economics of olive oil sector: 1
- Study of the geographical distribution of Rosehip in Tunisia and identification of different accessions identified: 1
- Taxonomic study and ex-situ conservation of plant genetic variability of the species: 1
- Study of sexual and vegetative multiplication of rosehips: 1
- Characterization of different accessions of the Rosehip in their composition in essential oils: 1
- Control of technique cultivation of rosehips: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Develop and Improve techniques of organic horticultural production on open field (vegetable crop: potato, leaf vegetable, fruit vegetable, tree fruit) and under greenhouses (pepper, melon, tomato, lettuce): 1
- Research of integrated plant protection approach on organic production: 1
- Marketing approaches on organic system: 1
- Adaptation of cereals to stresses: 1
- Adaptation of agrumes to stresses: 1
- Adaptation of potatoes to stresses: 1
- Agronomy: 6
- Physiology: 1
- Improving (food technologies) of cereals & legumes: 1
- Animal disease control: 1
- Financial assessment of control strategies against animal diseases: 1
- Development of new control options: 1
- Annual, periannual weeds in wheat and legume - Protection of environment: 1
- Biological mode: 1
- Biotechnology: 1
- Breeding programme: 1
- Cereal: 1
- Cereal crops: 1
- Forage crops: 1
- Industrial crops: 1
- Characterisation of milk quality (standards) in Tunisia: 1
- Milk: 2
- Milk collection: 2
- Camel milk: 1
- Whole milk: 1
- Clams: 1
- Biotoxins: 1
- Detoxification: 1
- Climate change, saline water management: 1
- Compensatory growth: 1
- Growth: 1
- Alternative production systems: 2
- Economies: 1
- Pastoralism: 1
- Geomatics: 1
- Enterobacteriaceae : 1
- Epidemiology : 4
- Poultry: 2
- Immunology: 1
- Virology: 4
- Epidemiology of mastitis: 1
- Milk quality: 2
- Animal health management: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Forest decline: 1
- Forest pathology: 1
- Forest protection: 2
- Forest fires: 1
- Forest health: 1
- Forest ecology: 2
- Genetic resources conservation: 1
- Protected areas: 1
- Fertilization: 1
- Mineralization: 1
- Water: 1
- Soil resources: 1
- Mechanization: 1
- Forestry and woodland studies and ecosystem management: 1
- Dendrochronology: 1
- Silviculture: 1
- Fruit: 1
- Improvement of melon for resistance to certain viruses and to Fusarium spp. and identification of selection technique by haplodiploidization: 1
- Improvement of milk production performances (yield and composition): 1
- Insect pests: 2
- Biocontrol: 1
- Insecticide resistance: 2
- Integrated pest management: 2
- Virus vection: 1
- Kroumirie Forest: 1
- Morphological, chemical and genetically characterization of some local population of leaf and root vegetable localized in many Tunisian regions (from North to South): 1
- Natural antioxidants: 1
- Medicinal plants: 1
- Antimicrobial properties: 1
- Aromatics (chemical compounds): 1
- Biochemical compounds: 1
- Myrtus communis: 1
- Beta vulgaris: 1
- Cyperus rotundus: 1
- Food colorants: 1
- Ornamental plant: 1
- Improvement of milk quality: 1
- Improvement of meat quality: 1
- Plant pathology: 4
- Plant protection: 1
- Production and performances of barley under rainfall condition and irrigated durum wheat: 1
- Reproduction of ruminants: 1
- Salmonella : 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Escherichia coli : 1
- Campylobacter : 1
- Antibiotic resistance : 1
- Molecular biology : 1
- Spongiform encephalopathies : 1
- Abortive neosporosis : 1
- Staphylococcus aureus : 1
- Bovine mastitis : 1
- Sylviculture: 1
- Forest measurement: 1
- Nursery plants: 1
- Conservation agriculture (CA): 1
- Transfert of technology and production systems quality and safety of agricultural products; policy of offer and demand; markets and trade 1
- Bluetongue : 1
- Lentivirus: 1
- West Nile: 1
- Isolation: 1
- Equidae: 1
- Aquaculture: 1
- Enhancement of Marine Living Resources: 1
- Limnology, Hydrobiology: 1
- Marine and coastal ecosystems, Global Ecology and Modelling: 1

