

NATIONAL ROOT CROPS RESEARCH INSTITUTE, UMUDIKE

2010 PROPOSALS AND PROGRAMME OF WORK

CASSAVA PROGRAMME

PROJECT 1: GENETIC IMPROVEMENT STUDIES

C.1.1.1: Breeding including multi-location and on farm pre-release trials and multiplication of breeder's foundation stocks.

Researcher: Egesi, C.N., F.O. Ogbe, N.J. Amanze, E. Okogbenin, S.C. Njoku, D. Njoku, U.J. Ukpabi and Oti, E.

Objectives: 1. To breed high quality cassava varieties
2. To test the performance of the newly bred cassava varieties multilocationally

Sponsor NRCRI

Status: On-going

C.1.1.2: Marker-aided selection for genetic improvement of cassava

Researchers: Egesi, C.N., E. Okogbenin, O.N. Eke-Okoro, K.Shuaibu, E. Mbanaso, D.Njoku, C.Nwadili and M Fregene

Objective: To breed high yielding, disease resistant cassava varieties using biotechnology

Sponsor: NRCRI

Status: On-going

C.1.1.3.: Combining ability estimates of elite cassava clones in Nigeria for agronomic traits and yield.

Researchers: Okogbenin, E., C.N. Egesi, K. Ogundapo and S.C. Njoku.

Objective: To breed high yielding and disease resistant cassava varieties using elite cassava clones in Nigeria.

Sponsor: NRCRI

Status On-going

C.1.1.4: Breeding for farmers' preferred cassava varieties

Researchers: Egesi, C.N., Okogbenin, E., Onyeka, J., Ogbe, F.O., Eke-Okoro, O.N., Amanze, N., Njoku, S.C., Nwadike, C., Chukwu, L. and I Onyekwere.

Objectives:

1. To breed for early maturity varieties
2. To breed for drought tolerant varieties.
3. To breed for low cyanide varieties.

Sponsor: NRCRI

Status: On-going

C.1.1.5: Physiological studies to enhance selection stable cassava varieties

Researchers: Egesi, C.N., Okogbenin, E., Onyeka, J. and Eke-Okoro, N.

Objective: To breed for high and stable yield

Sponsor: NRCRI

Status: New

C.1.1.6 Identification of sources of resistance to cassavas bacteria blight

Researchers: To develop CBB resistant germplasm by selection from NRCRI/IITA Genebank

Objective: To develop CBB resistant germplasm by selection from NRCRI/IITA Genebank

Sponsor: NRCRI/Externally funded

Status: New

C.1.1.7: Evaluation of delayed post –harvest physiological determination of cassava genotype from Latin America

Researchers: Egesi, C., Okogbenin, E, Ewa, F, Onyeka, J, Eke-Okoro, O.N, Amanze, A, Njoku D, Njoku, S, Nwadili, C, Onyekwere, I, Chukwu L. and Ukenye E.

Objective: To breed for delayed post-harvest losses

Sponsor: NRCRI

Status: New

C.1.1.8 Genetic improvement of cassava for enhanced Beta-carotene in Nigeria.

Researchers: Egesi, C., Okogbenin, E, Ewa, F, Onyeka, J, Eke-Okoro, O.N, Amanze, A, Njoku D, Njoku, S, Nwadili, C, Onyekwere, I, Chukwu L. and Ukenye E.

Objective: To breed for enhanced vitamins

Sponsor: NRCRI

Status: New

C.1.1.9. Breeding for drought tolerance

Researchers: Egesi, C., Okogbenin, E., Ewa, F. and Onyeka J.

Objective: To breed cassava for the arid environment

Sponsor: NRCRI

Status: New

C.1.1.10: Development of partial in bred lines for the production of hybrid cassava.

Researchers: Egesi, C.N. and Okogbenin, E.

Objective: To develop partial in bred lines for the production of hybrid cassava.

Budget: N150,000

Sponsor: NRCRI

Status: New

C.1.1.11: Improvement of elite gene pools for multiple disease resistance and yield.

Researchers: Egesi, C.N. and Okogbenin, E.

Objective: To improve NRCRI elite gene pools for multiple disease resistance and yield.

Sponsor: NRCRI

Status: New

PROJECT 2: AGRONOMY

C.1.2.1 Effect of cassava varieties on the soil resource base and the performance yield of subsequent crop.

Researchers: Njoku S.C., Egesi, C., A.O. Ano

Objective: To determine the effect of cassava varieties on the soil resource base and the performance and yield of subsequent crop.

Sponsor: NRCRI

Status: New

C.1.2.2: Effect of VIORYL (water soluble) Fertilizer on the performance and yield of cassava.

Researchers: A.O. Ano, Njoku D, and Njoku S.C

Objective: To determine the effect of VIORYL fertilizer on the performance and yield of cassava

Sponsor: NRCRI

Status: On-going

C.1.2.3: Investigation on the efficacy of perforated and un-perforated guinea grass thatch, jute and polyethylene bags in long term preservation of cassava stem.

Researchers: O.N. Eke-Okoro; E. Oti.

Objective: To develop a suitable long term cassava stem storage method

Sponsor: NRCRI

Status On-going

C.1.2.4: The response of ten-newly released cassava varieties to direct planting of 2-node stakes for cassava stem multiplication.

Researchers: Njoku S.C Egesi, C.N. and O.N. Eke-Okoro;

Objective: To determine the response of the newly released cassava varieties to direct planting of 2 node stakes for cassava stem multiplication.

Sponsor: NRCRI

Status: On-going

C.1.2.5: Studies on soil fertility management, agronomic practices pest and disease control for sustainable cassava production on short fallow regimes.

Researchers: Ano A.O., Eke-Okoro; O.N.Chukwu, L Onyekwere, I, Onyeka, J, Obasi, M. Onunka, N..Njoku, S Nwadi, C. Ewuziem J. and C. Ehisianya.

Objective: To determine effective soil management practices that will ensure optimum cassava yield.

Sponsor: NRCRI

Status: On-going

C.1.2.6: Effect of heavy metals on the productivity of cassava genotypes

Researchers: Ano, A.O., Eke-Okoro O.N.; and Egesi, C.N.

Objective: To determine the effect of heavy metals on the productivity of cassava genotypes

Sponsor: NRCRI

Status On-going

C.1.2.7: Determination of sources and rate of poultry manure for use in cassava stem production in Nigeria.

Researchers: Eke-Okoro, O.N., Njoku, S.C. and Onyekwere I.

Objective: To determine the appropriate levels of poultry manures for cassava stem.

Sponsor: NRCRI

Status New

C.I.2.8. Studies on complementary macro-and micro-nutrient management for sustainable cassava production and nutrient zonal quality.

Researchers: Ano, A.O. Eke-Okoro, O.N.,Chukwu L., Onyekwere I., Obasi, M.N., Okorochoa, E.O.A., Onyeka, J. and Omodamire, R.

Objective: To determine the effect of combined use of macro –nutrient and micro – nutrient on yield and quality of cassava roots.

Sponsor: NRCRI

Status: New

C.1.2.9: Evaluation of different levels of biopesticides (plant extract) on root Knot nematodes on cassava.

Researchers: Okorochoa, E.O.A. and Nwauzor E.C.

Objective: To determine appropriate level of biopesticide that will control root knot nematodes in cassava.

Sponsor: NRCRI

Status: New

C. 1.2.10: Effect of neem based fertilizer on the performance and yield of cassava

Researchers: Ano. A.O., Eke-Okoro, O.N., Onyekwere, A.N., and Onyeka, L

Objective: To determine the effect of neem based fertilizer on the performance and growth of cassava.

Sponsor: NRCRI

Status: New

C.1.2.11: Effect of “earth care” fertilizer on the soil resource base and yield of cassava

Researchers: Ano. A.O., Eke-Okoro, O.N., Onyekwere, A.N., and Onyeka, L

Objective: To determine the effect of “earth care” fertilizer on the yield of cassava.

Sponsor: NRCRI

Status: New

PROJECT 3: MECHANIZATION OF CASSAVA PRODUCTION

C.1.3.1: The use and economics of irrigation to supplement rain in cassava Stem production.

Researchers: Tolubanwo, H.C., O.N. Eke-Okoro; Okenwa, B.U. and Akinpelu, A.O.

Objective: To determine the effectiveness of using irrigation to supplement rain in cassava stem production

Sponsor: NRCRI

Status: On-going

C.1.3.2: Design development and evaluation of farm gate machine for cassava stake production.

Researchers: Ikejiofor, M.C. Tolubanwo, Kadurumba, H.E., O.N. Eke-Okoro; Okwesa, E.C. and Njoku,S.C.

Objective: To design develop and evaluate farm gate machine for cassava stake production

Sponsor: NRCRI

Status: New

PROJECT 4: SOCIO-ECONOMICS

C.1.4.1 Economics analysis of cassava production at NRCRI Umudike.

Researchers: Akinpelu, O.A. Okoye, B.C. Ogbonna M.C., and Asumugha, G.N.

Objective: To determine the economic of cassava production at Umudike

Sponsor: NRCRI

Status: On-going

C.1.5.2. Market structure and pricing efficiency of cassava roots in Enugu State.

Researchers: Asumugha, G.N. Akinpelu, A.O. Okoye, B.C. Ezebuiro N.C. and Eke-Okoro. O.N.

Objective: To assess marketing margin, cost and pricing efficiency of cassava products

Sponsor: NRCRI

Status: New

C.1.5.3: Supply chain development for cassava

Researchers: Asumugha, G.N. Akinpelu, A.O. Okoye, B.C. Ezebuiro N.C. and Eke-Okoro. O.N.

Objective: To determine the key factors and their characteristics, profit and constraints in cassava value chains.

Sponsor: NRCRI

Status: New

C.1.5.4. Investment appraisal of cassava breeding research at National Root Crops Research Institute, Umudike.

Researchers: Asumugha, G.N. Akinpelu, A.O. Okoye, B.C. Ezebuiro N.C. and Eke-Okoro. O.N.

Objective: To determine the research cost, return, benefit and appraisal of the cassava breeding activities in the Institute.

Sponsor: NRCRI

Status: New

SWEET POTATO PROGRAMME

PROJECT 1: BREEDING AND DEVELOPMENT OF NEW VARIETIES

SP. 2.1.1: Preliminary yield of sweet potato varieties

Researchers: Nwankwo, I.I.M. , Echendu, T.N.C., and Chukwu J.I

Objective: To develop new Sweet potato Varieties.

Sponsor: NRCRI

Status: On-going

SP 2.1.2: Varietal Development through Genetic recombination

Researchers: Nwankwo, I.I.M., Echendu, T.N.C., and Chukwu J.I

Objective: To develop new Sweet potato Varieties through genetic recombination

Sponsor: NRCRI

Status: On-going

SP. 2.1.3: Performance of orange fleshed sweet potato (OFP) varieties in the lowland forest agro-ecology of South Eastern Nigeria.

Researchers: Nwankwo, I.I.M. , Echendu, T.N.C., Onunka, N.A. Ehiasianya, C.N Amajor, J.U., Koriocha, D.S., Nwaigwe, G.O. and Njoku J.C.

Objective: To Select suitable orange fleshed sweetpotato varieties for the lowland ecologies of South-Eastern Nigeria

Sponsor: NRCRI

Status: On-going

SP. 2.1.4: Multilocational evaluation of introduced and improved and improved breeder lines of sweet potato varieties

Researchers: Nwankwo, I.I.M., Echendu, T.N.C., Afuape, S.O., Onunka, N.A. Nwachukwu, E.C., Okorocho, A.O.E., and Ukenye, E.

Objective: To determine the performance of improved Sweetpotato lines across locations

Sponsor: NRCRI
Status: On-going

SP. 2.1.5: Evaluation of Advanced Sweet potato varieties at the Uniform Yield Trail for Yield Stability.

Researchers: Nwankwo, I.I.M., Echendu, T.N.C., Afuape, S.O., Onunka, N.A. Ehisianya, C.N., Nwachukwu, E.C., Korieocha, D.S., Okorochoa, A.O.E., and Ukenye, E. Njoku J.C., Amajor, J.U. and Nwaigwe, G.O

Objective: To determine the yield stability of sweet potato lines

Sponsor: NRCRI

Status: On-going

SP. 2.1.6: Morphological Characterization and yield evaluation of In-country Sweetpotato Accessions from Benue and Eboyi States.

