ꯏꯍꯥꯟ ꯍꯥꯟꯕꯗ ꯊꯝꯖꯅꯤꯡꯂꯤꯕ ꯋꯥꯐꯝꯗꯤ ꯑꯩꯈꯣꯏꯅ ꯑꯉꯥꯡ
ꯑꯣꯏꯔꯤꯉꯩꯗꯒꯤ ꯑꯩꯈꯣꯏꯗ ꯇꯝꯕꯤꯔꯛꯂꯕ ꯏꯪꯂꯤꯁꯀꯤ ꯋꯥꯍꯩ

wjli “matter can neither be created

nor destroyed” ꯍꯥꯏꯕꯗꯤ ꯄꯣꯠꯂꯝ ꯑꯃꯠꯇ ꯅꯧꯅ
ꯁꯦꯝꯕꯁꯨ ꯂꯩꯇꯦ ꯃꯥꯡꯍꯟꯈꯤꯕꯁꯨ ꯂꯩꯇꯦ, ꯄꯨꯝꯅꯃꯛ ꯑꯃꯗꯒꯤ
ꯑꯃꯗ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯕ ꯉꯥꯛꯇꯅꯤ ꯍꯥꯏꯕ ꯋꯥꯐꯝꯁꯤꯅꯤ꯫

ꯀꯌꯥꯗ ꯃꯔꯧ ꯂꯩꯅ ꯈꯪꯗꯕ ꯂꯨꯈ꯭ꯔꯕ ꯋꯥꯐꯝꯅꯣ= ꯍꯥꯏꯔꯤꯕ ꯋꯥꯐꯝ
ꯑꯁꯤꯃꯛ ꯑꯇꯣꯞꯄ ꯃꯑꯣꯡꯗ ꯑꯃꯨꯛ ꯊꯝꯖꯕ ꯇꯥꯔꯒꯗꯤ
ꯑꯁꯨꯝꯅ ꯊꯝꯕ ꯌꯥꯏ꯫ ꯑꯍꯤꯡꯕ ꯖꯤꯕꯁꯤꯡꯕꯨ ꯁꯥꯕꯗ ꯆꯪꯂꯤꯕ
ꯃꯆꯜ (ꯏꯂꯤꯃꯦꯟꯠ) 30-40 ꯑꯁꯤ ꯍꯟꯖꯤꯟ-ꯍꯟꯖꯤꯟ
ꯁꯤꯖꯤꯟꯅꯗꯨꯅ ꯂꯩꯔꯕ ꯉꯥꯛꯇꯅꯤ ꯍꯥꯏꯕꯁꯤꯅꯤ꯫ ꯍꯥꯏꯔꯤꯕ ꯃꯆꯜ
ꯈꯨꯗꯤꯡꯃꯛ ꯑꯁꯤ ꯊꯋꯥꯏ ꯄꯥꯟꯕꯗ/ ꯑꯁꯤꯕ ꯑꯃꯁꯨꯡ ꯑꯍꯤꯡꯕ
ꯑꯅꯤꯒꯤ ꯃꯔꯛꯇ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯗꯨꯅ ꯑꯗꯨꯃꯛ
ꯃꯍꯧꯁꯥꯅ ꯂꯦꯞꯇꯅ ꯆꯠꯊꯗꯨꯅ ꯂꯩꯔꯤꯕꯅꯤ꯫ ꯍꯥꯏꯕ ꯋꯥꯐꯝ ꯑꯁꯤꯅꯤ
ꯑꯩꯈꯣꯏ ꯈꯨꯗꯤꯡꯃꯛꯅ SIWA ꯊꯣꯛꯄꯗꯤ꯫ ꯑꯃꯔꯣꯝꯗ ꯑꯃꯨꯛ
ꯊꯝꯅꯤꯡꯂꯤꯕꯗꯤ ꯃꯍꯧꯁꯥꯅ ꯑꯍꯤꯡꯕ ꯊꯋꯥꯏ ꯄꯥꯟꯕ ꯖꯤꯕꯁꯤꯡꯒ
ꯊꯋꯥꯏ ꯄꯥꯟꯗꯕ ꯄꯣꯠꯂꯝꯁꯤꯡ ꯑꯁꯤꯒ ꯀꯥꯏꯗꯕ SM ꯑꯃꯗ
ꯑꯗꯨꯃꯛ ꯃꯔꯤ ꯂꯩꯅꯗꯨꯅ ꯂꯩ ꯍꯥꯏꯕꯁꯤꯅꯤ꯫ ꯊꯋꯥꯏ ꯄꯥꯟꯗꯕ
ꯄꯣꯠꯁꯤꯡ ꯑꯁꯤꯅ, ꯃꯈꯣꯏꯅ ꯑꯍꯤꯡꯕ ꯖꯤꯕ ꯀꯌꯥ ꯌꯥꯝꯅ \