### The main objectives and topics of the programmes:

#### Animal Health

- Differential diagnosis of the viral disease whose epidemiology and clinical serology pictures overlap or merge like bluetongue and the viral epizootic disease. : 1
- Improvement of serologic diagnostic techniques on these disease: 1
- Isolation of staphylococcus aureus from mastitis in dairy cows: 1
- Prevalence of s. aureus in bovine mastitis: 1
- Molecular characterisation of s.aureus straines isolated: 1
- To further expand our knowledge of the epidemiology of bluetongue, African horse sickness and EHDV in the Mediterranean and Europe: 1
- To apply this knowledge to optimize the surveillance of these two culicoides-borne diseases: 1
- Detection of Spongiform encephalopathies in ruminants: 1
- To asses the prevalence of salmonella in poultry environnement in Tunisia: 1
- To assess the prevalence of salmonella in the main slaughter houses: 1
- To assess the prevalence of campylobacter in the main slaughter house. : 1
- Prevalence of cattle mastitis: 1
- Identification of risk factors for mastitis: 1
- Survey of the causative bacteria and their susceptibility to antibiotics: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### Cereals

- Improving the productivity of barley under rainfall conditions (under arid climate) and with irrigation with salt water: 1
- Socio-economic culture in barley production systems in drylands will be analyzed. 1
- Identify the main constraints and limits of the production of Barley under rainfall conditions and of the irrigated Durum Wheat. Make a proposal of a cropping itinerary for Barley and Durum Wheat (Choice of varieties, fertilization application and crop protection procedure): 1
- Control of Biotic and Abiotic Stresses of Field Crops (Cereals Pulses): 1
- Reduce the impact of fungal diseases and water stress on cereal production: 1
- Propose an efficient control method of Ascochyta blight on spring chick pea: 1
- Establish an inventory of the main viral diseases of legumes using biological, serological and molecular techniques: 1
- Quantify the effects of these diseases on the yields of the studied crops and elaborate efficient control methods. : 1
- Make available a list of the main natural enemies of aphids and other pests of legumes and propose efficient control methods: 1
- Determine the dose of Cobalt Gamma rays that allows both stimulation and root growth of wheat and chick pea. : 1
- Resistance to diseases: 1
- Improving productivity of cereal, legumes and industrial crops: 1

### Fishery & Aquaculture

- Determination of tolerable levels of biotoxin consumer: 1
- Determining periods of decontamination during toxic periods: 1
- Mastering techniques for decontamination and detoxification settings: 1
- Characterization of Tunisian biotoxins: 1

### Forestry & Pasture

- Establishment strategy of research in Rural Engineering, water and Forest: 1
- Forest decline: 1
- Forest pathology: 1
- Forest protection: 1
- Forest fires: 1
- Forest health: 1
- Knowledge of forest ecology: 3
- Economies: 1
- Pastoralism: 1
- Genetic study of forest species: 2
- Carbon and nitrogen mineralization: 2
- Biodiversity inventories: 2
- Vegetal ecophysiology: 1
- Carbon cycle: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Ecosystem Functioning: 1
- Management of Pasture: 1

