

LIST OF PARB COMPLETED PROJECTS

| Sr. # | Project No. | Title of Project |
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| 1. | 12 | Utilizing Bacterial ACC-Deaminase Biotechnology to Enhance Water Use Efficiency for Sustainable Production of Cereals |
| 2. | 13 | Integrated pest management (IPM) of aphids on wheat crop (ABRI), |
| 3. | 16 | Genetic Improvement of Groundnut for Herbicide and Disease Resistance |
| 4. | 18 | Molecular mapping of quantitative trait loci determining salinity tolerance at maturity stage in indica rice |
| 5. | 24 | Basic seed potato production of new varieties SH-5, FD 35-36 & FD 69-1 from in vitro propagated material & its demonstration in the farmer's fields |
| 6. | 27 | Introgression of cotton leaf curl virus resistance genes from gossypium arboretum (Desi Cotton) into gossypium hirsutum (Upland Cotton) |
| 7. | 28 | Introgression of cotton leaf curl virus resistance genes from gossypium Arboretum (Desi Cotton) into gossypium hirsutum (Upland Cotton) |
| 8. | 34 | Development of nutrient efficient wheat germplasm for food scrutiny in rainfed areas of Pakistan |
| 9. | 40 | Development of Drought Tolerant Variety Of Cotton |
| 10. | 49 | Control of bacterial leaf blight (BLB) in rice through management and resistant varieties (RRI), |
| 11. | 50 | Developing Parboiling Technology and Rice Varieties Suitable for Parboiling |
| 12. | 51 | Standardization and Popularization of Direct Seeding to Increase Rice Productivity & Resource Conservation |
| 13. | 101 | Development Of Transgenic Sugarcane (<i>Saccharum Officinarum</i> L.) Against Major Abiotic Stresses |
| 14. | 103 | Wheat Crop Improvement For Drought Tolerance Through Biotechnology |
| 15. | 120 | Improvement of chickpea productivity through the identification of drought tolerant and disease resistant chickpea genotypes for marginal lands |
| 16. | 127 | Novel Approach To Generate Wide Spectrum Virus Resistance To All Begomoviruses Infecting Cotton And Other Cultivated Crops SBS, P.U, Lahore |
| 17. | 139 | Biological management of root knot nematodes on vegetables in Punjab |
| 18. | 141 | Documenting and mitigating the impact of pesticides and heavy metals residues on vegetables |
| 19. | 143 | Exploiting controlled atmosphere technology potential for extended storage and shipping of fresh produce to international markets |
| 20. | 144 | Transgenic approach to improve drought and salinity tolerance in wheat |
| 21. | 150 | Characterization of Native and Potential Mango Varieties in Relation to Ceratocystis Mangineceans and Other Economic Traits |
| 22. | 152 | Development, Optimization And Technology Dissemination Of Indigenous |

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| | | Based Skin Coating Material (SCM) For Fruits And Vegetables |
| 23. | 161 | Safeguarding Pakistani Wheat From Potential Disease Threats (WRI) |
| 24. | 163 | Sugarcane plant improvement through traditional and modern breeding technologies |
| 25. | 165 | Evaluation of phosphoric Acid (52% P ₂ O ₅) as an alternative to commercial phosphate fertilizers and enhancing its efficiency for higher crop productivity |
| 26. | 175 | Micro propagation of date palm through tissue culture |
| 27. | 176 | Optimization and Standardization Of Operational Parameters Of Hot Water Treatment (HWT) System To Control Post Harvest Diseases And Insects Of Mangoes |
| 28. | 179 | Clonal propagation of guava through wood cuttings |
| 29. | 185 | Standardization of Olive Propagation and its value addition techniques (BARI) |
| 30. | 188 | Development Of Wheat With Low Phytate For Increasing Bioavailability Of Iron And Zinc |
| 31. | 190 | Development of tomato hybrids suitable for sowing in tunnels and open fields of Punjab |
| 32. | 191 | Genetic Improvement of cotton for herbicide and bollworm tolerance |
| 33. | 193 | Genetic Improvement of Sugarcane for Herbicide and Borer Resistance |
| 34. | 195 | Development, evaluation and promotion of cost effective and low polluting fish feed for <i>labeo rohita</i> (roho fish) |
| 35. | 203 | Development and comparison of innocuity and potentiating effect of three oil adjuvant against HS disease caused by <i>Pasteurella Multocida</i> in buffalo/cattle |
| 36. | 207 | Economics of Livestock Production and its marketing in Punjab |
| 37. | 210 | Enhancing performance of buffalo through improved feeding management at different physiological stages upto first lactation |
| 38. | 212 | Improvement of lentil germplasm for high seed yield and disease resistance |
| 39. | 213 | Development and dissemination of production technology of Sugar leaf (<i>Stevia rebaudiana</i>) |
| 40. | 215 | Development and Commercialization of Cotton Leaf Curl Virus resistant/tolerant indigenous transgenic Bt and Glyphosate resistant Cotton hybrids |
| 41. | 223 | Development, evaluation and promotion of milk replacer for buffalo calves |
| 42. | 227 | Development of vaccine for the control of buffalo and cattle calf diarrhea (UVAS, Lahore) |
| 43. | 235 | Development & commercialization of indigenous Bt and herbicide |
| 44. | 240 | Development of meat type Japanese quail with higher body weight (<i>Coturnix coturnix Japonica</i>) acclimatized to indigenous managerial conditions through 6 generations of selective breeding programme |
| 45. | 258 | Enhancement of cost effective mutton production through genetically enhanced prolificacy management |
| 46. | 263 | Development of Eggs laying chicken lines for backyard poultry production |

