MAHATMA PHULE KRISHI VIDYAPEETH, RAHURI

All India Network Project on Pesticide Residues & Contaminants

1.	Name & complete address of Research Scheme/Centre	AINP on Pesticide Residues & Contaminants, Department of Entomology, PGI Building, MPKV, Rahuri -413 722 Dist. Ahmednagar
2.	Yeas of establishment	1985
3.	Major objectives/ Mandate for establishment of Research Scheme/ Centre	1. To work out safe time limits (PHI) between pesticide application and consumption of produce. 2. To monitor the pesticide residues in biotic and abiotic components of the environment. 3. To monitor pesticide residues in market and farm gate samples of food commodities. 4. To monitor pesticide residues in ground and surface water. 5. To identify crops and regions having preponderance of pesticide residues in order to focus extension efforts for Integrated Pest Management (IPM) and Good Agriculture Practices (GAP). 6. To study the decontamination of pesticides in different food commodities 7.
4.	Historical background	Pesticide residues in food commodities are of great concern and have created threat to human life and biotic and abiotic factors of the environment. However, hazards or risk to human health and ecosystem can be minimized to a large extent if pesticide residue could be kept below their prescribed maximum residue limits (MRL's). The maximum residue limit is the maximum concentration of a pesticide on a crop or food commodity resulting from the use of pesticide according to Good Agriculture Practice (GAP). In India, to overcome the problem of widespread contamination of food commodities, water, soil and biological samples with residues of pesticides, Indian Council of Agriculture Research, New Delhi initiated All India Co-ordinated Research Project on Pesticide Residue & Contaminants during 1984-85. Mahatma Phule Krishi Vidyapeeth, Rahuri is the premier Agricultural University in Maharashtra established during 1969 for the service to farmers through Agricultural Education, Research and Extension. The jurisdiction of Western Maharashtra is spread over 10 districts viz. Jalgaon, Nandurbar, Dhule, Nashik, Ahmednagar, Pune, Solapur, Satara, Sangali, Kolhapur. This region is known for horticultural hub of the state. The fruits like grape, pomegranate, banana, guava, sapota, papaya and custard apple and mango are predominantly grown in the region. The vegetables cabbage, cauliflower, capsicum, tomato,

		okra and brinjal are also grown in the region. The fruits and vegetables produced in the region are marketed at Vashi market. The produce is also supplied to adjoining states and even to North Indian states including New Delhi. Maharashtra accounts for approximately 70 per cent of total export of grape as well as pomegranate from India. The region is also known to have higher pesticide consumption to protect the crop from various pests and diseases. However, the environmental and public health consequences of indiscriminate and extensive pesticide usage are well established. Food safety has become critical for all stakeholders in the value chain and consumers have to be assured that they are not exposed to an unacceptable level of pesticide residues. In order to exploit full potential of pesticides in agriculture and public health programmes without adversely affecting the environment, it is essential to study the facts about pesticide behavior and their persistence / dissipation under Indian conditions. There is also a need to know the status of pesticide residues to ensure the safety to the consumer and to overcome the trade barriers at international level. The Government of India regulates the pesticide residues detected in various food items through Prevention of Food Adulteration Act (now through Food Safety and Standards Act, 2005). Due to increasing public awareness and legalities involved in pesticide residues in food commodities, there was a need to harmonize the monitoring of pesticide residues in the country. In view of this, The Department of Agriculture, Ministry of Agriculture & Farmers Welfare had started a central sector scheme, "Monitoring of Pesticide Residues at National Level" (MPRNL) in food commodities and environmental samples during 2005-06. The different stakeholders of this project are Ministry of Agriculture, Indian Council of Agriculture Research, Ministry of Health and Family Welfare, Ministry of Environment and Forest, Council of Scientific and Industrial Research, Ministry of Chemical and Fertilizer, Ministry of Commerce and State Agricultural Universities across the country. AINP on Pesticide Residues, Department of Agril. Entomology, MPKV, Rahuri is one of the participating laboratories under this Central Sector scheme and monitoring different agril. commodities viz. fruits, vegetables, cereals, pulses, milk and water from different selected locations of Western Maharashtra. Further, All India Network Project on Pesticide Residues & Contaminants functioning under this Department is involved in generating data on dissipation pattern of new pesticides which is utilised for developing safe protocol for Good Agricultural Practices since 1985. The pesticide residue laboratory is accredited by NABL as per ISO/IEC 17025:2017. Presently, the laboratory has limited scope of 50 pesticides due to lack of LCMS/MS facility. With the advancement of equipment facilities, the laboratory can expand it's scope upto 150 pesticides.