ꯣꯛꯂꯤꯕꯒꯦ ꯍꯥꯏꯕ ꯑꯁꯤ ꯑꯩꯈꯣꯏ ꯄꯨꯝꯅꯃꯛꯅ SIWA ꯊꯣꯛꯄꯅꯤ,
ꯃꯁꯤ ꯅꯠꯇꯕ ꯃꯔꯨꯑꯣꯏꯕ ꯊꯝꯖꯅꯤꯡꯕꯗꯤ ꯑꯍꯤꯡꯕ ꯖꯤꯕꯁꯤꯡ
ꯑꯁꯤꯅ ꯃꯈꯣꯏꯅ ꯂꯩꯔꯤꯕ ꯊꯋꯥꯏ ꯄꯥꯟꯗꯕ ꯄꯣꯠꯂꯝꯁꯤꯡ ꯑꯁꯤꯕꯨ
ꯇꯣꯏꯅ ꯃꯑꯣꯡ ꯀꯌꯥꯗ ꯑꯣꯟꯊꯣꯛꯄꯤꯔꯤ꯫ ꯃꯁꯤ ꯃꯍꯧꯁꯥꯅ
ꯑꯃꯁꯨꯡ ꯃꯤꯑꯣꯏꯕ ꯑꯩꯈꯣꯏꯅ ꯃꯍꯧꯁꯥꯗꯒꯤ ꯂꯩꯖꯔꯝꯂꯤꯕ
ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟꯗ ꯀꯥꯡꯂꯣꯟ ꯀꯌꯥ ꯑꯃ ꯊꯨꯒꯥꯏꯗꯨꯅ ꯆꯠꯊꯔꯤꯕ
ꯊꯧꯑꯣꯡ ꯑꯃꯅꯤ꯫ ꯀꯥꯡꯂꯣꯟ ꯊꯨꯒꯥꯏꯕꯒꯤ ꯋꯥꯐꯝꯗꯒꯤ ꯊꯩꯗꯣꯛꯂꯒ
ꯉꯁꯤꯒꯤ ꯑꯣꯏꯅꯗꯤ ꯃꯍꯧꯁꯥꯅ ꯆꯠꯊꯔꯤꯕ ꯃꯔꯨꯑꯣꯏꯕ ꯃꯑꯣꯡ
ꯈꯔꯈꯛ ꯊꯝꯖꯒꯦ꯫ ꯑꯁꯨꯝꯅ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯗꯨꯅ
ꯂꯩꯔꯤꯕ ꯃꯔꯨꯑꯣꯏꯕ ꯄꯣꯠꯂꯝꯗꯤ ꯀꯌꯥ ꯑꯃꯅꯤ ꯑꯗꯨꯕꯨ ꯃꯈꯣꯏꯒꯤ
ꯃꯔꯛꯇꯒꯤ ꯃꯔꯨꯑꯣꯏꯕ ꯃꯆꯜ ꯑꯃꯒꯤ ꯃꯔꯝꯗ ꯑꯩꯈꯣꯏ ꯃꯨꯟꯅ
ꯈꯪꯃꯤꯟꯅꯁꯤ꯫ ꯃꯆꯜ ꯑꯗꯨꯗꯤ ꯑꯇꯩ ꯀꯔꯤꯁꯨ ꯅꯠꯇꯦ, ꯃꯌꯥꯝꯅ \

ꯥꯝꯅꯃꯛ ꯈꯪꯅꯔꯕ ꯌꯨꯔꯤꯌꯥ ꯍꯥꯔꯗ ꯌꯥꯎꯔꯤꯕ ꯃꯔꯨꯑꯣꯏꯕ ꯄꯥꯝꯕꯤꯒꯤ
ꯃꯆꯤꯟꯖꯥꯛ ‘ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ’ ꯅꯤ꯫

ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯁꯥꯏꯀꯜ:

ꯑꯍꯤꯡꯕ ꯖꯤꯕꯁꯤꯡ ꯁꯥꯕꯗ ꯃꯍꯧꯁꯥꯅ ꯌꯥꯎꯕ ꯃꯆꯜꯁꯤꯡꯒꯤ
ꯃꯅꯨꯡꯗꯒꯤ ꯂꯩꯕꯥꯛ ꯂꯩꯍꯥꯎꯗ ꯈ꯭ꯋꯥꯏꯗꯒꯤ ꯌꯥꯝꯗꯅ ꯌꯥꯎꯕ/ ꯐꯪꯕ ꯃꯆꯜ
ꯑꯃ ꯍꯥꯏꯕ ꯇꯥꯔꯒꯗꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯑꯁꯤꯅꯤ ꯍꯥꯏꯕ ꯇꯥꯏ꯫

ꯑꯃꯔꯣꯝꯗꯅ ꯑꯃꯨꯛ ꯍꯥꯏꯔꯤꯕ ꯃꯆꯜ ꯑꯁꯤ ꯅꯨꯡꯁꯤꯠꯇꯗꯤ
(ꯑꯦꯠꯃꯣꯁꯐꯤꯌꯥꯔ) ꯄꯨꯝꯅꯃꯛꯀꯤ ꯑꯄꯨꯟꯕ ꯆꯥꯡꯒꯤ ꯃꯉꯥ
ꯊꯣꯛꯄꯒꯤ ꯃꯔꯤꯗꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯅꯤ ꯍꯥꯏꯕꯁꯤ ꯌꯥꯝꯅ ꯆꯨꯝꯂꯕ
ꯋꯥꯐꯝꯅꯤ, ꯑꯗꯨꯕꯨ ꯌꯥꯎꯔꯤꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ (ꯞ2

) ꯑꯁꯤꯗꯤ ꯑꯌ
ꯥꯝꯕ ꯑꯁꯪꯕ ꯄꯥꯝꯕꯤꯅ ꯁꯤꯖꯤꯟꯅꯕ ꯉꯝꯕ ꯃꯑꯣꯡ ꯑꯣꯏꯗꯦ꯫

ꯄꯥꯝꯕꯤꯅ ꯁꯤꯖꯤꯟꯅꯕ ꯉꯝꯕ ꯃꯑꯣꯡꯗ ꯑꯣꯟꯊꯣꯛꯅꯕꯒꯤꯗꯃꯛ
ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯑꯁꯤ ꯃꯑꯣꯡ ꯀꯌꯥꯒꯤ ꯑꯍꯣꯡꯕ ꯄꯨꯔꯛꯄ ꯇꯥꯏ꯫

ꯑꯍꯣꯡꯕ ꯑꯁꯤ ꯄꯨꯔꯛꯅꯕꯒꯤꯗꯃꯛ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯐꯤꯛꯁꯦꯁꯟ
ꯀꯧꯕ ꯊꯧꯑꯣꯡ ꯑꯃꯗꯤ ꯇꯉꯥꯏꯐꯗꯦ꯫

ꯑꯄꯨꯟꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯐꯤꯛꯁꯦꯁꯟꯒꯤ ꯆꯥꯗ ꯇꯔꯥꯗꯤ
ꯅꯨꯡꯁꯤꯠꯇ ꯏꯂꯦꯛꯇ꯭ꯔꯤꯛꯀꯤ ꯊꯧꯑꯣꯡ (ꯅꯣꯡ ꯈꯥꯛꯄ/ꯂꯥꯏꯠꯅꯤꯡ)
ꯑꯃꯁꯨꯡ ꯅꯨꯃꯤꯠꯀꯤ ꯃꯉꯥꯜꯒ ꯃꯔꯤ ꯂꯩꯅꯕ ꯊꯧꯑꯣꯡꯁꯤꯡꯅ
ꯑꯣꯛꯁꯤꯖꯦꯟꯒ ꯄꯨꯟꯁꯤꯟꯗꯨꯅ NO3 (Nitrate) ꯗ ꯑꯣꯟꯊꯣꯛꯄ ꯑꯁꯤꯅꯤ꯫ ꯂꯦꯝꯍꯧꯔꯤꯕ ꯆꯥꯗ 90 ꯅ ꯍꯤꯡꯀꯨꯞꯁꯤꯡꯅ
ꯅꯨꯡꯁꯤꯠꯇꯒꯤ ꯐꯥꯖꯤꯟꯗꯨꯅ NO3 ꯗ ꯑꯣꯟꯊꯣꯛꯄꯒꯤ ꯊꯕꯛ ꯑꯁꯤꯅꯤ꯫ ꯃꯌꯥꯝꯅ ꯍꯦꯟꯅ ꯈꯪꯅꯔꯕ ꯃꯁꯤꯒꯤ ꯊꯧꯑꯣꯡꯗꯤ ꯑꯌ
ꯥꯝꯕ ꯍꯋꯥꯏ ꯄꯥꯝꯕꯤꯁꯤꯡꯒ ꯄꯨꯟꯅ ꯍꯤꯡꯃꯤꯟꯅꯕ ꯕꯦꯛꯇꯔꯤꯌꯥ
ꯃꯈꯜ ꯈꯔꯅ ꯄꯥꯝꯕꯤꯁꯤꯡ ꯑꯁꯤꯒꯤ ꯃꯔꯥꯗ ꯂꯩꯁꯤꯟꯗꯨꯅ ꯃꯇꯨꯝ
ꯇꯥꯕ ꯄꯣꯠꯂꯝ (nodule) ꯑꯃꯒꯤ ꯃꯅꯨꯡꯗ ꯅꯨꯡꯁꯤꯠꯇꯒꯤ
ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯐꯥꯖꯤꯟꯗꯨꯅ ꯄꯥꯝꯕꯤꯁꯤꯡ ꯑꯁꯤꯗ ꯐꯪꯍꯟꯕ ꯑꯁꯤꯅꯤ꯫

ꯃꯔꯝ ꯑꯁꯤꯅ ꯅꯨꯡꯁꯤꯠꯇꯒꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯕꯨ ꯂꯩꯕꯥꯛ ꯂꯩꯍꯥꯎꯗ
ꯇꯤꯟꯁꯤꯟꯅꯕꯒꯤ ꯈ꯭ꯋꯥꯏꯗꯒꯤ ꯃꯔꯨ ꯑꯣꯏꯕ ꯄꯥꯝꯕꯤꯗꯤ ꯊꯧꯑꯣꯡ
ꯑꯁꯤꯃꯛꯅꯤ ꯍꯥꯏꯕ ꯇꯥꯏ꯫ ꯊꯧꯑꯣꯡ ꯑꯁꯤꯗ ꯍꯋꯥꯏ ꯄꯝꯕꯤ ꯑꯗꯨꯅ
ꯃꯁꯥ ꯐꯅ ꯍꯤꯡꯕꯗ ꯆꯣꯪꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯁꯔꯨꯛꯇꯒꯤ ꯁꯔꯨꯛ
ꯈꯔ ꯍꯦꯟꯅ ꯍꯤꯡꯀꯨꯞꯁꯤꯡ ꯑꯗꯨꯅ ꯅꯨꯡꯁꯤꯠꯇꯒꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ
ꯐꯥꯖꯤꯟꯕ ꯉꯝꯃꯤ꯫ ꯑꯁꯤꯗꯁꯨ ꯅꯠꯇꯅ ꯏꯁꯤꯡ ꯃꯊꯛꯇ ꯇꯥꯎꯗꯨꯅ
ꯍꯧꯕ ꯝꯚꯍꯦꯦꯃ ꯀꯧꯕ ꯀꯪ ꯃꯈꯜ ꯑꯃꯒ ꯂꯣꯏꯅꯕ becteria

Anabena ꯍꯥꯏꯔꯤꯕ ꯑꯁꯤꯅꯁꯨ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯅ ꯐꯥꯖꯤꯟꯕꯒꯤ
ꯊꯧꯑꯣꯡ ꯑꯁꯤ ꯄꯥꯡꯊꯣꯛꯏ꯫

ꯑꯇꯣꯞꯄ ꯇꯣꯉꯥꯟꯅ ꯍꯤꯡꯖꯕ ꯍꯤꯡꯀꯨꯞ ꯀꯌꯥ ꯑꯃꯅꯁꯨ
ꯅꯨꯡꯁꯤꯠꯇꯒꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯐꯥꯖꯤꯟꯕ ꯉꯝꯃꯤ꯫ ꯈꯨꯗꯝ