### Livestock

- Appropriate production system for the breed: 1
- Diversify feed resources: 1
- Use of local feed resources in ration: 1
- Complementation of ration by local energetic and protein feed resources: 1
- Enhancing production and reproduction performances: 1
- Characterization of meat production by camelids: 1
- Production costs: 1
- Carcass quality by category (age, sex and breed) and production system: 1
- Determination of milk quality: 2
- Determination of management systems that affect milk quality: 2
- Impact of collection and transportation methods on milk quality: 2
- Evaluation of the combination or the synergism of essential oils obtained from Mediterranean plants on performances, caeca bacteria and carcass characteristics of broiler chickens: 1
- Improvement of the reproductive performances of male and female of sheep, goats and cattle: 1
- The main objective of this programme aims to study the feasibility to replace soya bean by faba bean in order to incorporate the local feedstuff in the ruminant's nutrition: 1
- Study of nutritional potentialities of local varieties of faba bean: 1
- Study the effects of incorporation of faba bean on the production levels of sheep, goats and cattle and quality of their products: 1
- Study the economic opportunities of this substitution: 1
- Impact of nutrition on milk quality and production: 1
- Increasing production of meat and milk, improving production performances, production parameters and composition of cow milk: 1

### Organic Agriculture

- Determine different steps of organic production (soil fertilization, production techniques, plant protection, harvest and marketing): 1
- Develop organic system in some potential regions (centre, north and south of the country): 1
- Improve the quote part of Tunisia in organic and horticultural crop export: 1

### Ornamental and medicinal & aromatic plants

- Strengthening research development, socio-economic actors, development of tools to support: 1
- Participation in the local development actions: 1
- Studying the effect of various treatments (scarification, Chemical and stratification) on germination of dormant seeds: 1
- Substitution of ammonitrite fertilizer by other nitrogen fertilizers: 1
- Increase the value of Tunisian medicinal and aromatic plants through processing bio-chemical analysis: 1
- The elucidation of new chemical components with biological activities from some Tunisian medicinal and aromatic plant and their incorporation in new nutritional and cosmetic models: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### Plant protection

- Distribution and molecular characterization of Tunisian biotypes of B. Tabaci on vegetables and ornamental crops: 1
- Study of insecticide resistance of biotypes: 1
- Elaborate an Integrated Pest Protection on conventional as well as on organic agriculture: 1
- Viruses epidemiology: 1
- Protect and preserve the oasis: 1
- Screening of the most important fungi: 1
- Detect the best active ingredient: 1
- Determine the appropriate intervention date: 1
- Select the most resistant varieties: 1
- Study of insect dynamic: 1
- Research and development of bioinsecticides to control the insect: 1
- Molecular study of insecticide resistance: 1
- Quality of products: 1
- Behaviour of various plants under Mateur climatic conditions (Sub- humid): 1
- Deepen knowledge about the epidemiology of WNV in Tunisia: 1
- Trying to isolate the virus and to clarify its antigenic and molecular profile: 1
- Deepening the knowledge on the biology of the vector: 1
- Diagnostic techniques of lentiviruses: 1
- Isolation and identification of enterobacteriaceae: 1
- Identification of virulence genes: 1
- Incidence of Fusarium wilts on tomato, potato and melon: 1
- Biological, morphological and physiological characterization of Fusarium species involved: 1
- Aggressiveness of pathogens & control via chemical and biological methods: 1
- Incidence of verticillium wilt on tomato, potato, eggplant, melon and other vegetable crops: 1
- Biological, morphological and physiological characterization of Verticillium species involved: 1
- Biological control with rhizobacteria, fungi, compost, compost fungi and bio-fungicides: 1
- Physiological characterization of Fusarium spp: 1
- Biological control of verticillium wilt under abiotic stress: 1
- Study of wilt (Fusarium and Verticillium wilts), post-harvest diseases (leak, atypical soft rots, pink and dry tuber rots) and diseases affecting tuber quality (Rhizoctonia solani and Colletotrichum coccodes): 1
- Aggressiveness of pathogens involved (Fusarium spp., Pythium spp., sclerotium rolfsii, Phytophthora erythroseptica, Rhizoctonia solani and Colletotrichum coccodes, Fusarium spp. and Verticillium dahliae): 1
- Cultivar behaviour, chemical and biological control: 1