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<tr><td>5.</td><td>Details of the sanctioned posts</td><td>
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<tr><td>Sr.No.</td><td>Name of sanctioned post</td><td>No. of posts</td></tr>
<tr><td>1.</td><td>Residue Analyst (Asso. Prof.)</td><td>01</td></tr>
<tr><td>2.</td><td>Asstt. Residue Analyst (Asstt. Prof.)</td><td>02</td></tr>
<tr><td>3.</td><td>Tech. Asstt. (JRA)</td><td>01</td></tr>
<tr><td>4.</td><td>Tech. Asstt. (Agril. Asstt.) 02</td><td></td></tr>
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<tr><td>6.</td><td>Significant/innovative activities and programmes implemented by the Research Scheme/ Centre</td><td>All India Network Project on Pesticide Residues & Contaminants conducts industry sponsored field trials for generation of residue and persistence/ dissipation data on certain crop-pesticide combinations as per the guidelines of CIB & RC. Pesticide residue data so generated is utilized for fixation of MRL and label claim expansion or registration of products for use in the country. Since 1985, a total of <u>105</u> multi-location supervised sponsored field trials on <u>40</u> pesticides were conducted by AINP on Pesticide Residues, MPKV, Rahri centre.</td></tr>
<tr><td>7.</td><td>Major improved hybrid verities, agriculture technologies developed at Research Scheme/ Centre</td><td>The 75 multi-location supervised field trials over a period of last ten years 13 lable claims & safe waiting periods on various pesticide-crop combinations have been approved by CIB & RC for their commercial use in the country.</td></tr>
<tr><td>8.</td><td>Major agricultural technological recommendations released by Research Scheme/ Centre</td><td>On the basis of pesticide residue data generated by conducting over 75 multi-location supervised field trials following GAP over a period of last ten years., 13 lable claims & safe waiting periods on various pesticide-crop combinations have been approved by CIB & RC for their commercial use in the country.</td></tr>
<tr><td>9.</td><td>Future road map of the research</td><td>1. To increase awareness among the farmers regarding safe use of pesticides and to rejuvenate disturbed ecological balance
2. To reduce the health hazards and environmental pollution caused due to pesticides
3. To work out safe waiting periods of pesticides in different food commodities
4. To minimize toxic residues and facilitate the export of farm produce
5. To monitor the pesticide residues in biotic and abiotic compounds of environment.
6. To maintain database on pesticide residues and to provide guidelines in this regard to farmers, researchers and extension workers.
7. To evolve residue proof pesticide spray schedule in different crops.
8. To study the long-term effects of pesticide residues on soil fertility and microbial biomass.
9. Evaluation of new pesticides for their residues and Pre-Harvest Intervals.
10. The data generated by the scheme will help in regulating pesticide usage. This will support to sensitize the stake holders on pesticide use / safe use, pesticide residue and food safety, and regulatory issues related to pesticide residues.</td></tr>
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10.	Measures required for improvement/ strengthening of the Research Scheme/ Centre	Advanced training given to the scientist and technical staff working in the project for strengthening /development of the scheme. Upgradation of old instruments with advance technology.
11.	Photographs (jpeg) of historical and innovative activities of the Research Scheme/ Centre	Attached