Researchers: Nwankwo, I.I.M. , Echendu, T.N.C., Njoku J.C. Onunka, N.A. Korieocha, D.S., Okorochoa, A.O.E.

Objective: To determine the Morphological characters of In-country Sweetpotao accessions.

Sponsor: NRCRI

Status: On-going

SP. 2.1.7: NCRP-Multilocational Evaluation of Improved Breeder's lines of Sweet Potato Varieties.

Researchers: Nwankwo, I.I.M., Onunka, N.A. Echendu, T.N.C., Afuape, S.O., Okorochoa, A.O.E., Ehisianya, C.N Korieocha, D.S., Amajor, J.U., Nwaigwe, G.O and Ukenye, E

Objective: To select varieties that are superior across the sweet potato growing area in term of Resistance/tolerance to major pests and disease and food quality

Sponsor: NRCRI

Status: New

SP. 2.1.8: Micronutrients Biofortification of sweetpotato varieties

Researchers: Nwankwo, I.I.M, and Echendu, T.N.C.

Objectives:

1. To improve the nutritive quality of the white fleshed sweet potato varieties in our collection.
2. To develop high yielding orange fleshed sweet potato varieties
3. To develop sweet potato varieties that withstand biotic stress (e.g. SPVD and weevil)

Sponsor: NRCRI

Status: New

SP. 2.1.9: Development of Sweetpotato genotypes with desirable Characteristics for Foods and Industrial use.

Researchers: Nwankwo, I.I.M., Afuape, S.O., Echendu, T.N.C., Onunka, N.A. Ehisianya, C.N Korieocha, D.S., Amajor, J.U

Objective: To develop Sweetpotato genotypes that are high yielding with good tuber shape

Status: New

PROJECT 2: AGRONOMY/SOIL FERTILITY

SP. 2.2.1: Determination of the Nutrient requirement of Sweet potato Landraces under improved management in the Northern Guinea Savanna.

Researchers: Onunka, N.A., Njoku J.C. and Onwunali, G.

Objective: To determine the nutrient requirement of sweet potato landraces under improved management in the Northern Guinea Savanna of Nigeria.

Sponsor: NRCRI

Status: On-going

SP. 2.2.2 Adaptation trial of Orange fleshed cultivars of sweet potato in Southern and Northern Guinea Savanna of Nigeria.

Researchers: Njoku J.C.,Amdi, C.O., Echendu, T.N.C., and Etudaiye, H.A.

Objective: To identify and select cultivars with stable yield across locations to select cultivars suitable for each agro-ecology

Sponsor: NRCRI

Status: New

SP. 2.2.3: Evaluation of the combined effect of agrolyzer and poultry manure as soil amendments materials for sweet potato production.

Researchers: Onunka, N.A. Okorochoa, A.O.E., Echendu, T.N.C.,

Objective: To work out appropriate combination of the agrolyzer and other organic nutrient sources for improved sweet potato yield.

Sponsor: NRCRI

Status: New

PROJECT 3: PLANT HEALTH MANAGEMENT

SP 2.3.1: Effect of selected Herbicides on Spear Grass (*Imperata Cylindrica*) in Sweetpotato field derived savanna region of Nigeria.

Researchers: Korieocha, D.S., Echendu, T.N.C., Ogbonna M.C., Melifonwu, A.A. and Nwokoacha C.C.

Objective: To select herbicides for spear grass control in sweet potato field.

Sponsor: NRCRI

Status: On-going

SP 2.3.2: Varietal response of orange fleshed sweet potato lines to infestation and damage by sweet potato weevil *Cylas puncticollis*

Researchers: Echendu, T.N.C. and Ehisianya, C.N.

Objective: To determine the response of orange fleshed sweet potato lines to white fly infestation.

Sponsor: NRCRI

Status: On-going

SP 2.3.3: Field Evaluation of Diazinon and neem seed oil as pre and post planting insecticide application and harvest time for the control of *Cylas puncticollis* (Bohr) in sweet potato

Researchers: Ehisianya, C.N. Lale, Umeozor and Echendu, T.N.C.

Objective: To determine the best control method for *Cylas Puncticollis*

Sponsor: NRCRI

Status: On-going

SP. 2.3.4: Effect of integrating manual and chemical weed control on sweet potato production in south-eastern Nigeria.

Researchers: Korieocha, D.S., Echendu, T.N.C., Melifonwu, A.A. Njoku, J.C., Ogbonna M.C., Okorochoa, E.O.A. and Nwokocha C.C.

Objective: To evaluate some selected herbicides and integrated weed control methods on sweetpotato field.

Sponsor: NRCRI

Status: New

SP. 2.3.5: Effect of Cylas on field performance of carotene- rich sweetpotato cultivars

Researchers: Ehisianya, C.N. and Echendu, T.N.C.

Objective: To investigate development and damage by *C. puncticollis* Boh. To distinct carotene-based sweet potato cultivars

Sponsor: NRCRI

Status: New

SP 2.3.6: Green House Screening of Sweet potato germplasm at Umudike for resistance to root-Knot Nematodes (*Meloidogyne SPP*)

Researcher: Okorochoa, E.O.A.

Objective: To evaluate the reaction of all the varieties in the local collections to planned populations of root-knot nematode.

Sponsor: NRCRI

Status: New

PROJECT 4: SOCIO- ECONOMICS

SP 2.4.1 Examining determinants of sweet potato production marketing and Utilization in middle Belt zone

Researchers: Ekwe, K.C., Tokula, M.H, Ironkwe, AG. and Nwaigwe G.O.

Objective: To examine the determinants of sweet potato production, marketing and utilization in middle belt zone of Nigeria.

Sponsor: NRCRI

Status: On-going

SP 2.4.2 Farmers Adoption of Sweet potato production technology in South East Agric. Zone

Researchers: Nwaigwe G.O., Ekwe, K.C.,and Echendu, T.N.C.

Objective: To determine farmer's adoption of sweet potato production technology in SE Agric. Zone.

Sponsor: NRCRI

Status: On-going

SUGAR BEET AND OTHER ROOT CROPS PROGRAMME

PROJECT 1: GENETIC IMPROVEMENT STUDIES

SB. 3.1.1: Characterization, classification and conservation and of germplasm sugar beet and other root crops economic importance in Nigeria.

Researchers: Olojede, A.O., Nwokocha C.C., Akinpelu, A.O., Ohaeri J.E., Dalyop T.Y., Lenka D and Eke-Okoro O.N.

Objectives:

1. To classify and preserve germplasm materials in-vivo and in in-vitro with a view to developing and broadening the gene bank for genetic improvement and agronomic studies.
2. To establish production status, agronomic practices, post harvest handling and marketing of rizga, Hausa potato, turmeric and amora in their respective Local areas of production.

Sponsor: NRCRI

Status: On-going

SB. 3.1.2: Determination of lthe effect of irrigation on the flowering and fruiting of Rizga (*Plectranthus esulentus* N.E.Br)

Researchers: Amadi C., Olojede, A.O. and Dalyop, T.Y

Objectives:

1. To determine the effect of irrigation on flowering and fruiting.
2. To obtain fruiting and seed set in Rizga.

Sponsor: NRCRI

Status: On-going

SB. 3.1.3: Flowering and fruiting studies in Hausa Potato (*Solenostomon rotundifolius*) (Prior Morton)

Researchers: Amadi C., Olojede, A.O. and Dalyop, T.Y

Objective: To study the flowering and fruiting behaviour of Hausa potato with a view to determning its suitability for conventional methods of genetic improvement.

Sponsor: NRCRI

Status: On-going

SB. 3.1.4: DNA fingerprint of 72 Nigeria turmeric germplasm collections using molecular markers.

Researchers: Egesi, C.N. and Olojede, A.O.

Objective: To assess genetic diversity among Nigerian Turmeric accessions with a view to develop core collections for varietal improvement

Sponsor: NRCRI

Status: On-going

SB. 3.1.5: Evaluation of the effect of photoperiod on the Induction of early flowering and fruiting in Livingstone potato

Researchers: Amadi C., Olojede, A.O. and Kallastone, S

Objective: To determine the effectiveness of photoperiod in the early induction of flowering and fruiting in Livingstone potato

Sponsor: NRCRI

Status: On-going

PROJECT 2: AGRONOMY/SOIL FERTILITY STUDIES

SB. 3.2.1: Performance of rizga, turmeric and Hausa potato under different maize populations in maize/melon intercrop at Umudike and Jos.

Researchers: Olojede, A.O., Nwokocha C.C., Akinpelu, A.O., Dalyop T.Y., Lenka D., Amadi, G and Amadi C.

Objectives:

1. To determine the yield performance of rizga, turmeric and Hausa potato in maize melon intercrop.
2. To determine the appropriate maize population for intercrop productivity

Sponsor: NRCRI

Status: On-going

SB.3.2.2: Studies on growth, yield and rhizome quality of Nigerian turmeric germplasm

Researchers: Olojede, A.O., Nwokocha C.C., and Ukpabi, U.J.

Objective: To determine yield characters, rhizome yield and quality of the newly collected materials with a view to recommending promising varieties to farmers.

Sponsor: NRCRI

Status: On-going

SB. 3.2.3: Soil Test calibration for N, P and k for Rizga and Hausa potato yield on an ultisol.

Researchers: Nwokocha C.C., Olojede, A.O., A.O. Ano and Chukwu G.O.

Objective: To determine optimum rate of N, P, and k for rizga and Hausa potato production under Umudike condition.

Sponsor: NRCRI

Status: On-going

SB. 3.2.4: An Investigation of the potentials of Hausa potato vine cuttings as alternative planting materials

Researchers: Ohaeri, J.E., Olojede, A.O., and Nwokocha C.C.,

Objective: To identify the potentials of Hausa potato vine cuttings as alternative source of planting material for Hausa potato production.

Sponsor: NRCRI

Status: On-going

SB. 3.2.5: Effect of Lime and fertilizer on growth and yield of Rizga and Hausa potato on an Ultisols of South eastern Nigeria.

Researchers: Ohaeri, J.E., Olojede, A.O., and Nwokocha C.C.,

Objectives: To determine the effect of lime and fertilizer on the performance and yield of rizga and Hausa potato.

Sponsor: NRCRI

Status: On-going

SB. 3.2.6: Determination of period of weed interference for optimum performance and productivity of Rizga, turmeric and Hausa potato in Jos.

Researchers: Njoku, S.C., Olojede, A.O., Dalyop, T.Y. and A.A. Melifeonwu

Objective: To determine the critical period of weed interference in rizga, turmeric and potato production

Sponsor: NRCRI

Status: On-going

SB. 3.2.7: Evaluation of different sett-sizes for Rizga and Hausa potato production in Jos Plateau.

Researchers: Olojede, A.O., Dalyop, T.Y., Daure G.L. and Amadi, C.

Objective: To determine appropriate sett-size for optimum yield performance in Rizga and Hausa potato

Sponsor: NRCRI

Status: On-going

SB. 3.2.8: Use of true seed in the production of Polynesian arrow root “Amora” (*Tacca leontopetaloides*)

Researchers: Olojede, A.O. and Nwokocha C.C.

Objective: To determine the possibility of using true seed for the production of amora as a way of enhancing its economic potential.

Sponsor: NRCRI

Status: On-going

SB. 3.2.9: Combined effect of organic/inorganic fertilizer mixtures on yield of Turmeric, Rizga and Hausa potato production in the rainforest and savanna agro ecologies.

Researchers: Olojede, A.O., Ano, A.O. Nwokocha C.C., Dalyop T.Y., Daure G.L., Akinpelu, A.O., and Amadi G.

Objective: To determine optimum rate of organic/inorganic fertilizer mixtures as soil amendment strategy for increased yield in minor root crops.

Sponsor: NRCRI

Status: On-going

SB. 3.2.10: Effect of Lime and organic matter interaction on the growth and yield of turmeric on an ultisols of south eastern Nigeria.

Researchers: Ohaeri, J.E., Olojede, A.O., and Nwokocha C.C.

Objectives:

1. To ascertain the effect line and organic matter on turmeric yield.
2. To determine optimum Lime/organic matter mixtures for turmeric production.

Sponsor: NRCRI

Status: On-going

SB. 3.2.11: Sorption/adsorption studies of cadmium and lead on three Nigerian soils and their uptake on turmeric rhizomes. (Mr Nwokocha's Ph.D Proposal).

Researchers: Nwokocha, C.C., Asadu C.L.A. and Ano, A.O.