### Vegetables

- Physiological response of different olive cultivars under three irrigation regimes: 1
- Study the ecology of culicoides vectors and their expansion: 1
- Safeguard local genetic inheritance, to diversify it and to improve it: 1
- Improve the profitability of the olive growing: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)





## Coordination of the Agricultural Research In the Mediterranean Area

- Develop a respectful and total protection of the environment: 1
- Yield in grains and green roughage: 1
- Possibility of using local potato seed in the growing season: 1
- Improvement of the profitability of potato crop: 1
- Collection of local accessions of the genus Citrullus: 1
- Characterisation of genetic resources (genus Citrullus): 1
- Behaviour of local accessions of the genus Citrullus under conditions of salt, drought stress and fusarium: 1
- Obtention of hybrid that can be used as rootstocks for watermelon: 1
- Behaviour of hybrid under salt, drought stress and fusarium: 1
- Define water needs of irrigated wheat varieties: 1
- Selection of the appropriate varieties: 1
- Preserve local cultivars: 1
- Characterization of agronomic potentiality: 1
- Study of affinity between rootstocks and cultivars: 1
- Preserve the local accessions of almond: 1
- Characterization of agronomic potentiality: 1
- Breeding for abiotic and biotic stress tolerance: 1
- Promote a sustainable agriculture and reduce genetic erosion and genetic vulnerability possible:1
- Promote the geothermic in greenhouse: 1
- Identification and characterization of melon viruses: 1
- Screening for resistance of local and improved melon lines to Fusarium spp: 1
- Finalization of a selection technique by haplodiplodization: 1
- Study the biological behaviour of some fruit trees: 1
- Control of technical methods in biological mode: 1
- Obtention and diffusion of biological high quality fruit: 1
- Determination of factors delaying watermelon fruit hardening: 1
- Determination of the most important fungi causing rots on apple fruit and searching for control methods: 1
- Prospecting of the coast major production regions of fig: 1
- Study the causal agent of Fig Mosaic disease: 1
- Micro propagation of virus-free plantlets: 1
- Identification, characterization and valorisation of local populations of root (carrot, turnip) and leaf (celery, parsley) vegetables: 1
- Creation of early and self-compatible cultivars with exportable high fruit quality: 1
- Additive effects of salinity and Verticillium dahliae on wilt severity and plant growth and production: 1
- Cultivar behaviour against V. dahliae under both biotic and abiotic stresses: 1
- Estimating the effect of temperature and CO2 increasing on crops under salt condition: 1

### Socio-economy

- Study the agro-economy of the DD versus CD under both rain-fed and irrigation conditions with regards to different crop sequences/rotations that concern the following traits: i) biomass of crop residues, ii) cover crops and soil fertility, iii) water dynamics and related erosion, iv) animal integration, v) crop yield protection, and vi) production economy. : 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Agricultural economics, development economics, economics of natural resources and environment, rural and human geography, rural sociology: 1
- Conservation and improvement of the natural resources: 1
- Improvement and durable management of the natural resources: 1
- Financial assessment of control strategies against animal diseases: 1

### Soil and water management, Plant Nutrition

- Optimization of the irrigation techniques: 1
- Have a sustainable agriculture - Better management of weeds - Protection of ground and surface water resources and atmosphere - study and knowledge of environmental fate of herbicide - Use of till and rotation of crops - better Management of fertilization - use of foliar fertilization associated with post emergence herbicides: 1

### Status of the programmes

To be opened within 6 months	On going, resting months	Closed
2	83	6

### The type of actions supported

Joint research projects	Single research projects	International Cooperation	Large networks	Other
66	42	37	4	0

### Average duration of individual projects (months)

< 6	6-12	13-18	19-24	25-30	31-36	37-42	43-48	49-54	55-60	60 >
0	5	0	3	0	22	1	27	0	5	6

### The types of organisations are eligible to be funded

Research Institute	Universities	Regions	SME	Large private companies	National Reference Centres	Other
71	56	8	0	4	12	0