महात्मा फुले कृषि विद्यापीठ, राहुरी

अखिल भारतीय समन्वित किडनाशक अंश पृथ:करण योजना

१.	संशोधन योजना नाव व पूर्ण पत्ता	:	अखिल भारतीय समन्वित किडनाशक अंश पृथ:करण योजना, किटकशास्त्र विभाग, पदव्युतर महाविद्यालय इमारत,मध्यवर्ती परिसर, मफुकृवि, राहुरी
२.	स्थापना वर्ष	:	१९८५
३.	संशोधन योजना स्थापनेबाबतचा प्रमुख उद्देश	:	१. पश्चिम महाराष्ट्रातील स्थानिक बाजारपेठेतील तसेच निर्यातक्षम फळे व भाजीपाला पिकातील किटक नाशक अंश तपासणी आंतरराष्ट्रीय मानकानुसार करणे. २. पदव्युत्तर विद्यार्थ्यांच्या माध्यमातुन फळे व भाजीपाला पिकातील किडनाशक अंशाचे प्रमाण सुरक्षित पातळीपर्यत कमी करण्यासाठीच्या घरगुती पध्दतीचा अवलंब करण्यासाठीचे संशोधन करणे. ३. नवीन विकसित होणा-या किटकनाशकांच्या देशांतर्गत नोंदणीसाठी आवश्यक असणा-या किटकनाशक अंशाच्या - हासाचा अखिल भारतीय समन्वित किटकनाशक अंश प्रकल्पाच्या (केंद्र व राज्यशासन पुरस्कृत) माध्यमातुन अभ्यास करणे.
४.	ऐतिहासिक पार्श्वभूमी	:	किटकनाशकांचा आदर्श शेती पदधतीचा अवलंब करुन किटकनाशकांचा अंश कमाल अवशेष मर्यादेपेक्षा कमी ठेउन, नविन किटकनाशकांच्या देशाअंतर्गत नोंदनीसाठी अवश्यक असना-या किटकनाशकांच्या अंशाचा -हाशांचा अभ्यास करण्यासाठी अखिल भारतिय समन्वयीत किडनाशक अंश पुथ्थ करण योजना १९८४-८५ पासून मफुकृवि येथे सुरु करण्यात आली आहे.
५.	मंजुर पदांचा तपशील	:	१. किडनाशक अंश विश्लेषक -१ २. सहाय्यक किडनाशक अंश विश्लेषक -२ ३. कनिष्ठ संशोधन सहाय्यक -१ ४. कृषि सहाय्यक -२
६.	संशोधन योजनेमार्फत राबविण्यात आलेले वैशिष्टयेपुर्ण उपक्रम	:	सन २०१४ मध्ये प्रयोगशाळेस ISO/ISE १७०२५:२०१७ हे राष्ट्रीय नामांकन (NABL Accridation) प्राप्त झाले असून प्रयोगशाळेने आजपर्यत सातत्य राखले आहे.

७.	संशोधन योजनेमार्फत प्रसारीत करण्यात आलेले वैशिष्टयपुर्ण सुधारीत/संकरीत वाण, कृषि तंत्रज्ञान	:	योजनेद्वारे केलेल्या ७५ फळे, भाजीपाला व इतर पिकावर केलेल्या किडनाशक अंश विश्लेषणाच्या कमाल अवशेष मर्यादा व प्रतिक्षा कालावधीच्या संशोधनावर आधारीत नवीन १३ किटकनाशकांची केंद्रीय किटकनाशक नोंदणी समितीच्या मान्यतेने शेतकऱ्यांसाठी विविध पिकावर किड व रोग यांच्या नियंत्रणासाठी शिफारशी करण्यात आली आहे.
८.	संशोधन केंद्रामार्फत प्रसारीत करण्यात आलेले वैशिष्टयपुर्ण कृषि संशोधन शिफारशी	:	विविध कृषी पिकावरील किडनाशक अंश पृथ्थकरण प्रयोयाच्या निष्कर्षनूसार मागील दहा वर्षात १३ किटकनाशकांचे शिफारशी राष्ट्रीय स्तरावरील केंद्रीय किटकशास्त्र मंडळ आणि नोंदणी समिती फरीदाबाद यांच्यकडुन मान्यता देउन राष्टीय शिफारस करण्यात आले आहे.
	पुढील संशोधनाची दिशा	:	१. आधुनिक उपकरण सुविधेद्वारे आंतरराष्ट्रीय मानकानुसार किडनाशक अंशावर आधारीत पायाभुत व उपयोजित संशोधन करणे. २. आदर्श शेती पध्दतीवर आधारीत फळे व भाजीपाला पिकामध्ये विविध किटकनाशकांच्या वापरासंबंधी सुरक्षित नियमावली तयार करणे. ३. विविध खाद्यपदार्थामधून (फळे, भाजीपाला), कृत्रिम राईपनर्स, प्रिझरवेटिव्ह, अवजड धातु, प्रतिजैविके इ. चे अवशेष शोधण्याच्या पायाभूत संशोधनास चालना देणे. ४. देशांतर्गत वापरासाठीच्या तसेच निर्यातक्षम फळे व भाजीपाला पिकातील किटकनाशक अंश तपासाणीसाठी एकाच वेळी अनेक किअकनाशक अंश तपासणी करण्यासाठीच्या पध्दतीचे मानकीकरण करणे.
१०.	संशोधन योजना सुधारणेसाठी /बळकटीकरणासाठी आवश्यक असलले उपाय	:	१. प्रयोगशाळेत कार्यरत मनुष्यबळाचे विविध अद्यावत प्रशिक्षणद्वारे बळकटीकरण करणे. २. ठराविक कालावधीनंतर नादुरूस्त तसेच जुन उपकरणाचे अद्यावतीकरण करणे.
११.	संशोधन योजनेचे ऐतिहासिक नाविण्यपुर्ण ठळक घडामोडीचे क्षणचित्रे/फोटो		