Objectives:

1. To determine the Sorption and disorption of cadmium and lead on three Nigerian soils
2. To determine the uptake of Cd and Pb by turmeric

Sponsor: NRCRI

Status: On-going

PROJECT 3: PEST AND DISEASE MANAGEMENT STUDIES

SB. 3.3.1: Screen house investigation on effect of different levels of biopesticides on Meloidogyne SPP-infested Living stone potato.

Researchers: Okorochoa E.O.A., Ogbuji, R.A. and Olojede, A.O.

Objective: To evaluate the effect of different levels of biopesticides plant extracts on Livingstone potato infested with Melloidogyne spp.

Sponsor: NRCRI

Status: On-going

SB3.3.2.2: Identification of field pathogen complex of Rizga and Hausa potato in Umudike a Diagnostic Approach for Control.

Researchers: Nwawuisi, J.U., Olojede, A.O., and Amadi C.

- Objectives:**
1. To identify the various pathogen that attack Rizga and Hausa potato at field and storage in Umudike, as diagnostic approach for developing control package for the crops in the study area.
 2. To ascertain the species composition of the pathogen in occurrence on the crops in the study area
 3. To develop a databank for subsequent pathological work on the crops in the study area as a problem solving tool.

Sponsor: NRCRI

Status: On-going

SB.3.3.3. Employing some available management strategies to manage nematodes infestation/damage on Living stone and Hausa potato.

Researchers: Dalyop T.Y., Olojede, A.O., Nwauzor E.C., Okorochoa E.O.A., Dung, E.A. and Amadi G.

Objective: To establish a management strategy that can be adopted by famers of the crops to overcome nematodes infestation/damage.

Sponsor: NRCRI

Status: On-going

PROJECT 4: MULTIPLICATION OF PLANTING MATERIALS

SB.3.4.1. Production of high quality planting materials for research works and distribution to farmers.

Researchers: Olojede, A.O., Nwokocha C.C., Ohaeri, J.E., and Akinpelu,

Objective: To produce sufficient planting materials of “Other root Crops” for experiments and distribution to farmers.

Sponsor: NRCRI

Status: On-going

SB3.5.1. Comparative economic study of rizga, and Hausa potato

Researchers: Akinpelu, A.O., Mbanaso, E.O., Asumugha, G.N., and Olojede, A.O.,

Objectives: 1. To carry out economic analysis of the production of rizga, turmeric and Hausa potato in the southeast ecological zone.
2. To make suggestions for the development of the crops

Sponsor: NRCRI

Status: On-going

SB. 3.5.2: Impact analysis of Livingstone potato production on the livelihood of growing households in Plateau and Kaduna.

Researchers: Akinpelu, A.O., Asumugha, G.N.,Dung E. and Olojede, A.O.,

Objectives: 1. To identify areas of production in the state
2. To determine the levels of production at farmers’ fields
3. To determine the profitability of the crop at farmers’ fields
4. To determine constraints militating against production at farmers’ fields
5. To analyze the impact on the livelihood of growing households in the study area.

Sponsor: NRCRI

Status: On-going

YAM PROGRAMME

PROJECT I. GENETIC IMPROVEMENT STUDIES OF YAM

Y 4.1.1: Breeding for high and stable yields, multiple pest and disease resistant and high consumer and market acceptability

Researchers: Nwachukwu, E.C., Ikeorgu J.G., Nwawuisi, J.U. and Ukpabi, U.J.

Objective: To develop yam varieties that will combine high and stable tuber yield, pest disease resistance with good tuber shape and desirable eating and market qualities.

Sponsor: NRCRI, Umudike

Status: On-going

Y 4.1.2: Collection, conservation and studies on minor medicinal yams (*d.dumetorum*, *d. bulbifera*, *amora* etc (new) in Nigeria

Researchers: Nwachukwu, E.C., Ikeorgu J.G., Obidiegwu, J., Onyeka, J. Eke-Okoro, O.N. and Ukpabi, U.J.

Objectives:

1. To advance the conservation and use of lesser known yams, in an effort to alleviate poverty, attain food security, promote environmental conservation and maintain the country's spiritual and cultural values
2. To create awareness in the Nigerian populace of the nature, use and importance of lesser known yams in food security and poverty alleviation

Sponsor: NRCRI,

Status: On-going

Y 4.1.3: Multilocational evaluation of hybrid yam genotypes in the yam belt of Nigeria.

Researchers: E.C Nwachukwu, J.G. Ikeorgu, Ikoro, I and R. Asiedu

Objective: To evaluate hybrid yam varieties for high and stable yields pest and disease resistance and desirable food quality tubers.

Sponsor: NRCRI

Status: On-going

Y 4.1.4 Farmer participatory evaluation of hybrid water yam clones in the yam belt of Nigeria

Researchers: Ikeorgu, J.G; Ekwe, K.C; Tokula, M.H and Asiedu, R.

Objective: To involve the farmers very early in the breeding process (AYT) in evaluating the acceptability of new yam hybrids based on some farmer-preferred characteristics.

Sponsor: NRCRI

Status: New

Y 4.1.5: Production of pure yam lines using controlled pollination in higher altitude

Researcher: Amanze, J.N and J.E Ike Orgu

Objectives:

1. To produce pure and desirable yam genotypes To achieve genetic improvement of yam landraces through controlled crosses.
2. To improve efficiency in the development of improved yam.

Sponsor: NRCRI

Status: New

Y 4.1.6: Multilocational evaluation of selected yam landraces from Nigeria and West African yam belt for desirable breeding characteristics.

Researchers: Obidiegwu, J., E.C Nwachukwu, J.G Ikeorgu

Objective:

1. To evaluate and detect salient potentials of our regional landraces for desirable characteristics for crop improvement.
2. To ascertain best fit environments for the landraces.

Sponsor: NRCRI

Status: New

PROJECT 2: AGRONOMY

Y 4.2.1: Determination of the best local rooting media for yam vine propagation.

Researchers: Ikeorgu, J.G., Mazza, M. and Kikuno H.

Objective: To determine the best local rooting media for yam vine propagation.

Sponsor: NRCRI

Status: New

Y 4.2.2: Effect of time of planting on root and tuber formation of yam vines used as planting material.

Researchers: Ikeorgu, J.G., Mazza M. and Kikuno H.

Objective: To determine the best time of the year to propagate yam vines.

Sponsor: NRCRI

Status: On-going

Y. 4.2.3: Studies on integrated nutrient management on soil, growth and yield of *Dioscora dumetorum*

Researchers: Onyekwere, I.N., Ano, A.O., Udealor, A. Ikeorgu, J.G, Chukwu, G.O, Eke Okoro, O.N, Njoku S.C, Ogbonna M.C. and Ewuziem, J.E.

Objectives: To determine the effect of integrating inorganic fertilizer, organic inquire and time on the growth yield of *dioscorea dumentorum* and soil properties.

Sponsor: NRCRI

Status: On-going

Y. 4.2.4 Investigations on use of yam slips for minituber production.

Researchers: Ikeorgu, J.G, Ikoru, A. I, and Ogbonna, M. C.

Objectives:

1. To develop a method of producing minitubers from yam sprouts (usually wasted) as a complementary technology to the yam minitubers technology.
2. To investigate the environmental and, management implications for raising healthy minitubers from yam slips.

Sponsor: NRCRI

Status: New

Y. 4.2.5: Evaluation of different organic manures as soil amendment in the production of seed yams for export.

Researcher: Anosike Adiele

Objective: To determine the best organic manure that influences the production of seed yams.

Sponsor: NRCRI

Status: New

Y.4.2.6 Studies on the best/ suitable planting distance for vine cutting propagation of yam for yield enhancement.

Researchers: Ikoru, A. I, J.G. Ikeorgu, H. Kikuno, and Mazza, M.

Objective: To determine the best planting distance for vine cutting propagation of Yams for yield enhancement.

Sponsor: NRCRI

Status: New

PROJECT 3: PLANT PROTECTION

Y.4.3.1: Evaluation of chlorpyrifos and neem seed oil as pre-planting application for the control of yam beetle, *heteroligus* spp. (coleoptera: dynastidae) in delta and rivers states of Nigeria. (On-farm)

Researchers: Ehisiyanya, C.N., Ikeorgu, J.E.G, Tobih, F.O, Echendu, T.N.C, Usman, Z and Uwasomba, C. F.

Objectives:

1. To assess and compare the efficacy of Chlorpyrifos and neem seedoil against yam beetles.
2. To determine the appropriate concentration of Chlorpyrifos and/or Neem seed oil that will significantly reduce the population of *Heteroligus* Spp., without interfering with tuber formation.

Sponsor: NRCRI

Status: New

Y.4.3.2: Evaluation of new herbicides for weed control in yam production at Umudike, south- eastern Nigeria.

Researchers: Ikeorgu, J. G , Korieocha, D.S , Ogbonna, M.C Nwokocha, C.C. and I .A Ikoro,

Objective: To determine the effect of herbicides on emerged and seedling weeds in yam production.

Sponsor: NRCRI

Status: New

Y.4.3.3: Understanding the current status of virulence and population diversity *Colletotrichum gloeosporioides* isolates from yam in Nigeria and identification of new resistance sources.

Researchers: Onyeka T. J., Nwachukwu E. C., Bandyopadhyay R. (IITA), Asiedu R (IITA).

Objective: To study the population diversity of collectotrichum gloeosporioides isolates from yam in Nigeria

Sponsor: NRCRI

Status: New

Y.4.3.4: Epidemiology of anthracnose diseases of yam and screening of NRCRI yam cultivars for resistance (PhD proposal).

Researchers: Nwadili, C. O, Nwokocha, R .C, Onyeka, T. J and Ikeorgu, J.

Objectives:

1. To study the etiology, epidemiology and biology of the organism responsible anthracnose disease of yam.
2. To screen of NRCRI improved yam cultivars for resistance against yam anthracnose disease and fusarium wilt disease of yam.
3. To identify the source of inoculum initiating anthracnose epidemics.

Sponsor: NRCRI

Status: New

PROJECT 4: SOCIO-ECONOMICS

Y.4.4.1: Poverty levels and food demand among rural yam producers in south east agro-ecological zone, Nigeria (Ph.D proposal).

Researchers: Ogbonna, M. C, Onyenweaku, C.E and Nwaru, J.C

Objectives:

1. To evaluate the extent depth, incidence, severity and identify of poverty among rural yam producers.
2. To determine the income distribution level among rural yam producers.

Sponsor: NRCRI

Status: On-going

Y.4.4.2 Studies on price response of fresh yam tuber in se agro-ecological zone in south east agro-ecological zone.

Researchers: Ogbonna, M. C., Asumugha, G. N, Okoye, B. C. and Onyenobi,

Objectives:

1. To supply price information and best potential periods to sell/buy for profit maximization utility satisfaction.
2. Determine competitiveness of yams with other starchy staples.

Sponsor: NRCRI

Status: New

Y.4.4.3. Economics of minituber seed yam production technology using selected improved white yam varieties in south east agro-ecological zone, Nigeria.

Researchers: Ogonna, M.C, Ikeorgu, J.G, Onyekwere , I.N and Agoh, E, Ikoro, O

Objective: To study the economics of minituber seed yam production technology, using improved yam varieties.

Sponsor: NRCRI

Status: On-going

Y.4.4.4: Development of effective market linkage between yam producers, processors and marketers in Nigeria.

Researchers: G.N. Asumugha, B.C. Okoye, M. C. Ogonna, J. G. Ikeorgu and A. Amaefula

Objectives:

1. The objective of this activity is to develop market linkages between smallholder yam producers and processors/marketers in Nigeria.
2. To increase demand for yam by the development of output markets to absorb the increased supply of yam
3. The ultimate objective is to create outlets for yam, increase farm family income, increase family well-being and contribute to economic growth in Nigeria through yam export.

Sponsor: NRCRI

Status: New

Y.4.4.5: Comparative evaluation of fresh yam tuber storage technologies in Nigeria.

Researchers: Asumugha, G.N., M.C. Ogonna, B.C. Okoye, C.K. Nkere, E. OTI,

Objectives:

1. To study the existing indigenous yam storage systems of farmers in the three major yam producing zones of Nigeria.
2. Identify the socio-economic and environmental factors surrounding such practices.
3. To appraise the economics of these alternative storage systems in terms of costs and benefits.
4. To make policy recommendation to improving these storage systems.

Sponsor: NRCRI

Status: On-going

Y.4.4.6: Analysis of cost and return of food yam, *discorea alata*, marketing in Abia state.