### Any organisations which are excluded from funding

Yes	No
31	71



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

The participation of international partners possible

Yes	No	Restricted
12	3	09

Funding models

Full cost model with actual indirect costs	Full cost model with indirect flat rate costs	Funding of direct costs only, no indirect costs	Other
19	5	39	0

Legal framework of projects

Consortium agreement	Grant	Contract	Memorandum of Understanding on commissioned work	Other
39	23	16	7	3

The type(s) of funding mechanism(s) used to put the programme into practice

Call	Voluntary submission	Direct assignment	Other
34	8	44	2

The percentage of programmes funds for the indicated procurement mechanisms:

- competitive

< 25%	25-50%	50-75%	75% >
2	4	0	11

- No competitive

< 25%	25-50%	50-75%	75% >
4	4	1	10

The policy concerning intellectual property rights? The results produced in the projects

Property of the funding agency	Property of the research organisation	Property of researchers	Other
3	35	29	35

There any information and dissemination methods in place for the programmes calls

NO	Internet/website	Journals/Newsletter	Workshop /conferences	Other
16	50	24	62	12



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### Methods in place for the projects outputs

NO	Internet/website	Journals/Newsletter	Workshop /conferences	Other
21	17	20	51	11

Would you be willing to share information on your programme, under specific confidentiality agreement?

NO	Yes	With restrictions	Other
8	43	14	0

### Implementation procedures:

Who selects the main topics for the calls?

Programme owner	National committees	Stakeholders consultation conference	Scientific panels	Others
16	31	0	9	0

Main research topics for the calls decided

Priorities of the strategic research agenda	Guidelines of the Ministry	Others
30	26	2

Do you use any prioritisation analysis to decide the main topic of the calls?

Yes	No
32	7

Are guidelines provided for applicants?

Yes	No
33	3

What types of applications procedures are used?

Full-proposals	Pre-proposals + full proposals
31	7

The number of evaluators for each project

1-4	5-9	10-15	15 >
10	6	2	0



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

How are the evaluators selected/nominated?

Scientific experience on the sector	Existing Expert Register	Others
29	5	0

Origin of the evaluators

National	International	Both
17	56	11

Are evaluators anonymous to the applicant?

Yes	No
14	19

The evaluation procedure/s used

Internal	External	Internal or external evaluation	Internal reviewers	External reviewers	Meeting of expert board	Possibility for applicants to present their projects	Possibility of rebuttal by applicants	Others
11	26	5	8	2	10	4	7	0

Are evaluation tools provided to evaluators?

NO	Guidelines	Standard evaluation forms	Both	Other
4	10	5	8	7

Are the written evaluations made available to applicants?

No	Yes	Others
6	22	6

Is it possible for the applicants to comment on the evaluation?

No	Yes
15	19

The main evaluation criteria used

Relevance to objectives of programme/call	Scientific quality	Innovation	Expected benefits and use of results	Expertise of applicant	Adequacy of management and resource utilisation	Formal requirements	Costs/benefits	Others
32	31	25	23	5	17	2	10	1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### General information on programmes timeframe:

- From call opening to closing date for applications

< 5 Months	5 - 10 Months	10-15 Months	15 Months >
13	3	7	0

- From application's closing date to end of evaluation process

< 5 Months	5 - 10 Months	10-15 Months	15 Months >
13	3	0	7

- From end of evaluation process to final decision making

< 5 Months	5 - 10 Months	10-15 Months	15 Months >
11	10	1	0

- From final decision to project start

< 5 Months	5 - 10 Months	10-15 Months	15 Months >
11	11	1	0

### MAPPING OF RESEARCH INSTITUTIONS.

Information on the organisation, on the programmes and research activities (topics, timetable and characteristic of individual actions) that they're carrying out