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| 47. | 272 | Improving Nitrogen Use Efficiency In Agriculture Using Urease Enzyme Inhibitors |
| 48. | 288 | Development of Sorghum-Sudan Grass Hybrids for Better Forage Yield and Quality under normal and Drought Stress |
| 49. | 320 | Preparation and field evaluation of thermostable Newcastle disease vaccine |
| 50. | 335 | Development, evaluation and production of distillery yeast sludge (DYS) based cost effective feed and prebiotic agent for poultry |
| 51. | 337 | Improvement of salt tolerance in wheat through biotechnology |
| 52. | 342 | Exploration Of Rice Bran Oil Production (RRI) |
| 53. | 358 | Development, Evaluation and promotion of herbal anticoccidial (s) for the control of coccidiosis in poultry |
| 54. | 379 | Development Guidelines For Improving Water Use Efficiency And Testing Of Locally Developed Water Soluble Fertilizers Under Drip Irrigation System For Various Crops |
| 55. | 426 | Development of transgenic cotton with multiple genes resistant to cotton leaf curl virus |
| 56. | 437 | Development of Bio-pesticides for the control of soil-borne diseases of Tomatoes and Chillies caused by Pythium and Phytophthora Spp. (PMAS Arid Rwp) |
| 57. | 439 | Improvement of Value chains and tradability of farmers' Produce |
| 58. | 445 | Redesigning, Fabrication and Adoption of a Self-Propelled Sugarcane Stripper for Improving Labour Productivity and Sugar Recovery |
| 59. | 453 | Use of Distillery Waste Product as a Growth Promoter in early weaned Male Calves |
| 60. | 469 | "Nutritional enhancement of agricultural wastes and its use in animal feeding" |
| 61. | 532 | Development of short duration, high yielding and disease resistant mungbean cultivars for Rice-Wheat Cropping system |
| 62. | 563 | Development of Drought Tolerant doubled haploid maize hybrid for Plant Breeding & Genetics |
| 63. | 572 | Diagnostic Survey for newcastle disease (ND) in Poultry |
| 64. | 582 | Utilization of poultry farm litter and dead birds compost as livestock feed ingredient and agriculture fertilizer |
| 65. | 594 | Collection, characterization & maintenance of Germplasm of indigenous forest, medicinal and endangered plants in Punjab |
| 66. | 600 | Development of short duration, sunflower hybrids with better yield |
| 67. | 610 | Bovine theileriosis: its molecular epidemiology and trials of recombinant vaccine |
| 68. | 638 | Development of Inactivated Polyvalent Vaccines for the control of Mastitis in Dairy Cattle |
| 69. | 888 | A Comprehensive Integrated Scientific Approach for the Development of Sustainable Management Strategies of Pink Bollworm (<i>Pectinophora Gossypiella</i>) |
| 70. | 889 | Management of Whitefly by Integrated Strategies and Development of Resistant Cotton Germplasm through Genetic Engineering |

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| 71. | 892 | Import of Olive Oil Extraction Machinery for Improving Working Efficiency and Olive Oil Recovery |
| 72. | 896 | Analytical studies to determine the deteriorating factors affecting the export quality of kinnow/mandarin fruit |
| 73. | 899 | Feasibility of growing organic cotton in potowar area |
| 74. | 901 | Survey/Monitoring of Wheat Blast Disease in Punjab Pakistan |
| 75. | 902 | Diagnostic Survey of Plant Defense controllers (Beneficials) in District Sahiwal |
| 76. | 903 | Diagnostic Survey to ascertain ecological reasons of Aphid attack on Wheat in different ecological zones |
| 77. | 908 | DNA barcoding/fingerprinting for identification of Cooton, Wheat, Maize, Potato, Tomato and Date Palm varieties |
| 78. | 911 | Diversification of cropping by promotion of Sohanjna (Moringa olifera), Caster bean, Barlay, Taramera (Eruca sativa), Mustard & Pearl Miller (Bajra) in lesser cholistan |
| 79. | 919 | Nutrients management to control citrus decline |
| 80. | 921 | Advance Training Programme in UK for Up-Skilling Punjab Agriculture Extension Staff |
| 81. | 924 | Acquisition of Advance Technologies for Cotton Production and Characterization of Cotton Germplasm and Acquisition of Advance Technologies for Rearing of Beneficial Insects for Biological Control of Cotton Insect Pests in Pakistan |
| 82. | 926 | Evaluation of Efficacy of PB Ropes in Different Ecological Zones of Punjab |
| 83. | 890 | Training of Agriculture Extension Wing, Federal seed certification & Registration department and private sector personel in detection, identification and quantification of BT cotton |
| 84. | 930 | Evaluating Impact of Subsidized Inputs on the Cost of Cotton Production in Punjab Province |
| 85. | 932 | CRISPR/Cas9 based virus resistance in cotton |
| 86. | 933 | Genetic engineering for enhancing salinity tolerance in wheat |
| 87. | 934 | Agricultural Input Marketing in Pakistan: Implications for Food Security |
| 88. | 936 | Transgenic Approaches for the Development of Drought and Salt Tolerance in Wheat |
| 89. | 937 | Genetic Improvement of Sorghum as Biofuel Feedstock Using High Throughput Phenomics and Genomic Approaches |
| 90. | 938 | Identification of Drought responsive genes through Transcriptional profiling of drought responses in Chickpia (Cicer arietinum L.) |
| 91. | 939 | Prediction of Sustainable Soil and crop management practices under climate change scenarios in upland of Baluchistan |
| 92. | 940 | Climate smart wheat: Development of heat and drought tolerant wheat for Pakistan |
| 93. | 941 | Implementing climate-smart dry chain technology for improving livelihoods of the maize farming community in Pakistan. |
| 94. | 942 | “Modeling approach for assessing the impact of climate change on growth |

