

BBEST DUKƆA FE ÐOÐOWO ÐUTI NYATAKAKA

Ghana BBEST Fe ÐoÐo Gbãto 1

TaƆonutinunya: Nutome Fe ÐuÐoÐo Na
Agbledela Suewo Fe Lãnyinyi, Tɔmelãwo
Kple Agblemenukudelawo Le Ghana



Michael Yao Osae^a, Enoch Selorm Kofi
Ofori^a, Dinah Marri^a, Evelyn Ama Otoo^a,
Evans Ohemeng^a, Francis Apaatah^a,
Joshua Sintim^a, Jennifer Mamle Nuenor^a,
Victor Manyong^b, May-Guri Sæthre^c, Komi
Mawufe Agbodzavu^d

^aBiotechnology and Nuclear Agriculture Research Institute,
Ghana Atomic Energy Commission, P. O. Box LG 80, Legon, Accra, Ghana

^bInternational Institute of Tropical Agriculture (IITA),
Dar es Salaam, 34441, Tanzania

^cInternational Institute of Tropical Agriculture (IITA),
Torderudveien 16, Ås, 1434, Norway

^dInternational Institute of Tropical Agriculture (IITA),
C/Gombe, 4163 Avenue, Du Haut Congo, Kinshasa,
Democratic Republic of the Congo

DGƆƆDONYA

Le xexeame katã la, agbledede nana nuɖuɖu siwo ade tɔn milion 23.7 hena gbe sia gbe nuɖuɖu (FAO, 2017), gake esia va le gazazã gã aɖe me na nutoame. Agbledede wɔna abe blaevɛ-vɔ-ɖeke fe mama ɖe alɔfa dzi (21%) ene lɔfo nye nu si he ya siwo gblẽa nu le anyigba ɲu vɛ eye wòdea agba ɖe lãwo fe agbenɔnɔ dzi (Duque-Acevedo *et al.*, 2020). Zi geɖe la, agblemenukuwo abe lunuwo, atikutsetsewo, alo tomenuwo ene fe agbɔsɔsɔ si nye blaetɔ va se ɖe blaene ɖe mama ɖe alɔfa dzi (30–40%) koe woɲena, le esime blaade va se ɖe blaadre ɖe mama ɖe alɔfa dzi (60–70%) ya zua nu gbegblẽwo. Gawu la, wobu akɔnta be nuku siwo woɲe fe agbɔsɔsɔ abe 40% (tɔn bilion 2.5) ene buna alo wogblẽna (WWF, 2021). Dugãmetɔwo fe xexlẽme hã nye tsofe vevi bubu na afeme gbeduɖɔ. Esi wobu akɔnta be dugãmenɔlawo ade milion blaevɛ (20) le fe 2023 me la, Ghana wɔa afeme gbeduɖɔ tɔn milion etɔ (3 million tons) fe sia fe, eye wo dometɔ siwo ade blatɔ-vɔ-ene va se ɖe blaade-vɔ-adre ɖe mama ɖe alɔfa dzi (54-67%) nye esiwo me aɖu wɔɔe mele o. Gẽ ɖeɖe dzaa wɔa gbeduɖɔ si ade tɔn milion 2eka fe sia fe. Wogblẽa gbeduɖɔ siawo fe akpa gãtɔ ɖi be woagblẽ loo wotɔa dzoe alo wova zãa wo tso xea vewo, si wɔne be ɖifofo kple yame fe nɔnɔme fe tɔtrɔ kpakple lãmesɛkuxiwo dona tso eme. Esi amewo fe agbɔsɔsɔ le dzidzim ɖe edzi eye nuɖuɖu fe hiahia le xexeame katã le dzidzim ɖe edzi ta la, egbɔkpɔnu yeyewo hiã kpata be woatsɔ akpɔ gbeduɖɔ siwo dona tso agbledede, dugãwo kple nuɖuɖu fe ɖoɖowo me gbɔ nyuie.