Acronym	Name of organization
CRRA Sidi Bouzid	Centre régional de Recherche Agricole Sidi Bouzid
IRVT	Institut de la Recherche Vétérinaire de Tunisie
ISPT	Institut Sylvo-Pastoral de Tabarka
INRGREF	Institut National de Recherche en Génie Rural, Eaux et Forêts
INSTM	Institut National des Sciences et Technologies de la Mer
IO	Institut de l'Olivier
CRRHAB Chott Mariem	Centre Régional de Recherche en Horticulture et Agriculture Biologique de Chott Mariem
ENMV	Ecole Nationale de Médecine Vétérinaire de Sidi Thabet



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

ISPAB	Institut Supérieur de Pêche et d'Aquaculture de Bizerte
CRRAO Degueche	Centre Régional de Recherche en Agriculture Oasienne de Degueche
INRAT	Institut National de Recherche Agronomique de Tunisie

Organisation manages and funds agriculture research activities via:

- Programmes

Institutional	Regional	National	Trans-national	Area	International
6	4	9	2	0	3

- Cooperation activities: 10

Public	Private	National	International	Bilateral	Multilateral
7	6	10	5	6	4

- Participation to calls on specific thematic area: 6

- Voluntary submission to funding bodies : 5

- Direct assignment from funding bodies : 3

- Kind of research activity

Basic research	Applied research	Adaptive research	Demonstration plans	Technology development	Knowledge dissemination/transfer	Training
6	7	4	1	3	5	5

Who are the main users/beneficiaries of your research results?

Farmers	Production chain holders/districts	Public bodies	Technical assistance services	Local authorities	Local communities	Consumers	Distribution chain holders	Social services	Policy makers	Others
6	7	5	3	4	9	6	1	2	9	0

Are there any information and dissemination methods in place for the research activity outputs?

No Internet/website	Journals/Newsletter	Workshop /conferences	Others
1	4	5	11

What is the policy concerning intellectual property rights? The results produced are

Property of the funding agency	Property of the research organization	Property of researchers	Others
3	10	4	0



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)





## Coordination of the Agricultural Research In the Mediterranean Area

Are there any centralized facilities or services in support of the management of the projects/research activities?

No	Administrative consultancy	Factual consultancy	Methodical consultancy	Others
5	4	4	4	2

### Agro-Med research : main subject area

#### - Topics

Animal diseases : 1  
 Animal Pests And Diseases : 1  
 Animal taxonomy and geography : 1  
 Apiculture : 1  
 Aquaculture : 1  
 Bacteriology : 1  
 Economics : 2  
 Fish Culture : 1  
 Fish Products : 1  
 Fisheries : 1  
 Food Hygiene : 1  
 Forestry : 1  
 General : 1  
 Geography : 1  
 Hygiene : 1  
 Information : 1  
 Plant Production : 2  
 Plant production and protection : 2  
 Plant taxonomy and geography : 1  
 Production economics : 1  
 Protection of plants - General aspects : 1  
 Soils : 1  
 Veterinary Sciences : 1  
 Virology : 1  
 Zoology : 1

#### - Human resources : Scientists

< 25	25-50	50-75	75 >
4	1	0	1

#### - Human resources: Students, PhD, M.sc

< 25	25-50	50-75	75 >
4	0	0	2



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- Human resources: Others

< 25	25-50	50-75	75 >
3	0	0	1

**Status of the main research activities:**

- To be opened within 6 months:

< 6 months	6-12 Months	12-18 Months	18 Months >
1	0	0	2

- In progress, resting months:

< 6 months	6-12 Months	12-18 Months	18 Months >
2	1	0	2

**Typology of the main activities in place**

Joint research projects	Single research project	International cooperation	Large networks	Others
7	8	8	3	0

Is there a website in place for the main research activities?