Researchers: Onyenobi, V. O., Ikeorgu J. G., Ogbonna, M. C. and Ewuziem, J. E.

Objectives:

1. Determine the profitability of the market enterprise;
2. Determine the structure of the traders; and
3. Make policy recommendation arising from the study.

Sponsor: NRCRI

Status: New

POTATO RESEARCHER PROGRAMME

PROJECT 1: GENETIC IMPROVEMENT STUDIES

P.5.1.1: Breeding for high yields and resistance to late blight.

Objective: To develop potato genotypes that is high yielding, and resistant to late blight.

Sponsor: NRCRI

Status: On-going

P.5.1.2: Potato germplasm management.

Researchers: Amadi, C.O., Eke-Okoro, E.N., Vou Fom, Kun D.L.

Objective: To characterized and conserve accessions in the germplasm.

Sponsor: NRCRI

Status: On-going

P.5.1.3 Multi-Stake -holder selection for adapted B3CI clones.

Researchers: Amadi C.O., Dabels, V. and Dung, E.A.

Objective: To involve the stake-holders in the selection of promising potato clones.

Sponsor: NRCRI

Status: On-going

P.5.1.4: Farm based farmer participatory positive selection for improvement seed health status.

Researchers: Amadi, C.O., Danbaba, A.K., Dabels, V. and Dung, E.A.

Objective: To improve the health status of the farmers' seed.

Sponsor: NRCRI

Status: On-going

P.5.1.5: Use of potato meristem explants to generate disease free planting materials.

Researchers: Danbaba, A.K., E.N.A., Mbanaso and C.O. Amadi

Objective: To use potato meristem explants to generate disease free planting materials.

Sponsor: NRCRI

Status: On-going

P.5.1.6: Multiplication of breeder seed.

Researchers: Kun, D.L., Okafor, E.O, Vou Fom, Amadi Genevieve, Christy Pwol, Kwuis Davou, and Nuhu Kalastone

Objective: To multiply breeder seed.

Sponsor: NRCRI

Status: On-going

PROJECT 2: PEST AND DISEASE STUDIES

P.5.2.1 Determination of optimum planting date for control of common scab of potato.

Researchers: Nwawuisi, J.U., Onyeka, T.J., Dalyop, T.Y., Amadi, C.O. and Eleazu, C

Objectives:

1. To establish the relationship between planting date and the incidence of common scab of potato.
2. To ascertain the planting date that will reduce the incidence of the disease.

Sponsor: NRCRI

Status: New

P.5.2.2: Evaluation of neem extracts for control of common scab of potato.

Researchers: Nwawuisi, J.U. Onyeka, T.J., Dalyop, T.Y., Amadi, C.O. And Eleazu, C.

Objectives:

1. To determine the effectiveness of neem extracts for control of common scab of potato
2. To compare the efficacy of the neem extracts with that of a known synthetic chemical for control of the disease.

Sponsor: NRCRI

Status: New

P.5.2.3: Comparison of efficacy of some natural occurring pesticides and promising conventional chemicals for control of blight diseases of potato in Jos Plateau.

Researchers: Nwawuisi, J.U., Onyeka, T.J. and Amadi, C.O

Objectives:

1. To determine the efficacy of some natural occurring materials as control package for potato diseases in Jos.
2. To compare the effect of the bio-pesticides with known conventional chemicals in potato disease control.

Sponsor: NRCRI

Status: New

P.5.2.4: Assessment of natural occurring pesticides as pre-storage treatment against potato tuber deterioration in Kuru.

Researchers: Nwawusis, J.U., Dalyop, T.Y., Amadi, C.O. And Eleazu, C.

Objective:

1. To determine the efficacy of some natural occurring materials as pre-storage treatment method against potato tuber deterioration.
2. To compare the efficacy of these natural occurring materials with that of known conventional chemical in potato tuber rot control during storage.
3. To determine the effect of the biopesticide on occurrence and pathogenicity of the rot pathogens identified during the storage.

Sponsor: NRCRI

Status: New

P.5.2.5: Effect of neem product and earth-up interval on the management of field infestation of potato tuber moth (*plutella ylostekka*) on Jos Plateau of Nigeria.

Researchers: Daure, G.L. Dalyop, T.Y. Amadi, C.O. and Dung, E.A.

Objectives:

1. To evaluate the insecticidal properties of neem product in the control of field infestation of potato tuber moth
2. To determine the effect of earthing-up intervals on the incidence and infestation by the moth
3. To provide useful information on the use of botanicals for the control of potato tuber moth

Sponsor: NRCRI

Status: New

P.5.2.6: Farmers' training on the management of tuber moth infestation on the Jos-Plateau.

Researchers: Dung, E.A., Lenka, D.M., Amadi, C.O., Dalyop, T.Y., Dabels, V.Y., and Daure, G.L.

Objectives:

1. To increase farmers' capacity in the knowledge of potato tuber moth management practices.
2. Assess the impact of such knowledge acquired.

Sponsor: NRCRI

Status: New

P.5.4.2: An analysis of channels and efficiency of the marketing system for potato in Nigeria.

Researchers: Dung, E.A., Asumugha, G.N., Lenka, D.M

Objectives:

1. An analysis of ware and seed potato supply chain in Nigeria
2. To determine seasonal price differences of potato,
3. To determine the marketing costs and returns including margins for potato
4. To isolate the major constraints to efficient marketing of potato and derive policy implications for improving the efficiency of the marketing system.

Sponsor: NRCRI

Status: New

P.5.4.3: Benefit cost analysis of fresh potato tuber storage in Nigeria.

Researchers: Dung, E.A., Asumugha, G.N., Lenka, D.M, and Amadi, C.O.

Objectives:

1. Study the existing indigenous potato storage systems of farmers in three major potato producing zones of Nigeria
2. Identify the socio-economic and environmental factors surrounding such practices.
3. To appraise the economic of these alternative storage systems in terms of costs and benefits.
4. To make policy recommendation to improving these storage systems.

Sponsor: NRCRI

Status: New

P.5.4.4: Comparative economic analysis of seed potato production techniques in Nigeria.

Researchers: Dung, E.A., Asumugha, G.N., Amadi, C.O. and Lenka, D.M

Objectives:

1. To compare the cost and returns of different potato seed production technologies.
2. Determine the efficiency of each technology.
3. Make recommendation towards the development of a viable seed production sector.

Sponsor: NRCRI

Status: New

P.5.5.5: Implication of climate change on potato production and storage at Vom on Jos Plateau, Nigeria.

Researchers: Audu, H.O., Daure, G.L., Amadi, C.O., Dalyop, T.Y., dung, E.A. and Lenka D.M.

Objectives:

1. To determine the effect of rainfall characteristics over the years on potato production
2. To determine the effect of temperature (min and maximum) on potato production
3. To determine the combine effect of temperature and relative humidity on potato storage
4. To estimate the economic implications of such change on potato production.

Sponsor: NRCRI

Status: New

COCOYAM RESEARCH PROGRAMME

PROJECT 1: GENETIC IMPROVEMENT

CY. 6.1.1: Development of New Cocoyam Genotypes through Mutation Induction

Researchers: Mbanaso, E.N.A , Nwachukwu, E.C., Onyeka and Chukwu, G.O.

Objectives:

1. To reduce mutation in irradiated materials
2. To develop *Xanthosoma* varieties that will be resistant to CRRBC and Ghana (NCe 006) that can be adapt to upland.

Sponsor: NRCRI

Status: On-going

CY. 6.1.2: Assessment of the Multiplication Rate of Four Cocoyam Accessions.

Researchers: Mbanaso, E.N.A.; Nwachukwu, E.C. and Chukwu G.O.

Objective: To assess the multiplication rate of ion of 4 newly acquired cocoyam sessions.

Sponsor: NRCRI

Status: On-going.

CY 6.1.3: Farmer Participatory Evaluation of Two Elite Varieties of Cocoyam

Researchers: Chukwu, Onyeka, Okoye, Onwubiko, Noko, Obasi, Mbanaso and external collaborators.

Objectives: To evaluate the performance of NC3 001 and NXs 001 under farmers' environment and to enable the farmers select the varieties they prefer.

Sponsor: NRCVRI

Status: On-going

CY 6.1.4: Cocoyam adaptability trials in 4 agro-ecological zones (RTEP, stopped).

Researchers: Onwubiko, O.; Chukwu, G.O; Okoye, B.C.p; Njoku, J.C. Amadi, C. Tokular, M.; Ejechi, M and Aboaja, F.N.

Objective: To determine cocoyam adaptability in it agro-ecological zones

Budget: N400,000

Sponsor: NRCRI

Status: On-going

PROJECT 2: AGRONOMY

CY. 6.2.1: Evaluation of Cultivar and tertiary cormel sizes in cocoyam production in a Coastal plain soil.

Researcher: Chukwu *et al.*

Objective: To evaluate cultivar and tertiary cormel sizes in cocoyam production

Sponsor: NRCRI

Status: On-going

CY 6.2.2: Evaluation of cormel type and cultivar in cocoyam production in a haplic acrisol

Researcher: Chukwu et al

Objective: To evaluate cormel type and cultivar in cocoyam production

Sponsor: NRCRI

Status: On-going

CY. 6.2.3: Effect of Plant density and time of harvest on the control of root rot blight complex of cocoyam (*Xanthosoma signittifolium*)

Researchers: Obasi, M.N.; Nwadili, C.; Onwubiko, O and Nwankwo K.C.

Objectives:

1. To determine the optimum plant population that will control root root blight complex
2. To determine the appropriate time of harvest that is suitable to control the disease.

Sponsor: NRCRI
Status: - On-going

CY 6.2.4: National Workshop on Folk Science (Indigenous knowledge System) of Cocoyam Production.

Researchers: Chukwu, Oyeka, Okoye, Onwubiko, Nwko, Obasi, Mbanaso and External Collaborators.

Sponsor: NRCRI

Status: On-going

CY 6.2.5: School cocoyam project in NLNG host communities in Abuja Kingdom, Rivers State

Researchers: Madu, Udealor, Eke-Okoro, Chukwu, NLNG, Eze, Chinaka, Ekedo, Njoku and Okoye

Objectives:

1. To popularize cocoyam through school children
2. To inculcate in the Youth love for agriculture
3. To empower farmers in the host communities of NLNG.

Sponsor: NRCRI

Status: On-going

CY.6.2.6: Multiplication of *Xanthosoma* species

Researchers: Chukwu, G.O., Okoye B.C.

Objective: To multiply enough materials to meet the demand for planting, consumption and processing into different good forms.

Sponsor: NRCRI

Status: On-going

CY. 6.2.7: Cocoyam Re-Birth Initiative

Researchers: Chukwu, G.O; Okoye, B.C.; Madu, T.U; Chinaka, E.C; Onwubiko O; Okwusi, M.C.; Njoku, J.C; Tokula M. and Obasi, M.N. and collaborators

Objectives:

1. To generate data towards registration of NCe 0012, NCe 003, NXs 002 as elite varieties of cocoyam in Nigeria in 2011.
2. To evaluate adaptability and acceptability of cocoyam varieties.
3. To rapidly disseminate proven cocoyam technologies such as Gocken Rapid Multiplication Technology (GRMT), plant health management etc. through demonstration in schools and Farmers Participatory Research (FPR).
4. To inculcate in school children the love for cocoyam as a nutritional tuber crop, and prevent youth restiveness and violence, through involving them in cocoyam research production and
5. To impact on the children and the farmers necessary skills in cocoyam-based technologies.

Sponsor: NRCRI

Status: On-going

PROJECT 3: SOCIO-ECONOMICS

CY 6.3.1: Formation of cocoyam growers' cooperatives and market development in Abia.

Researchers: Okwusi, Madu, Eked, Njoku, Okoye and Chukwu

Objectives: To popularize cocoyam and make it available to prospective buyers.

Sponsor: NRCRI

Status: On-going

CY 6.3.2: Policy options for promoting market participation among smallholder cocoyam producers in Enugu state, Nigeria.

Researchers: Okoye, B.C., Asumugha, G.N., Chukwu, G., Onyenwaku, C.E and Ukoha, O.O.

Objectives:

1. To assess the effects of transactions costs on small-holder market participation for cocoyam
2. To assess the cost-mitigating institutional innovations relative to prices and non-price factors on marketed surplus for cocoyam

3. Identify policy/institutional interventions/innovations to alleviate constraints and improve the ability of the small-scale cocoyam farmers to be part of the commercial agricultural economy.