Taɖoɲutinunya he ɲuɖoɖo mɔnu tegbee si dzi woato akpɔ gbeduɖɔ siwo menye ame wɔwɔe o. Taɖo (*Hermetia illucens*) (Nɔnɔmetata. 1A) wɔa lãvi siwo me amenyinu si tua agbe ɖo sɔ gbɔ ɖo (Nɔnɔmetata. 1B) eye wòwɔa aɖu si nye dzɔdzɔmetɔ (Nɔnɔmetata. 1C). Nudzodzoe sia megblẽa nu le amegbetɔwo ɲu abe tagbatsutsu siwo ate ɲu akaka ɖɔlɛlewo o.

Ne wotsɔ Taɖo fe mɔɖaɲununya de Ghana fe agbledede kple gbeduɖɔwo gbɔkpɔkpɔ fe ɖoɖowo me la, dukɔa ate ɲu aɖe agbledede fe kuxi gbegblẽwo dzi akpɔtɔ, vevietɔ ku ɖe yame fe nɔnɔme fe tɔtrɔ kple nutome fe gbegblẽ dzi, ana nuɖuɖu fe dedienɔnɔ nanyo ɖe edzi, eye wòado alɔ agbledela suewo to aɖaɲu yeye siwo li tegbee le nutoa me.



Nɔnɔmetata 1: Taɖo (A) Taɖo lãvi siwo wolé (B) kple aɖu (C). Kpekpeɖeɲuxɔfe: BBEST Project/BNARI

EGBɔKPɔNU SI LI Vɔ MESɔ GBɔ O

Agbledela siwo nye, lãnyilawo, tɔmelãnyiwo, kple nukugbledelasuewo doa go kuxi siwo le dzidzim ɖe edzi le ga gbogbo zãza me kple mɔnukpɔkpɔ manɔanyi boo be woate ɲu akpɔ agbledenu siwo wozãna ɖaa abe lãwo fe nuɖuɖu, ayinuwo kple aɖu wɔwɔewo (Makkar *et al.*, 2014). Menye agba ɖeɖe koe nye agbledenu siawo le ga kuxi gome o ke alesi woanɔ te ɖe xexeame ɲu kple alesi womenɔa anyi tegbee o hã. Nu siawo tɔ asi ale si wòhiã kpata be woazã atike bubu siwo mexɔ asi o, woanɔ anyi ɖaa, ado alɔ ɖɔwɔwɔ, aɖe ɲusɛkpɔɖeamedzi gbegblẽ ɖe nu gbagbewo fe agbenɔnɔ dzi, eye woado nuɖuɖu fe ɖoɖo wɔna siwo nyo ɖe ɲɔ.

Gawu la, mɔnu bɔbɔe siwo wozãna tso kpɔa gbeduɖɔ siwo tso agbledede kple nuɖuɖu fe ɖoɖowo me abe dzotɔtɔ le gaglãgbe kple gbeduɖɔ wɔwɔ ene nana ya siwo gblẽa nu le anyigba ɲu la dona fũ. Dzotɔtɔ agblemenukuwo fe gbeduɖɔwo le gaglãgbe ɖea ya gbogbo aɖewo siwo gblẽa nu le anyigba ɲu (GHGs) siwo kpɛna ɖe yame fe nɔnɔme fe tɔtrɔ ɲu ɲuto la dona. Le GHGs megbe la, dzotɔtɔ le gaglãgbe dea ɖifofo nutome abe ya gbegblẽwo kple atike siwo me aɖi le kple aɖiga siwo ate ɲu anɔ anyigba, tsiwo, kple agblemenukuwo dzi, age ɖe nuɖuɖu fe kɔsɔkɔsɔa me eye wòahɛ afɔku vɛ na nugbagbevi suewo, nukuwo, lãwo, kple amegbetɔwo. Gbeduɖɔ wɔwɔ hia na tefe siwo nyo be woaxe mɔ ɖe nunyamewo fe sisi nu, edze na gazazã ɖe ɖɔwɔnuwo kple ɖɔwɔlawo ɲu, eye ate ɲu ahe vevɛwo vɛ ne womekpɔ wo gbɔ nyuie o.