No	Yes
7	4

## MAPPING OF RESEARCH FACILITIES.

**Facilities descriptions: Shared equipments**

- Main subject area

Agronomy: 1

Forestry: 1

- open access

No	Yes	Empty
0	3	4

- restricted

No	Yes	Empty
0	0	7



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### Facilities descriptions: Experimental stations

#### - Main subject area

Agronomy: 1

Forestry: 1

#### - open access

No	Yes	Empty
2	1	4

#### - restricted

No	Yes	Empty
0	0	7

### Facilities descriptions: Animal research facilities

#### - Main subject area

Animal ecology: 1

Biology: 1

#### - open access

No	Yes	Empty
2	0	10

#### - restricted

No	Yes	Empty
0	0	6

### Facilities descriptions: Engineering prototypes

### Facilities descriptions: Pilot plants

### Facilities descriptions : National Reference Centres

### Facilities descriptions: Renewable energy facilities

There is no renewable energy facility

### Facilities descriptions: Biohazard facilities

There is no biohazard facility

### Facilities descriptions: Database services

#### - Main subject area

Energy: 1

Forestry: 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

- open access

No	Yes	Empty
0	0	7

- restricted

No	Yes	Empty
0	0	7

### Facilities descriptions: Technology platforms

- Main subject area

- open access

No	Yes	Empty
1	0	6

- restricted

No	Yes	Empty
0	0	7

### Facilities descriptions: Others

- Main subject area

Fish Culture: 1

Fish Products: 1

Food composition: 1

- open access

No	Yes	Empty
1	0	6

- restricted

No	Yes	Empty
0	0	6

## MAPPING OF TRAINING SCHEMES.

### Master courses

- Main subject area

Bacteriology : 1

Biodiversity conservation and use : 1

Biology : 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

Cartography : 1  
 Climate change : 1  
 Climatology : 1  
 Economics : 1  
 Ecosystems management : 1  
 Entomology : 1  
 Environment : 1  
 Environmental protection : 1  
 Forestry : 2  
 Forestry - General aspects : 1  
 General : 1  
 Genetics : 1  
 Soil and soil resources : 1  
 Soil science : 1  
 Soils : 1  
 Virology : 1  
 Water resources and management : 1

### - Position's N

< 25	25-50	50-75	75 >
1	0	0	0

### PhD courses

#### - Main subject area

Bacteriology : 1  
 Biodiversity conservation and use : 1  
 Biology : 1  
 Cartography : 1  
 Climate change : 1  
 Climatology : 1  
 Economics : 1  
 Ecosystems management : 1  
 Entomology : 1  
 Environment : 1  
 Environmental protection : 1  
 Forestry : 1  
 Genetics : 1  
 Soil science : 1  
 Soils : 1  
 Virology : 1

#### - Position's N

< 25	25-50	50-75	75 >



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

1	0	0	0
---	---	---	---

### Fellowships

#### - Main subject area

Bacteriology : 1  
 Biodiversity conservation and use : 1  
 Biology : 1  
 Cartography : 1  
 Climate change : 1  
 Climatology : 1  
 Economics : 1  
 Ecosystems management : 1  
 Entomology : 1  
 Environment : 1  
 Environmental protection : 1  
 Forestry : 1  
 Genetics : 1  
 Soil science : 1  
 Soils : 1  
 Virology : 1

#### - Position's N

< 25	25-50	50-75	75 >
1	0	0	0

### Young researcher grants

#### - Main subject area

Biodiversity conservation and use : 1  
 Biology : 1  
 Cartography : 1  
 Climate change : 1  
 Climatology : 1  
 Economics : 1  
 Ecosystems management : 1  
 Entomology : 1  
 Environment : 1  
 Environmental protection : 1  
 Forestry : 1  
 Genetics : 1  
 Soil science : 1  
 Soils : 1



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)



## Coordination of the Agricultural Research In the Mediterranean Area

### - Position's N

< 25	25-50	50-75	75 >
2	0	0	0

### Senior researcher grants

There are no senior researcher grants in IRESA System.



ARIMNET ERANET Coordination Action

Grant agreement FP7- 219262

[www.arimnet.net](http://www.arimnet.net)