

# Course Curriculum of PG Programme Agriculture

- \* *Agronomy*
- \* *Agricultural Economics*
- \* *Entomology*
- \* *Extension Education*
- \* *Plant Breeding & Genetics*
- \* *Plant Pathology*
- \* *Soil Science & Agricultural Chemistry*



**Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya  
Gwalior-474002 (M.P.)**

**COURSE CURRICULUM OF PG PROGRAMME 2015-16**  
**DEPARTMENT OF AGRONOMY**

**I<sup>st</sup> Semester**

<b>Code</b>	<b>Course title</b>	<b>Credit</b>
<b>Major Courses</b>		
Agron 501	Modern concepts in crop production	3+0
Agron 504	Principles and practices of water management	2+1
Agron 511	Cropping system and sustainable agriculture	2+0
Agron 512	Dryland Farming and Watershed Management	2+1
Agron 513	Principles & Practices of organic farming	2+1
<b>Minor Courses</b>		
Soils 506	Soil biology and biochemistry	2+1
Soils 510	Remote sensing and GIS techniques for soils and crop studies	
<b>Supporting Courses</b>		
STAT 511	Statistical Methods and applied sciences	3+1
<b>Non Credit Courses</b>		
PGS 501	Library and information services	0+1
PGS 502	Technical writing & communication skills	0+1
PGS 503	Intellectual property its management in Agriculture	1+0

**II<sup>nd</sup> Semester**

<b>Major Courses</b>		
Agron 502	Soil fertility and nutrient management	2+1
Agron 503	Principles and practices of weed management	2+1
Agron 512	Dry land farming and watershed management	2+1

- Estimation of moisture index and aridity index
- Spray of anti-transparent and their effect on crops
- Collection and interpretation of data for water balance equations
- Water use efficiency
- Preparation of crop plans for different drought conditions
- Study of field experiments relevant to dryland farming
- Visit to dryland research stations and watershed projects

### **Suggested Readings**

- Das NR. 2007. *Tillage and Crop Production*. Scientific Publishers.
- Dhopte AM. 2002. *Agrotechnology for Dryland Farming*. Scientific Publ.
- Dhruv Narayan VV. 2002. *Soil and Water Conservation Research in India*. ICAR.
- Gupta US. (Ed.). 1995. *Production and Improvements of Crops for Drylands*. Oxford & IBH.
- Katyaj JC & Farrington J. 1995. *Research for Rainfed Farming*. CRIDA.
- Rao SC & Ryan J. 2007. *Challenges and Strategies of Dryland Agriculture*. Scientific Publishers.
- Singh P & Maliwal PL. 2005. *Technologies for Food Security and Sustainable Agriculture*. Agrotech Publishing Company.
- Singh RP. 1988. *Improved Agronomic Practices for Dryland Crops*. CRIDA.
- Singh RP. 2005. *Sustainable Development of Dryland Agriculture in India*. Scientific Publ.
- Singh SD. 1998. *Arid Land Irrigation and Ecological Management*. Scientific Publishers.
- Venkateshwarlu J. 2004. *Rainfed Agriculture in India. Research and Development Scenario*. ICAR.

### **AGRON 513 Principles and Practices of Organic Farming 2+1**

#### **Objective**

To study the principles and practices of organic farming for sustainable crop production.

## **Theory**

### **UNIT I**

Organic farming - concept and definition, its relevance to India and global agriculture and future prospects; land and water management - land use, minimum tillage; shelter zones, hedges, pasture management, agro-forestry.

### **UNIT II**

Organic farming and water use efficiency; soil fertility, nutrient recycling, organic residues, organic manures, composting, soil biota and decomposition of organic residues, earthworms and vermicompost, green manures and biofertilizers.

### **UNIT III**

Farming systems, crop rotations, multiple and relay cropping systems, intercropping in relation to maintenance of soil productivity.

### **UNIT IV**

Control of weeds, diseases and insect pest management, biological agents and pheromones, biopesticides.

### **UNIT V**

Socio-economic impacts; marketing and export potential: inspection, certification, labeling and accreditation procedures; organic farming and national economy.

## **Practical**

- Aerobic and anaerobic methods of making compost. Making of vermicompost
- Identification and nursery raising of important agro-forestry trees and trees for shelter belts
- Efficient use of biofertilizers, technique of treating legume seeds with *Rhizobium* cultures, use of *Azotobacter*, *Azospirillum*, and PSB cultures in field
- Visit to an organic farm

- Quality standards, inspection, certification and labeling and accreditation procedures for farm produce from organic farms

### **Suggested Readings**

- Ananthkrishnan TN. (Ed.). 1992. *Emerging Trends in Biological Control of Phytophagous Insects*. Oxford & IBH.
- Gaur AC. 1982. *A Manual of Rural Composting*, FAO/UNDP Regional Project Document, FAO.
- Lampin N. 1990. *Organic Farming*. Press Books, Ipswich, UK.
- Palaniappan SP & Anandurai K. 1999. *Organic Farming – Theory and Practice*. Scientific Publ.
- Rao BV Venkata. 1995. *Small Farmer Focused Integrated Rural Development: Socio-economic Environment and Legal Perspective*: Publ.3, Parisaraprajna Parishtana, Bangalore.
- Reddy MV. (Ed.). 1995. *Soil Organisms and Litter Decomposition in the Tropics*. Oxford & IBH.
- Sharma A. 2002. *Hand Book of Organic Farming*. Agrobios.
- Singh SP. (Ed.) 1994. *Technology for Production of Natural Enemies*. PDBC, Bangalore.
- SubbaRao NS. 2002. *Soil Microbiology*. Oxford & IBH.
- Trivedi RN. 1993. *A Text Book of Environmental Sciences*, Anmol Publ.
- Veeresh GK, Shivashankar K & Suiglachar MA. 1997. *Organic Farming and Sustainable Agriculture*. Association for Promotion of Organic Farming, Bangalore.
- WHO. 1990. *Public Health Impact of Pesticides Used in Agriculture*. WHO.
- Woolmer PL & Swift MJ. 1994. *The Biological Management of Tropical Soil Fertility*. TSBF & Wiley.

**Note : For minor courses please refer the concerned department's courses outline.**