NUÐODO SI BBEST DŌWŌÐODOA WŌ

Taḍoḅutinunya (Nṇṇṇmetata. 2) nye egbṇkpṇnu si wotu ḍe nugbagbewo dzi be wṇakpṇ kuxi siwo le nugbagbewo fe gbeḍuḍ siwo le dzidzim ḍe edzi le agbledede kple nuḍuḍu fe ḍṇḍowo me gbṇ nyuie. Agbledede kple nuḍuḍu fe ḍṇḍowo wṇa gbeḍuḍu gbogbo aḍe siwo dometo aḍewoe nye agblemenukutsrowo, lṇwo fe mi kple nuḍuḍu siwo gblṇ kpakple nu siwo dona tso nuḍuḍu ḡuḍwṇwṇ me. Nenema ke gbeḍuḍuwo gbṇkpṇkṇ le mṇnu xoxowo nu (kpḍ., gbeḍuḍuwo tsotsṇ fu gbe ḍe vewo me, dzototo le gaglṇgbe, kple gbeḍuḍu fe mavomavo nyuie) hea ya gbeḡblṇ fe dodo (methane, CO₂), vevṇ kple nudzodzoewiwo fe kuxiwo kple tsi kpakple anyigba fe ḍiḍofo ve (Makkar *et al.*, 2014). Taḍo suewo ḍua gbeḍuḍuwo eye wotrṇa wo wozua nu siwo ḡu viḍe le. Le taḍoviwo te ḡu ḍua gbeḍuḍu vovovo siwo gblṇa nyuie le yeyiḡi kpui aḍe me. Taḍoviwo ate ḡu aḍe gbeḍuḍu fe agbṇsṇsṇ dzi akpṇto va ḍṇ mama blaadre de alafa dzi. (70%) to wo ḍuḍu me. wṇa sia trṇa gbeḍuḍu siwo fe asixṇxṇ le sue wozua nugbagbeḡusṇ kple aḍu siwo ḡu asixṇxṇ le. Wozṇa lṇviwo fe nugbagbevi siwo me nunyiame sṇ gbṇ ḍṇ abe lṇwo fe nuḍuḍu ene (tṇmelṇ, koklo, ha). Nenema ke nu siwo suso (BSF Frass) nye nunyiame kple nugbagbevi suesue siwo me viḍe geḍe le. Woate ḡu azṇ Taḍo lṇviwo atso awṇ ami/ami si wozṇa le lṇwo fe nuḍuḍu alo ḍṇwṇfe ḡṇwo fe ḍṇwṇwṇ me.



Nṇṇmetata 2: Taḍaḅutinunya si nugbagbba fe ganya ḍem fia. Source: BNARI

Taḍoḅutinunya trṇa gbeḍuḍu siwo wotsṇa fua gbe ḍe vewo me, si ḍea ḍiḍofo kple ya siwo gblṇa nu le anyigba ḡu dzi kpṇtṇa. Mṇḍaḅununya la ḍea vevṇ madeamedzi, nudzodzoewiwo fe tefexṇxṇ, kple nu siwo nye ḍṇlṇkui tsṇlawo dzi kpṇtṇa le agbledefewo. Ganyawo fe viḍe siwo wokpṇa tsoa mṇḍaḅununya sia me dometo aḍewoe nye gbeḍuḍu tsotsṇ fu gbe fe gazazṇwṇ dzi ḍeḍe kpṇto na agbledelawo kple nuḍuḍuḡuḍwṇlawo, gakpṇmṇnu bubuwo nana to lṇviwo, ami, kple ami dzadzra me kple ḡuḍṇḍṇ ḍe nuḍuḍutsofe xṇasiwo abe tṇmelṇmi kple soya-mi ene ḡu dzi ḍeḍe kpṇto. Mṇḍaḅununya la ḍoa anyigba fe lṇmesṇ ḍe ḡṇṇ, si naa nukuwo fe tsetse nyona ḍe edzi, Enaa agbledede fe ḍṇḍṇ te ḡu wṇa ḍṇ to nunyiamewo kple nugbagbewo gbugbṇḡawṇ me. Taḍoḅutinunya ḍoa amegbetṇfomea fe hadome viḍewo ḍe ḡṇṇ. Esiawo dometo aḍewoe nye ḍṇ siwo me womezṇa gbeḍuḍu le o dodo ḍe ḡṇṇ le gbeḍuḍuwo nufofofu, nudzodzoewiwo fe agbledede, kple nuwṇwṇwṇ fe asitsatsa. ḍoa alo nuḍuḍu fe dedienṇṇ to nuḍuḍu siwo mexṇ asi o na lṇwo kple tṇmelṇwṇ me.

