

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

Ist Semester

Code	Course title	Credit
Major Courses		
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
Minor Courses		
Soils 506	Soil biology and biochemistry	2+1
Soils 510	Remote sensing and GIS techniques for soils and crop studies	
Supporting Courses		
STAT 511	Statistical Methods and applied sciences	3+1
Non Credit Courses		
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

IInd Semester

Major Courses		
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.
- Katyal 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.
- Venkateswarlu 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.