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| | | and yield of wheat and groundnut and possible adaptation/management strategies under rainfed conditions” |
| 95. | 943 | Metagenomics of Mosquito Vectors and Abundance of Mosquito-borne Pathogens in different Agro-Geoclimatic areas of Punjab, Pakistan |
| 96. | 944 | Variable rate agro-chemical application system in citrus orchards using on-the-go sensor |
| 97. | 945 | Sensor based precision irrigation systems for improving water productivity of cereal crops |
| 98. | 947 | Designing and Implementing Irrigation Management Information System using Cellular Communication Network in the selected area of Punjab |
| 99. | 948 | Use of ICT in Marginal and Disadvantaged regions as an alternate strategy for agricultural technology transfer: challenges and opportunities |
| 100. | 949 | Youth And Gender Mainstreaming In Agricultural Activities Through Need Based Capacity Building In Punjab and KPK |
| 101. | 950 | Developing Climate-resilient plant-based recombinant subunit vaccine against Foot and Mouth Disease Virus of livestock |
| 102. | 951 | Improvement of berseem clover (<i>Trifolium alexandrinum</i>) seed quality by managing fungal seed infections and infestations with a special emphasis on stem and crown rot |
| 103. | 952 | Resistance gene analogues based molecular identification for dieback disease resistance in Shisham (<i>Dalbergia sissoo</i>) |
| 104. | 953 | Development of DNA based markers for identification and improving food safety of meat and meat products |
| 105. | 954 | Integrated management of guava (<i>Psidium guajava</i> L.) dieback in Pakistan |
| 106. | 955 | Production and dissemination of heat tolerant rural chicken for egg and meat production |
| 107. | 956 | Microbial based Pest management Program for Tephritid Fruit flies |
| 108. | 957 | Improving fruit quality and reducing postharvest losses in strawberry fruit |
| 109. | 958 | Development of drought and heat tolerant wheat germplasm by dynamic assembly of leaf surface structural traits to self-irrigate with fog water |
| 110. | 959 | Rapid development of high yielding drought tolerant line of wheat through introgression of stable QTLs/Genes based on novel 90K Iselect snp ASSAY AND Circular Consensus Sequencing (CCS) |
| 111. | 960 | Efficient Management of fruit flies (<i>Bactocera</i> spp.) by nano based pheromone trap technique |
| 112. | 961 | Increasing soybean adaptability, yield and oil content by conventional plant breeding and genetic improvement practices |
| 113. | 962 | Screening of Exotic and Local Accessions for the development of Forage and Seed Production Technology of Alfalfa |
| 114. | 963 | Development of solar assisted multi-crop dryers and energy efficient storage structures for value addition and food security |
| 115. | 964 | Genotyping and development of heat stress tolerant cotton germplasm with enhanced quality traits |

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| 116. | 965 | Characterization of Dalbergia sisso and Dalbergia latifolia open pollinated seed progenies for dieback tolerance |
| 117. | 966 | Composite flour technology; A step towards managing malnutrition and food security in Pakistan |
| 118. | 967 | Policy perspectives regarding value Chain and marketing issues of Apricot and Apple |
| 119. | 968 | Farm to Market Policy options for the promotion of Chickpea in Punjab, Pakistan |
| 120. | 969 | Commodity analysis of selected vegetables i.e. onion, chillies, potatoes and tomatoes |
| 121. | 970 | Policy paper on cotton: The back bone of agricultural sector and textile industry |
| 122. | 971 | Policy paper on high value crops (Guava and Strawberry): Constraints and Opportunities |
| 123. | 972 | Policy Paper of Oilseed Crops: Problems and Prospects |
| 124. | 1014 | Evaluating the utilization of camel milk as food source in cholistan and its socioeconomics impact on camel herders |
| 125. | 1054 | Perception And Economic Assessment of Recent Policy Intervention for Expanding Canola Production in Punjab Pakistan |