TAFOFO

Taḍoḅutinunya he ḡuḍṇḍṇ si aṇṇ anyi ḍaa ve na Ghana fe gbeḍuḍu, lṇwo fe nuḍuḍu fe asixṇxṇ, kple anyigba fe nyonyome si le to yim. Eḍoa alo nugbagbewo fe ganya eye wṇnaa agbenṇṇ nyona ḍe edzi, vevietṇ na sṇhewo kple nyṇnuwo. Mṇḍaḅununya sia nye Ghana fe gbeḍuḍuwo zazṇ kple nutome fe lṇmesṇkuxi siwo le dzidzim ḍe edzi la gbṇ kpṇnu ḡuṇḡuṇṇ si li tegbee, vevietṇ le dugṇwṇ me abe Ḡṇene afi si gbeḍuḍu xṇ afe ḍṇ. Gake exṇxṇ de eme le sue ḍe dukṇa fe sededewo, dedienṇṇ fe dzidzenuwṇ, kple ḍṇḍowo fe ḍekawṇwṇ fe anyimanṇmanṇ ta. Kuxiwo abe manyamanya bṇ, mṇḍaḅununya fe dometsotsowo, kple amenḡugblṇnyawo ene gakpṇto li. Esiawo gbṇ kpṇkpṇ hiṇ mṇfiame siwo me kṇ, nugbagbewo fe dedienṇṇ ḡuti ḍṇḍowo, hehenana si ḡu wodṇ taḍṇdzinu ḍṇ, gakpekpeḍṇunana, kple gadede asi le aḍaḅu me be woatsṇ avu Taḍo fe ḡutetewo nu le nuḍuḍu fe dedienṇṇ, yame fe nṇṇṇme fe nṇṇṇme sesṇwṇ nu, kple kṇfenutowo me fe ḡṇṇyiyi si axṇ amewo katṇ ḍe eme.

LŌLŌ DE EDZI

Norwegian Agency for Development Cooperation (Norad), si nye Norway fe gakpekpedeŋu xexlêdzesi QZA-21/095, to International Institute of Tropical Agriculture (IITA) dzi be eyae nye gakpekpedeŋunala vevito na dɔa: “CHICKEN, FISH AND PIGS FEED AND ORGANIC FERTILIZER VALUE CHAIN DEVELOPMENT USING BLACK SOLDIER FLY- BASED URBAN BIOWASTE PROCESSING IN DRC, GHANA, MALI AND NIGER”. Wowo agbalêŋɔŋlɔ kple dɔdɔwɔwɔ ŋuti nyametsotsoa le wo dɔkui si tso nunala la gbɔ.

KPEKPEDEŊUXOFEWO

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Ne èdi Nyatakaka Bubuwo

Prof. Michael Osae

(Associate Professor of Nuclear Agriculture)

Director

Biotechnology and Nuclear Agriculture Research
Institute (BNARI)

Ghana Atomic Energy Commission (GAEC), Ghana.

P.O. Box LG 80, Legon, Accra.

Call/WhatsApp: [+233 24 4856008](tel:+233244856008)

Email: michael.osae@gaec.gov.gh

mosae5@yahoo.com

Dr Enoch Selorm Kofi Ofori

Senior Research Scientist (Entomology)

Center Manager

Biotechnology and Nuclear Agriculture Research
Institute (BNARI)

Ghana Atomic Energy Commission (GAEC), Ghana.

P.O. Box LG 80, Legon, Accra.

Call only: [+233244485713](tel:+233244485713)

Call/WhatsApp: [+233206059302](tel:+233206059302)

Email: enoch.ofori@gaec.gov.gh

selormofori@yahoo.com