Sponsor: NRCRI

Status - New

CY 6.3.3: Marketing of Edible Cocoyam, *Xanthosoma* Species (TANNIA) in Abia State.

Researcher: Onyenobi, V.O., Chukwu, G.O. Asumugha, G.N., Okoye, B.C., Ewuziem, J.E., Ogbonna, M.C. and Akpinpelu, A.O.

Objectives:

1. Determine the socio-economic characteristics of the traders;
2. Determine the market performance of the traders;
3. Determine the factors that influence the marketing efficiency of the trader; and
4. Make policy recommendations arising from the study;

Sponsor: NRCRI

Status: New

PROJECT 4: POST HARVEST STUDIES

CY 6.4.1: Assessment of Different Storage Methods for Cocoyam.

Researchers: Okoye, B.C.; Chukwu G.O.; Onwubiko, O.O. and Mbanaso E.N.A.

Objectives:

1. Estimate the net present value (NPV) of the investment
2. Estimate the technical efficiencies by tuber weight
3. Estimate the cost and gross margin by tuber weight

Sponsor: NRCRI

Status - On-going

CY.6.4.2: Determination of nutrient, functional and phytochemical properties of all NRCRI, cocoyam varieties.

Researchers: Ukenye, E., Ukpabi, J.U. and Chukwu G.O.

Objective: To determine the nutritional, functional and phytochemical screening of cocoyam varieties with a view to enhance their economic potentials to the end users.

Sponsor: NRCRI
Status - On-going

PROJECT 5: PLANT HEALTH MANAGEMENT

CY 6.5.1: Unraveling the Complexity of Cocoyam Root Rot Complex in Nigeria

Researcher: Onyeka T.J., Nwadike C., Chukwu G.O.

Objectives:

1. To bioassay protocol for studying host pathogen interaction in cocoyam root rot complex.
2. To identify associated organisms and thereafter to carry out pathogenicity test to determine the level of their individual involvement in root rot disease.
3. To characterize the isolates of the major pathogen(s) of cocoyam root rot disease in Nigeria

Sponsor: NRCRI
Status: New

CY. 6.5.2: Preliminary Investigations on Pathogenic Organisms and Control of Black Leaf Disease of Cocoyam (*Colocasia esculenta*) Using Plant Extracts in Southern Nigeria.

Researchers: Nwadike, C.O., Chukwu, G.O., Onyeka, T.J., Nwawuisi, J.U., Amajo, J. and Okoye, B.C.

Objectives:

1. To isolate and identify the pathogenic organisms responsible for the fungal black-leaf disease of cocoyam through laboratory diagnosis.
2. To determine the best control bio-pesticide for the control of the disease through in vivo and in vitro screening
3. To determine the economics of using the plant extracts.

Sponsor: NRCRI

Status: New

GINGER RESEARCH PROGRAMME

PROJECT 1: GENETIC IMPROVEMENT PROGRAMME

G.7.1.1: Effect of high altitude on flowering and seed setting of ginger under rainfed and irrigated conditions.

Researchers: Amadi, C.O., Nwauzor, E.C., Lang, A.J.

Objective: To study the effect of altitude on flowering and seed setting of ginger

Sponsor: NRCRI

Status: On-going

G.7.1.2: Response of three genotypes of ginger (*Zingiber officinale* Rose) to mutagenic treatments.

Researcher: Danbaba A.K. and Mbanaso

Objectives:

1. To determine differences that might exist in genotypes to irradiation
2. To develop high rhizome yielding mutant varieties through mutation breeding.

Sponsor: NRCRI

Status: New

PROJECT 2: AGRONOMY

G.7.2.1: Effect of the inclusion of low-growing/leguminous cover crops in ginger-based system on the productivity of ginger at Umudike.

Researchers: Nwaogu, E.N.; Nwauzor, E.C.; Ebeniro, C. N.; Ewuziem, J. E.

Objective: To determine the effect of low-growing cover crops on the productivity of ginger based system

Sponsor: NRCRI

Status: On-going

G.7.2.2: Integration of alley cropping ginger production system and its effect on the field performance of ginger in south, east Nigeria.

Researchers: Nwaogu, E.N.; Nwauzor, E.C.; Ebeniro, C. N; and Ewuziem, J.E.

Objective: To monitor the effect of hedge row planting of C Cajan on the productivity of ginger

Sponsor: NRCRI

Status: On-going

G.7.2.3: Effect of time of organic manure application on soil Nitrogen dynamics and uptake by ginger in the Benin Savanna Zone of Nigeria

Researchers: Nwaogu, E.N.; Nwauzor, E.C.; Ebeniro, C. N; and Ewuziem, J.E.

Objective: To determine the effect of organic manure application on soil N dynamics and uptake by ginger

Sponsor: NRCRI

Status: On-going

G.7.2.4: Effect of lime of Soyabean Introduction on Soil Quantity and Productivity of Ginger/Soybean Intercrop in the Guinea Savanna.

Researchers: Nwaogu, E. N. Nwauzor, E. C. and Mohammed, M.

Objective: To determine the effect of time of introduction of soybean on soil quality in ginger/soybean system.

Sponsor: NRCRI

Status: On-going

G.7.2.5: Response of ginger to lime in an Ultisols of South Eastern Nigeria.

Researchers: Obasi, M.N.; Nwaogu, E. N. Nwankwo, K. C.

Objective: To determine the effect of lime on the yield of ginger

Sponsor: NRCRI

Status: On-going

G.7.2.6: Determination of the amount of shading for sustainable ginger production under oil palm and rubber plantations.

Researchers: Nwaogu, E.N.; Nwauzor, E.C.; Ewuziem, J.E.; Nwawuisi, J.

Objective: To determine the amount of shading necessary in ginger production

Sponsor: NRCRI

Status: On-going

G.7.2.7: Improvement of the health status of ginger (*zingiber officinale*) planting material through positive selection.

Researchers: Nwauzor, E.C. Nwawuisi, J.U.; Ebeniro, C.N.; Obidiegwu, J.; Lang, A.J.

Objective: To improve the health status of ginger planting material through positive selection

Sponsor: NRCRI

Status: New

G.7.2.8: Effect of poultry manure and palm bunch ash on the field performance of ginger in South Eastern Nigeria

Researchers: Ebeniro, C.N., Nwaogu, E.N., Nwauzor, E.C., Ano, A.O., Njoku, S.C., Obasi, C. and Ewuziem, J.E.

Objective:

1. To determine the optimum levels of palm bunch ash and in combinations with varying rates of poultry manure for sustainable ginger production in South Eastern Nigeria.
2. To monitor effect of the treatments on disease prevalence.
3. To determine the economics of ginger production using combined application of palm bunch ash and poultry manure in an ultisol in South Eastern Nigeria.

Sponsor: NRCRI

Status: New

G.7.2.9: Influence of Leguminous Cover Crops Planted in Rotation and Fertilizer n on Soil Quality and Productivity of Ginger in a Tropical Rainforest of South Eastern Nigeria.

Researchers: Nwaogu, E.N., Nwauzor, E.C. Ano, A.O. and Ewuziem, J.E.

Objectives:

1. To improve N status of soils and reduce the fertilizer N requirement of succeeding non leguminous ginger crop
2. To determine ginger rhizome yield responses to fertilizer N as affected by preceding legume crops
3. To determine legume source for optimal field performance of ginger planted in rotation.

Sponsor: NRCRI

Status: New

G.7.2.10: Residual Effects of *Cajanus cajan* Hedgerow Alley in Ginger-based System on Soil Quality and Productivity of Preceding Ginger in Southeast Nigeria.

Researchers: Nwaogu, E.N., Nwauzor, E.C., Okonkwo, J.C. and Nwosu, P.O.

Objectives:

1. To assess the soil fertility changes that occur in ginger-*Cajanus cajan*-based system.
2. To determine if the improved nutrient N supply arising from direct N fixation and mineralization by *C.cajan* hedgerow alley can sustain the N requirement need of ginger planted in rotation.
3. To determine the optimum *C.cajan* hedgerow alley width for sustainable field performance of succeeding ginger crop planted in rotation.

Sponsor: NRCRI

Status: New

G.7.2.11 Effect of neem based fertilizer on the performance and yield of ginger

Researchers: Ano, A.O., Nwauzor, E.C Nwaogu, E. and Onyekwere I.N

Objective: To determine the effect of neem based fertilizer on the yield of ginger

Sponsor: NRCRI

Status: New

PROJECT 3: PLANT PROTECTION

G.7.3.1: Effect of pre-storage treatment with plant extracts on the shelf life of ginger rhizomes.

Researchers: Nwawuisi, J.U, Nwauzor, E.C. and Nwaogu, E. Onyeka, J

Objective: To determine the effect of pre-storage treatment with plant extracts on the shelf life of ginger.

Sponsor: NRCRI

Status: On-going

G.7.3.2: Evaluation of storage methods for ginger

Researchers: Nwauzor, E.C., Nwawuisi, J.U.

Objective: To determine the appropriate storage method for ginger rhizomes

Sponsor: NRCRI

Status: On-going

G.7.3.3: Nematode status of NRCRI Ginger Germplasm.

Researchers: Nwauzor, E.C. and Ebeniro, N

Objective: To determine the nematode status of NRCRI ginger germplasm

Sponsor: NRCRI

Status: On-going

G.7.3.4 Field Investigations and Screening of Some Selected Plant Extracts for Potency of Control of Ginger Leaf Spot Disease in Nigeria.

Researchers: Nwadike, C.O., Onyeka, T. J, Nwawuisi, J. U., Nwauzo, E.C, Nwogu, E.N. and Ewuziem

Objectives:

1. To determine the best control biopesticide for the cultivation of ginger through *in vitro* and *in vivo* screening.
2. To determine economics of using any plant extract to be recommended.

Sponsor: NRCRI

Status: On-going

PROJECT 4: SOCIO-ECONOMICS

G.7.4.1: Economics of Ginger production in Umudike and Maro

Researchers: Ewuziem, J.E; Nwaogu, E.N.; Nwauzor, E.C. and Ebeniro, C.N.

Objective: To determine the economics of ginger production in Umudike

Sponsor: NRCRI

Status: On-going

G.7.4.2: Current structure, conduct and performance of Nigerian Ginger Market. (1989-2009).

Researchers: Ewuziem, J.E., Asumugha, G.N., Nwauzor, E.C., Akinpelu, A.O. Okoye, B.C., Ibeagi, O. and Collaborators (AERLS).

Objectives:

1. To describe and analyze the structure, conduct and performance of Nigerian ginger market.
2. To identify marketing channel(s) for ginger in Nigeria.
3. To estimate the cost and returns of ginger marketing in Nigeria.

Sponsor: NRCRI

Status: New

FARMING SYSTEMS RESEARCH PROGRAMME

PROJECT 1: DEVELOPMENT OF COMPONENT TECHNOLOGIES TO IMPROVE THE PRODUCTIVITY OF ROOT AND TUBER CROP IN SOUTH EAST AGRO-ECOLOGICAL ZONE OF NIGERIA.

FS.8.1.1: Characterization and productivity of soils derived from three parent materials under cassava/upland rice intercropping system in south eastern Nigeria.

Researchers: Onyekwere I., and Ezenwa E.

Objectives:

1. To characterize the soils derived from three parent materials in south eastern Nigeria.
2. To study the productivity of these soils under cassava/upland rice system.

Sponsor: NRCRI

Status: On-going.

FS.8.1.2: Studies on introducing some leguminous food crops on soil and productivity of component crops in *Dioscorea dumetorum*/maize intercropping system.

Researchers: Onyekwere I., Udealor, A., Ano, A.O., Eke-Okoro, O.N., Chukwu, G.I. and Amaefule.

Objective: To evaluate the effect of introducing some leguminous food crops into *Dioscorea dumetorum*/maize intercropping systems on soil and yield of component crops.

Sponsor: NRCRI

Status: New

FS.8.1.3: Evaluation of contrasting cassava varieties in cassava/maize/melon intercropping systems grown in two ecologies.

Researchers: Onyekwere, I., Udealor, A., Eke-Okoro, O.N. and Ebeniro

Objectives:

1. To adapt new cassava cultivars into the commonest cropping system in south eastern agro ecological zone.
2. And to assess the productivity of these cultivars to the mixture.

Sponsor: NRCRI

Status: New

FS.8.1.4: Studies on compatibility of sweet potato and garden egg intercrop.

Researchers: Ebeniro, C.N., Udealor, A., Nwauzor, E.C., Obasi C., Nwaogu E.N., Obasi, M.N. and Njoku, S.C.

Objective: To determine the compatibility of sweet potato garden egg intercrop in order to improve productivity.

Sponsor: NRCRI

Status: New

FS.8.1.5: A detailed soil survey of NRCRI research farms

Researchers: Nwokocha, C.C., Ano, A.O., Chukwu, G.O., Olojede., A.O., Udealor, A., Onyekwere, I.N., Ekeledo, P.I., Tolubanwo, S.E. and Udom, B.E.

Objectives:

1. To produce a soil map of the Eastern and Western farms
2. To produce a land capability and soil suitability classification maps
3. To have a modal reference soil that is representative of our farms
4. To classify the soils using the USDA and FAO systems
5. To assess the suitability of the soils for arable crop production.

Sponsor: NRCRI

Status: New

FS.8.1.6: Determination of optimum rate of agrolyser as supplement to NPK fertilizer in cassava/maize/egusi intercropping system.

Researchers: Onyekwere, I., Eke-Okoro, O.N., Udealor, A., Ebeniro, and Ewuziem

Objective: The objective of this work is to evaluate the optimum requirement of agrolyser (micronutrient) as supplement to NPK fertilizer in cassava/maize/egusi intercropping system.

Sponsor: NRCRI

Status: New

FS.8.1.7: Determination of optimum rate of agrolyser as supplement to poultry manure in cassava/maize/egusi intercropping system

Researchers: Onyekwere, I., Eke-Okoro, O.N. and Udealor, A.

Objective: To determine the optimum rate of agrolyser as supplement to poultry manure in cassava/maize/egusi intercropping systems

Sponsor: NRCRI

Status: New

PROJECT 2: RESEARCH AND EXTENSION FARMER INPUT LINKAGE SYSTEM.

FS.8.2.1: On-farm evaluation of improved sweet potato varieties in sweet potato to based cropping systems in FCT, Abuja and Nassarawa State.

Researchers: Njoku, J.C., Ezechi, M.E., Abuoaja, F., and Antai, G.E.

Objectives:

1. To evaluate the performance of sweetpotato varieties in Nassarawa and FCT, Abuja.
2. To disseminate improved sweetpotato varieties in Nassarawa and FCT, Abuja.

Sponsor: NRCRI

Status: New

FS.8.2.2: Performance of Rizga (*Plenrhrantus esculenta* in different legumes mixtures in a humid and derived savannah agroecologies.

Researchers: Obasi C.P. and Olojede, A.O.

Objective: To determine the compatibility of rizga with different legumes mixtures.

Sponsor: NRCRI

Status: New

FS.8.2.3: On-farm evaluation of different land preparation methods on yield of improved sweet potato varieties in Agip-host communities.

Researchers: Njoku, J.C., Udealor, A., Eke-Okoro, O.N., Chukwu, G.O. and Ezulike, T.O.

Objective: To evaluate different land preparation methods that will enhance performance of improved sweet potato varieties.

Sponsor: NRCRI

Status: New

FS.8.2.4: On-farm evaluation of complementary use of poultry manure and inorganic fertilizer on yield of improved sweetpotato varieties in Agip-host community.

Researchers: Njoku, J.C., Udealor, A., Eke-Okoro, O.N., Chukwu, G.O. and Ezulike, T.O.

Objective: To evaluate the effect of complementary use of poultry manure and inorganic fertilizer on the productivity of sweetpotato.

Sponsor: NRCRI

Status: New

FS.8.2.5: On-farm evaluation of bio and synthetic pesticides for the control yam beetle in yam based intercropping systems of south-east agro-ecological zone.

Researchers: Uwasomba, C.F., Ehisianya, C.N. Ezulike, T.O., Udealor, A. and Nwauzor, E.C.

Objective: To evaluate the effectiveness of neem leaf powder, neem ash and furadan for the control of yam beetle with a view to making firm recommendation.

Sponsor: NRCRI

Status: New

FS.8.2.6: Investigation on the millipede damages of cassava and yam in Rivers State

Researchers: Ezulike, T.O., Uwasomba, C.F., Nwauzor, E.C. and Echendu, T.N.C.

Objectives:

1. To carry out a thematic survey of millipede problems in Rivers State in order to establish the incidence, period of invasion, type, extent of damage and stage of crops at damage.
2. To initiate control strategies using botanicals and synthetic chemical

Sponsor: NRCRI

Status: New

FS.8.2.7: Diagnostic survey of the farming systems of south east agro-ecological zone

Researchers: Udealor, A. and others

Objective: To carry out diagnostic survey of the farming systems of south east agro-ecological zone of Nigeria.

Sponsor: NRCRI

Status: New

FS.8.2.8: Evaluation of climate change adaptation measures of Root-Crop based farming system in south east Nigeria.

Researchers: Madu, T.U., Chukwu, G.O., Chinaka, E.C., Udealor, A., Ekwe, E.C. Uwasomba C.F., Umaru Haruna, and Okoye, B.C.

Objectives:

1. Determine the major climate change hazard affecting the production Root Crop based farming systems.
2. Evaluate gender difference in awareness and perception on climate variability and climate change and adaptation strength.
3. Assesses climate related vulnerability and adaptation opinion by farmers.
4. Build on indigenous knowledge in strengthening adaption to climate change.

Sponsor: NRCRI

Status: New

FS.8.2.9: Adoption of agricultural technologies by women farmers in Abia State.

Researcher: Madu, T.U.

Objective: To study the adoption of agricultural technologies by women in Abia State

Sponsor: NRCRI

Status: New

PROJECT 3: CROPS/NON-CROP INTEGRATION

FS.8.3.1: Performance of layers fed NRCRI, Umudike feeds and any other three commercial feeds.

Researchers: Okereke, C.O., Ibeagi, O.O., Udealor, A. and others

Objectives:

1. To determine the production performance of layers when fed NRCRI, Umudike feeds and commercial feeds
2. To evaluate the cost effectiveness of using NRCRI, Umudike feeds and commercial feeds.

Sponsor: NRCRI

Status: New

FS.8.3.2: Effect of replacing soybean meal with raw Bambara nut (*Voandzeia subterranean*) offal on the egg production performance and egg quality of laying hens in a cassava based diet.

Researchers: Okereke, C.O., Udealor, A. and others

Objectives:

1. To determine the suitability of raw Bambara groundnut as dietary animal protein supplement in laying hens.
2. To assess the economic value using raw bambara groundnut meal as a feed supplement.

Sponsor: NRCRI

Status: New

FS.8.3.3: Evaluation of the potentials of ginger and garlic in turkey production

Researchers: Ekwe, C.C., Obi, J., Uzegbu, H.O., Ewuziem, J. and Orji, A.

- Objectives:**
1. To determine the chemical composition of ginger and garlic
 2. To determine their effects on the general performance of turkey production.
 3. To determine the histopathology of the materials
 4. To determine the Economics of raising Turkey using garlic and ginger.
 5. To determine the meat quantity (organoleptic) property ginger/garlic meat.

Sponsor: NRCRI

Status: New

FS.8.3.4: Performance of broiler chickens fed graded levels of mucuna meals in partial replacement of soybean meal-based diet.

Researchers: Ekwe Chioma C., Ukachukwu, S.N. and Anigbogu N.

- Objectives:**
1. To determine the bioavailable energy (true metabolisable energy, TME and apparent metabolisable energy, AME) of mucuna meals in order to facilitate formulation of diet with this ingredient.
 2. To determine the dietary levels of inclusion of mucuna sloanei that will give optimum performance of broilers
 3. To determine the economic of using the mucuna meals-contained diets in broiler production.

Sponsor: NRCRI

Status: On-going

EXTENSION PROGRAMME

PROJECT 1 TRANSFER OF NRCRI DEVELOPED TECHNOLOGIES

ES 9.1.1: Popularizing NRCRI Improved Root and Tuber crops improved production and processing technologies through “training the trainers’ in south east Agro-ecological zone of Nigeria.

Researchers: Tokula, M.N. Ekwe, K.C Amaefula, Aniedu, O.C Asumugha and Ezulike T.

Objective: To increase the popularization of NRCRI improved technologies for increased adoption and diffusion in the zone.

Sponsor: NRCRI

Status: On-going

ES 9.1.2: Facilitating diffusion and adoption of Orange fleshed sweet potato to rural farmers through demo plots in NRCRI adopted villages.

Researchers: Asumugha G.N., Amamgbo L.E.F., Anyaegbunam H.N. and Echendu, T.N.C.

Objectives:

1. To establish demonstration plots at NRCRI adopted villages on orange fleshed varieties of sweet potato for dissemination to farmers
2. To increase the NRCRI improved technologies for increased adoption and diffusion in the zone.

Sponsor: NRCRI

Status: On-going

ES 9.1.3: Facilitating improved cassava multiplication and distribution on out grower’s scheme in Abia and Imo State.

Researchers: Asumugha G.N., Onuoha C, Ezebuiro N.C., Ekedo T.O. Okwusi, M.C., Amamgbo L.E.F. , Anyaegbunam H.N. and Aniedu O.C.

Objective: To multiply and distribute improved cassava varieties to farmers on out grower’s basis for distribution to the farmers for speedy diffusion.

Sponsor: NRCRI

Status: On-going

ES. 9.1.4: Disseminating NRCRI Technologies through Local Government Councils in South Eastern Nigeria.

Researchers: Asumugha G.N., Amamgbo L.E.F., Anyaegbunam H.N. Ezebuiro N.C., Ekedo T.O. Onuoha C, and Ezulike T.

Objective: To ascertain roles and levels of involvement of LGAs extension outfit and integrate them in NRCRI information and technology dissemination in the various States.

Sponsor: NRCRI

Status: On-going

ES 9.1.5: Farmers participatory approaches to disseminate recent cocoyam technologies (micro cormel, micro sett improved storage) developed at NRCRI in cocoyam growing States.

Researchers: Asumugha G.N., Amamgbo L.E.F., Ekedo T.O., G.O. Chukwu and Ezebuiro N.C.

Objective: To disseminate recent cocoyam technologies (micro cormel, micro sett improved storage) developed at NRCRI in collaboration with farmers in SE Nigeria and Kaduna State.

Sponsor: NRCRI

Status: On-going

ES 9.1.6: Gender in yam mini sett technology development, transfer and utilization in South East agro-ecological zone of Nigeria.

Researcher: Ironkwe A.G.

Objective: To study gender role in yam minisett technology development, transfer and utilization in SE Nigeria.

Sponsor: NRCRI

Status: On-going

ES 9.1.7: Assessment of the effectiveness of NRCRI Demonstration farms in dissemination of Root/Tuber Production Technologies among Youths in SE Nigeria.

Researchers: Nwakor F.N., Onuoha C., Ekwe, K.C. and Asumugha G.N.

Objectives:

1. To evaluate the level of utilization of these technologies by respondents
2. To ascertain the interest of the youths in agriculture.

Sponsor: NRCRI

Status: On-going

ES 9.2.1: Promotion and popularization of root and tuber crops technologies through field days at Umudike and Outstations.

Researchers: Tokula, M.N. Ekwe, K.C Amaefula, A., Aniedu, O.C., Asumugha, G.N. and all Heads of stations.

Objective: To enhance adoption of NRCRI technologies though the country

Sponsor: NRCRI

Status: On-going

ES 9.2.2: Production of radio/television farm Broadcasts and extension News Bulletins on NRCRI technologies (Routine).

Researchers: Ekedo T.O. and Asumugha, G.N.

Objectives:

1. To produce young farmer's club programme, teaching students in secondary and airing it on Radio and T.V.
2. To produce a DIY (Do it yourself) tapes and VCDs of various farming techniques and value addition to root and tuber crops.
3. To enhance training workshop for news media staff on scriptwriting presentation of radio and television programme, camera handling, film production techniques and computer appreciation.

Sponsor: NRCRI

Status: On-going

ES 9.2.3: Popularizing NRCRI improved technologies in North Central Agro-ecological zone of Nigeria.

Researchers: Tokula, M.N. Ekwe, K.C Ikeorgu, J.G., Aniedu, O.C., Asumugha, G.N. and collaborators.

Objective: To popularize NRCRI improved technologies in North Central agro-ecological zone of Nigeria.

Sponsor: NRCRI

Status: On-going

ES 9.2.4: Popularization and Dissemination of Turmeric through Adopted Villages and schools outreach Project.

Researchers: Onuoha, C., Ekedo T.O., Nwakor, F.N. and Asumugha, G.N.,

Objectives:

1. To describe the economic and medical benefit of tumeric
2. To describe the technologies used in turmeric production processing and utilization.

Sponsor: NRCRI

Status: New

PROJECT 3: TRAINING ACTIVITIES, ADOPTED VILLAGES/SCHOOL OUTREACH PROJECTS AND OUT-GROWERS SCHEMES.

ES 9.3.1: Dissemination of Agricultural technologies and training of farmers for increased agricultural productivity (Routine).

Researchers: Asumugha, G.N. Amangbo L.E.F., Onuoha, C., Nwakor, F.N. Ekwe, K.C Ekedo, T.O. and Ezulike, T.

Objective: To and upgrade knowledge and skills of agric technology and users on improved techniques of production, processing, storage utilization and marketing of root and tuber crops Empower targeted vulnerable groups for improved livelihoods through transfer of relevant technologies.

Sponsor: NRCRI

Status: New

ES 9.3.2: Field forDays Farmers and Stakeholders in South East and South South on NRCRI Technologies.

Researchers: Asumugha, G.N. Amamgbo L.E.F., Onuoha, C., Nwakor, F.N. Ekwe, K.C Ekedo, T.O. and Ezulike, T.

Objectives:

1. To popularize NRCRI released crop varieties and post harvest technologies among farmers in the two zones.
2. To enhance the adoption and utilization of NRCRI improved technologies among farmers in those zones.
3. To generate feed back information from farmers to scientists in the Institute.

Sponsor: NRCRI

Status: New

ES 9.3.3: Adopted Villages and Schools Outreach Project.

Researchers: Onuoha, C., Ekedo, T.O.Ezebuiro, N.C., Nwakor, F.N. and Asumugha, G.N.

Objectives:

1. To create ways for the research Institutes to impact positively on the lives of the members of the communities surrounding the Institutes and colleges.
2. To encourage large scale adoption of improved technologies
3. To create job opportunities for youths]
4. To enhance and ensure food security
5. To increase interest among the secondary schools in agriculture and home Economics.

Sponsor: NRCRI

Status: New

ES 9.3.4: Training of NRCRI staff and other stakeholders on the use of ICTs

Researchers: Okwusi M.C. and Asumugha, G.N.

Objectives:

1. To train NRCRI Staff and other Stakeholders (farmers, input dealers, etc) on the use of ICTs.
2. To prepare a guide (Directory) for all stakeholders involved in the agricultural information exchange in NRCRI, Umudike.

Sponsor: NRCRI

Status: New

ES 9.4.1: Structure, Conduct and Performance of Sweet potato Market in South East Agro ecological zone of Nigeria.

Researcher: Anyaegbunam H.N.

- Objectives:**
1. Examine the socioeconomic characteristics of the sweet potato traders
 2. To evaluate the structure of the market for sweet potato
 3. Examine the conduct of the sweet potato market
 4. Assess the performance of the market for sweet potato.

Sponsor: NRCRI

Status: New

ES 9.4.2: NRCRI/NAERIS (mis) market survey/Analysis on the root and tuber crops and their products in South –east Agro –ecological zone.

Researchers: Okwusi M.C. and Asumugha, G.N. B.C. Okoye, C. Ishiguzo and others.

- Objectives:**
1. To ascertain current prices of root and tuber crops as well as their products.
 2. To carry out time series price analysis of the roots and tubers and their products.
To identify their supply and demand locations and advice farmers, marketers, input dealers, processors and other stakeholders to improve the demand and supply chain.

Sponsor: NRCRI

Status: New

ES 9.4.3. Evaluation of the Structural Characteristics of Sweet potato market in FTC and Nassarawa State, Nigeria.

Researchers: Ejechi, M.E., Anyaegbunam H.N., Aboajah , F.N., Okwusi M.C., Njoku J.C. and Asumugha, G.N.

- Objectives:**
1. To determine the degree of Sweet potato market concentration in the study area.
 2. To determine the problems the marketers encounter in Sweet potato marketing activities.

Sponsor: NRCRI

Status: New

ES 9.5.1. Impact Assessment of NRCRI Disseminated technologies on the Livelihoods of Farm Household in Anambra and Enugu States.

Researchers: Ekwe, K.C., Tokula, M.H., Ironkwe A.G. and Nwakor, F.N.

- Objectives:**
1. To Ascertain the extent of farmer’s awareness and adoption of selected Technologies disseminated by the Institute.

2. To assess the effects of adoption of the technologies on certain livelihood indicators.

Sponsor: NRCRI

Status: New

ES 9.5.2: Evaluation of extent of adoption of whitefly resistant sweet potato varieties disseminated and spread in the DFID whitefly sweet potato pilot states.

Researchers: Asumugha, G.N., Okwusi M.C., Mbanasor E.O., Akinpelu, A.O. and Amaefula A.

Objective: To evaluate extent of adoption of whitefly resistant sweet potato varieties in Pilot States.

Sponsor: NRCRI

Status: New

ES 9.5.3: Impact Assessment of cassava based technologies transferred to farmers in 5 states in S.E. agro-ecological zone of Nigeria.

Researchers: Ironkwe A.G. Ekwe, K.C., and Amaefula A.

Objective: Impact Assessment of cassava based technologies transferred to farmers in 5 states in S.E. agro-ecological zone of Nigeria

Sponsor: NRCRI

Status: New

ES 9.5.4: Constraints Analysis of Agro Enterprises Development in Root Crops Based Livelihood Opportunities among Rural Women and Youths in South Eastern Nigeria.

Researchers: Amaefula A. Asumugha, G.N., Ekwe, K.C., and Anyaegbunam H.N.

- Objectives:**
1. To assess root crops based livelihood opportunities available to women and Youth in the study area.
 2. To determine factors affecting root and tuber crops output in South Eastern Nigeria
 3. To determine factors affecting processing and marketing of root and tuber crops in south eastern Nigeria.

Sponsor: NRCRI

Status: New

ES 9.5.5. Adoption of the Sweetpotato Production technologies by farmers in South –East Agro ecological zone.

Researchers: Mbanaso E.O. and Anyanwu. A.C.

Objectives: To study the adoption of sweetpotato production technologies by farmers in SE agro-ecological zone

Sponsor: NRCRI

Status: New

ES 9.5.6: Facilitating adoption and diffusion of NRCRI improved root and tuber crops varieties through demonstration plots in the host communities of Otobi sub station.

Researchers: Tokula, M.N. and Wende, F.

Objectives: To popularize NRCRI improved technologies in Otobi substation host communities.

Sponsor: NRCRI

Status: New

ES 9.5.7: Facilitating adoption of improved cocoyam production technologies for cocoyam Rebirth among farmers in 3 Agricultural zones of Abia State.

Researchers: Nwakor, F.N., Ekwe, K.C., Chukwu, G.O. and Asumugha., G.N.

Objectives:

1. To determine the cocoyam production status of farmers in these zones
2. To ascertain the awareness of the new cocoyam technologies disseminated by NRCRI.
3. To organize workshop at NRCRI to educate these cocoyam farmers on the new cocoyam technologies.

Sponsor: NRCRI

Status: New

ES 9.5.8: Producer behaviour of subsistence cassava farmers in response to change and transaction costs in south – eastern Nigeria.

Researcher: Okoye. B.C.

Objective: To provide empirical evidence on producer behaviour of subsistence cassava farmers in responses to technological change and transaction costs in South Eastern Nigeria.

Sponsor: NRCRI

Status: On-going

ES 9.5.9: Status Performance and constraints of NRCRI/IITA CMD resistant cassava varieties in SE agro-ecological zone of Nigeria.

Researchers: Ezebuiro, N .C., Eke-Okoro, O.N., Ekwe, K.C. and Chinaka, E.C.

Objectives:

1. To assess adoption and diffusion of CMD released resistant cassava varieties in the farming systems of the study area.
2. To evaluate the status, performance and constraints of the released CMD varieties in the study area.

Sponsor: NRCRI

Status: On-going

POST HARVEST TECHNOLOGY PROGRAMME

PROJECT 1: PROCESSING OF ROOT/TUBERS INTO DIVERSE FOOD FORMS, LIVESTOCK FEED AND INDUSTRIAL RAW MATERIALS.

PH 10.1.1: Quality Evaluation and Cost Benefit Analysis of Odourless Fufu Flour Production at NRCRI Umudike using the Flash Dryer

Researchers: Anayegbunam, H.N., Chijioke, U., and Oti, E.

Objectives:

1. To standardize the drying operations involved in the production of odourless fufu flour using the dryer.
2. To determine the physico-chemical properties of odourless fufu produced using the flash dryer
3. To identify and cost the necessary inputs
4. To estimate the gross and net processing margin
5. To state the policy implication of the study and make recommendations based on the findings.

Sponsor: NRCRI

Status: New

PH 10.1.2: Microbiological and physico-chemical studies on stored fufu flour from fermented orange-fleshed sweetpotato (OFSP)

Researchers: Amajor, J.U. Oti, E. Omodamiro, R.E. and Aniedu C.

Objectives:

1. To determine the microbiological safety for consumption of fufu from fermented Orange-Fleshed Sweet potato (OFSP)
2. To determine the physico-chemical attributes of the fermented fufu and flour from OFSP.
3. To determine the acceptability of the fufu made from fermented OFSP.

Sponsor: NRCRI

Status: New

PH 10.1.3: Identification of marketing channels for value added NRCRI, products.

Researchers: Ewuziem, J.E. Aniedu, C. Ibeaggi, O., Nwadi V, and Onyenobi, V.O.

Objectives:

1. To estimate the profit margins of value addition in selected root tuber crops.
2. Determine the benefit cost ratio of value addition.

Sponsors: NRCRI

Status: New

PH. 10.1.4: Gender roles in cassava processing and utilization in Anambra State of Nigeria

Researchers: Chinaka, E.C. Okoye, B.C., Ezebuiro, N.C. Akinpelu, A.O and Oti, E.

Objectives:

1. Determine the effect of gender on cassava processing and utilization in the study area.
2. Ascertain the factors that influence gender in processing and utilization in the study area.
3. Identify constraints encountered by gender in processing and utilization in the study area.

Sponsor: NRCRI

Status: New

PH. 10.1.5: Food quality assessment of stored flour produced from rizga, Hausa potato and amora

Researchers: Ekjeledo, E.N., Omodamiro, R.M., Ukpabi, U.J. and Olojede, A.O.

Objectives:

1. To determine the shelf life of flours produced from rizga, Hausa potato and Amora.
2. To assess of storage on the quality of the food products.
3. To ensure the availability of the storage materials when out of season.

Sponsor: NRCRI

Status: New

PH 10.1.6: Rheological and sensory characteristics of flour and fufu produced from selected fermented and Unfermented Yam Chips

Researchers: Omodamiro, R.M. Oti, E., Ekeledo, E.N and Chijioke, U.

Objectives:

1. To determine the rheological properties of flour and fufu made from fermented and unfermented selected yams.
2. To determine the effect of storage on the sensory properties of the flour.

Sponsor: NRCRI

Status: New

PH 10.1.7: Characterization of cocoyam varieties for rheological and functional properties and development of new food forms from the flours.

Researchers: Ezigbo, V.U., Oti, E., and Omdamiro, R.M.

Objectives:

1. To characterize all cocoyam varieties in NRCRI for rheological and functional properties.
2. To develop new food forms from cocoyam flours.

Sponsor: NRCRI

Status: New

PH 10.1.8: Studies on biochemical changes and pathological occurrences associated with ginger rhizomes stored under different preservation systems.

Researchers: Ezigbo, V.U. Oti, E. Nwadili, C.O. and Omodamiro, R.M.

Objectives:

1. To investigate biochemical changes and pathological occurrences that promote deterioration of ginger under different storage systems.
2. To develop inexpensive and efficient methods of storing ginger rhizomes

Sponsor: NRCRI

Status: New

PH 10.1.9: Effect of processing on the nutritional and phytochemical properties of rizga, Hausa potato and tumeric

Researchers: Ezeocha, V.C., Ekwelwm, E. Oti, E., and Olojede, A.O.

Objectives:

1. To determine the Nutritional benefits of Livingstone potato, Hausa potato and Turmeric
2. To evaluate the effect of processing on the nutritional and health promoting properties of Livingstone potato, Hausa Potato and Turmeric.

Sponsor: NRCRI

Status: New

PH 10.1.10: Functional, chemical and sensory properties of composite flour from trifoliolate yam and cocoyam

Researchers: Ezeocha, V.C., Oti, E., and Omodamiro, R.M.

Objectives:

1. To develop a composite flour from trifoliolate yam and cocoyam for fufu production.
2. To determine the functional and sensory properties of the composite flours d developed

Sponsor: NRCRI

Status: New

PH 10.1.11: Effect of processing on the Chemical and Biological Properties of Phytoestrogens in *Dioscorea dumetroum* (Wild and Cultivate Varieties) and *Dioscorea alata*

Researchers: Ezeocha V.C., Ojmelukwe P.C., and Onwuka G.I.

Objectives:

1. To determine the health benefits of *Dioscorea dumetorum* beyond those provided by basic nutrients such as vitamins and minerals
2. To evaluate the effect of different processing methods on these photochemical.

Sponsor: NRCRI

Status: New

PH 10.1.12: Quality assessment and shelf-life studies on orange-flashed sweet potato based drinks.

Researchers: Omodamiro, R.M., and Oti, E.

Objective: To assess the quality and shelf-life of orange-flashed Sweetpotato based drinks.

Sponsor: NRCRI

Status: New

PH 10.1.13: Effect of processing and storage on the total carotenoid content of gari and odourless fufu flour made from selected yellow root cassava varieties

Objectives:

1. To determine the amount of total carotenoid (B-carotene) content of gari and odourless fufu made from yellow root cassava variety.
2. To evaluate any effect of length of fermentation on the carotenoids content of the food forms.
3. To advice breeders on any finding(s) from the above objectives.
4. To advice processors of yellow root cassava variety on the appropriate method of processing for high quality products.
5. To diversity utilization of the yellow root cassava variety.
6. To evaluate packaging materials appropriate for the products.

Sponsor: NRCRI

Status: New

PH 10.1.14 Food quality assessment of exportable yams

Researchers: Ezigbo, V.U., Omodamiro, R.M., Oti, E and Ikeorgu, J.G.

Objectives

1. To evaluate the nutritive value of yam selected for export
2. To evaluate the sensory and rheological qualities of yams selected for export.

Sponsor: NRCRI

Status: New

PH 10.1.15: Impact studies of the training in value addition to root/tubers conducted by NRCRI in 2005

Researchers: Aniedu, C. Aniedu, O.C. and Oti, E.

Objectives:

1. To determine socio-economic characteristics of the farmers who participated in the training
2. To determine the impact of the training on the livelihood of the people.
3. To determine the rate of adoption of the components of the training in value added products of root/tuber crop.
4. To determine problems being encountered by the farmers in the adoption processes.
5. To determine areas of improvement of future trainings.

Sponsor: NRCRI

Status: New

PH 10.1.16: Processing and Product Evaluation of Stored Cassava Roots

Researchers: Chijioke, U., Oti, E., Nwadili, C., Ehesianya, C.N., and Omodamiro R.M.

Objectives:

1. To re-evaluate the efficiency of the NSPRI cassava roots storage building
2. To assess the effect of storage on the chemical and sensory qualities of gari and odourless fufu flour processed from the stored cassava roots.
3. To investigate pathogenic organisms that attack cassava roots in storage
4. To assess the level of insect infestation and damage on the stored roots

Sponsor: NRCRI

Status: New

PH 10.1.17: Effect of replacement levels on maize with meal supplemented with palm oil in broiler ration

Researchers: Okereke, C.O. and Oti, E.

Objectives:

1. To determine the proximate composition, gross energy and anti-nutritional factors of Cassava Root Meal such as HCN
2. To determine the dietary level of inclusion of unpeeled cassava root meal supplement with palm oil in broiler ration.
3. To determine the economics of the diets

Sponsor: NRCRI

Status: New

PH 10.1.18: Utilization of Root/Tuber Crop Peels in Mushroom Production

Researchers: Aniedu, C., and Ekeledo, N.

Objectives

1. To determine the best root peels in mushroom production
2. To put root/tuber processing wastes to profitable use

Sponsor: NRCRI

Status: New

PH 10.1.19: Assessment of the qualities and acceptability of value added products of recently released cassava and yam varieties

Researchers: Aniedu , C. Omodamiro, R. Oti, E. Egesi, C.N. and Ikeorgu, J.G.

Objectives:

1. To determine the acceptability of their value-added products
2. To determine the chemical composition and functional properties of flours of the newly bred cassava and yam.

Sponsor: NRCRI

Status: New

PH 10.1.20: Development of Yam, Potato and Ginger Recipes

Researchers: Aniedu, C., Oti, E., and Omodamiro R.

Objectives:

1. To develop new food forms of yam, potato and ginger
2. To determine the sensory acceptability of the new food forms
3. To determine the varietal effects of yam, potato and ginger on their new food forms
4. To determine chemical composition of the new foods
5. To compile a manual of the new food forms of yam, potato and ginger.

Sponsor: NRCRI

Status: New

PH 10.1.21: Feed Value of Cocoyam (*Colocasia esculenta*) Peel Meal for Broiler Chickens

Researchers: Okereke, C.O., and Oti, E.

Objectives:

1. To determine the proximate composition, gross energy and anti-nutritional Factors of cocoyam peel such as oxalate, tanning HCN.
2. To determine the dietary level of inclusion of cocoyam peels.
3. To determine the economics of the diets.

Sponsor: NRCRI

Status: New

PROJECT 2: DEVELOPMENT OF FARM-GATE MACHINES AND TOOLS FOR PROCESSING ROOT AND TUBERS

PH 10.2.1: Development of a multi-purpose dryer for root/tuber crop products

Researchers: Kadurumba, C.H., Tolubanwo, S.E., Ikejiofor, M.C. Okwesa, C.O. Nwachukwu, K., and Oti E.

Objectives:

1. Reduction of drudgery in operation
2. Reduction in cost of operation while maximizing profit
3. Reduction in labour cost

Sponsor: NRCRI

Status: New

PH 10.2.2: Modification of a Ginger Splitting Machine

Researchers: Tolubanwo S.E., Kadurumba, C.H., Ikejiofor, M.C., Okwesa, C.O., and Nwachukwu, K.

Objectives:

1. Reduction of drudgery in operation
2. Timeliness in operation
3. Reduction in cost of operation while maximizing profit
4. Reduction in labour cost.

Sponsor: NRCRI

Status: New

GENETIC RESOURCES UNIT

PROJECT 1: GENETIC RESOURCE UNIT

GR. 11.1.1: Exploration, conservation, characterization and evaluation of root and tuber crops germplasm.

Researchers: Ezebuoro, N.C., Eke-Okoro, O.N., Amanze, N.J. and Uwaecheghi, J.

Objective: To conduct a survey of landraces of root and tuber crops in selected state in Nigeria.

Sponsor: NRCRI

Status: New

GR. 11.1.2: Conservation/maintenance of existing root and tuber crops germplasm.

Researchers: Ezebuoro, N.C., Eke-Okoro, O.N., Amanze, N.J. and Uwaecheghi, J.

Objective: To maintain the existing 922 cassava, 122 yam, 50 sweetpotato, 2232 potato, 8 cocoyam and 9 ginger accessions and other root crops.

Sponsor: NRCRI

Status: New

GR. 11.1.3: Evaluation of selected landrace cultivars of root and tuber crops germplasm for early maturity and productivity.

Researchers: Eke-Okoro, O.N., Ezebuoro, N.C., Amanze, N.J. and Uwaecheghi, J.

Objective: To detect the salient potentials of our landrace cultivars of root and tuber crops for crop enhancement/improvement.

Sponsor: NRCRI

Status: New

GR. 11.1.4: Evaluation of selected landraces cultivars of sweetpotato and cocoyam for early maturity high yielding and resistance to biotic and abiotic conditions.

Researchers: Ezebuoro, N.C., Eke-Okoro, O.N., Amanze, N.J. and Uwaecheghi, J.

Objective: To detect the salient potentials of our landrace cultivars of root and tuber crops for crop enhancement/improvement.

Sponsor: NRCRI

Status: New

GR. 11.1.5: Sweetpotato germplasm collection, evaluation and characterization.

Researchers: Nwankwo, I.I.M., Echendu, T.N.C. and Onunka, N.A.

Objectives:

1. To collect accessions that will broaden the genetic diversity of sweetpotato
2. To conserve breeding materials of native (and or exotic) species that has nutritional or industrial potential.

Sponsor: NRCRI

Status: New

GR. 11.1.6: Collections conservation and studies on minor/medicinal yams (*D dumetorum*, *D bulbifera*, *Amora* etc) in Nigeria.

Researchers: Nwachukwu, E.C., Ikeorgu, J.U., Obidiegwu, J., Onyeka, J, Eke-Okoro, O.N. and Ukpabi U.J.

Objective: To advance the conservation and use of lesser known yams in an effort to alleviate poverty, attain food security and promote environmental conservation

Sponsor: NRCRI

Status: On-going

BIOTECHNOLOGY UNIT

PROJECT 1: CONVENTIONAL BREEDING AND BIOTECHNOLOGY APPROACHES IN THE DEVELOPMENT OF ROOT AND TUBER CROPS

BT.12.1.1: Targeted application in vitro tools

Researchers: Mbanaso, E.N.A., Nkere, C.K., Ewa, F., Egesi C.N., Okogbeni, E. and Okorochoa, E.O.A.

Objectives:

1. To produce disease-free propagules of some virus-laden cultivars of root and tuber crops.
2. To multiply elite cultivars and special collections for research.
3. To screen cassava, ginger and cocoyam cultivars for regeneration capacity/production of somatic embryos.
4. To increase frequency of plant recovery from seeds through embryo rescue

Sponsor: NRCRI

Status: New

BT. 12.1.2: Reducing the cost of micropropagation for more routine application.

Researchers: Mbanaso, E.N.A., Nkere, C.K. and Ewa, F.

Objectives:

1. To lower cost through the use of cheap and locally sourced materials as alternatives at the different stages of micropropagation.
2. To reduce cost by the downward optimization of media ingredients.
3. To reduce cost by the elimination of certain stages through the manipulation of media and duration of passage

Sponsor: NRCRI

Status: New

BT 12.1.3: Creation of awareness on certain practical and commercializable tools of biotechnology.

Researchers: Mbanaso, E.N.A., Nkere, C.K. and Ewa, F.

Objectives:

1. To produce simple pamphlets on biotechnology
2. To produce hands-on training manual on postflask management of in vitro derived plantlets

Sponsor: NRCRI

Status: New

BT 12.1.4: Evaluation of field performance of in vitro derived plantlets compared with the conventional propagules of root and tuber crops.

Researchers: Nkere, C.K., Mbanaso, E.N.A., Okorochoa, E.O.A. and others

Objectives:

1. To assess the yield performance of in vitro plants against the conventional plants
2. To assess disease susceptibility of in vitro against the conventional plant overtime

Sponsor: NRCRI

Status: New

BT 12.1.5: Molecular characterization of NRCRI mandate crops collections

Researchers: Egesi, C.N., Okogbeni, E., Onyeka, J., Nkere, C.K., Ewa, F., and Mbanaso, E.N.A.

Objectives:

1. To provide information on the genetic diversity of root and tuber crops germplasm in NRCRI.
2. To provide information on the genetic diversity of root and tuber crops germplasm in NRCRI.

Sponsor: NRCRI

Status: New

INFORMATION AND DOCUMENTATION SERVICES DIVISION

PROJECT 1: PROCEEDINGS OF THE FIRST AND SECOND NATIONAL WORKSHOPS ON ELECTRONIC INFORMATION HELD SEPTEMBER 11-13, 2006 AND OCTOBER 26-28, 2009 RESPECTIVELY AT NRCRI UMUDIKE

Researchers: Okocha K.F. and Uhegbu A.N.

- Objectives:**
1. To document in a comprehensive book format all intellectual contributions from the workshops.
 2. Ensure proper editorial guidance of such contributions.
 3. Create awareness of NRCRI'S intellectual contributions of the subject.

Sponsor: NRCRI

Status: New

PROJECT 2: UPGRADING OF NRCRI DIGITAL LIBRARY FOR INTERNET ACCESS

Researchers: Okocha K.F. and Olaide Alawode

- Objectives:**
1. To facilitate global access to library resource through internet.
 2. To share from the economic benefits of internet services through e-commerce.
 3. To contribute to the global information network and knowledge economy.

Sponsor: NRCRI

Status: New