[OTe- Blue Green Algae, Azospirillum

ꯑꯁꯤꯅꯆꯤꯡꯕ ꯄꯟꯕ ꯌꯥꯏ꯫ ꯑꯁꯨꯝꯅ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯕꯨ ꯐꯥꯖꯤꯜꯂꯕ
ꯃꯇꯨꯡꯗ ꯄꯥꯝꯕꯤꯅ ꯁꯤꯖꯤꯟꯅꯕ ꯉꯝꯕ ꯃꯑꯣꯡꯗ ꯑꯣꯟꯊꯣꯛꯄꯒ
ꯂꯣꯏꯅꯅ ꯄꯥꯝꯕꯤꯅ ꯆꯨꯞꯈꯠꯇꯨꯅ ꯄ꯭ꯔꯣꯇꯤꯟ ꯑꯃꯗꯤ ꯑꯇꯩ
ꯄ꯭ꯔꯣꯇꯤꯟ ꯁꯨꯡꯕꯗ ꯁꯤꯖꯤꯟꯅꯕ amino ꯃꯖꯡꯛ ꯑꯃꯗꯤ
ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯌꯥꯎꯕ ꯑꯇꯩ ꯄꯣꯠꯂꯝꯁꯤꯡꯗ ꯑꯣꯟꯊꯣꯛꯏ꯫

ꯃꯇꯨꯡꯗ ꯑꯁꯤꯒꯨꯝꯕ ꯁꯨꯡꯗꯣꯛꯂꯕ ꯄꯣꯠꯂꯝꯁꯤꯡ ꯑꯁꯤ
ꯃꯤꯑꯣꯏꯕ ꯌꯥꯎꯅ ꯄꯥꯝꯕꯤꯕꯨ ꯆꯥꯗꯨꯅ ꯍꯤꯡꯂꯤꯕ ꯑꯇꯩ ꯖꯤꯕꯁꯤꯡ
ꯑꯃꯁꯨꯡ ꯃꯈꯣꯏꯕꯨ ꯆꯥꯗꯨꯅ ꯍꯤꯡꯂꯤꯕ ꯖꯤꯕꯁꯤꯡꯗ ꯃꯊꯪ ꯃꯊꯪ
ꯄꯣꯠꯂꯝꯁꯤꯡ ꯑꯁꯤꯒꯤ ꯀꯥꯟꯅꯕ ꯐꯪꯃꯤꯟꯅꯔꯤ꯫ ꯃꯁꯤꯕꯨ ꯐꯨꯠ
ꯋꯦꯖ ꯍꯥꯏꯅ ꯈꯪꯅꯔꯤ꯫ ꯑꯔꯣꯏꯕꯗ ꯍꯤꯡꯂꯤꯕ ꯖꯤꯕꯁꯤꯡꯒꯤ
ꯃꯄꯨꯟꯁꯤ ꯂꯣꯏꯔꯕ ꯃꯇꯨꯡꯗ ꯃꯈꯣꯏꯕꯨ ꯄꯠꯊ-ꯄꯨꯝꯊꯍꯟꯕ
ꯉꯝꯕ ꯍꯤꯡꯀꯨꯞꯁꯤꯡꯅ ꯑꯃꯨꯛ ꯊꯨꯒꯥꯏꯗꯨꯅ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯌꯥꯎꯕ
ꯑꯦꯃꯣꯅꯤꯌꯥꯗ ꯑꯃꯨꯛ ꯑꯣꯟꯊꯣꯛꯂꯤꯕꯅꯤ꯫ ꯑꯁꯨꯝꯅ ꯐꯪꯂꯛꯄ
ꯑꯦꯃꯣꯅꯤꯌꯥꯕꯨ ꯁꯤꯖꯤꯟꯅꯕ ꯉꯝꯕ ꯄꯥꯝꯕꯤ ꯈꯔꯅ ꯑꯩꯃꯣꯅꯤꯌꯥ
ꯑꯣꯏꯅ, ꯑꯗꯨꯒ ꯑꯇꯣꯞꯄ ꯑꯌꯥꯝꯕ ꯄꯥꯝꯕꯤꯁꯤꯡꯅ ꯅꯥꯏꯇ꯭ꯔꯦꯠꯀꯤ
ꯃꯑꯣꯡꯗ ꯑꯣꯟꯊꯣꯛꯂꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯕꯨ ꯁꯤꯖꯤꯟꯅꯩ꯫ ꯃꯁꯤꯒꯤ
ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯕꯒꯤ ꯊꯧꯑꯣꯡ ꯀꯌꯥ ꯑꯃꯁꯨꯡ ꯂꯩꯔꯤꯕꯅꯤ꯫

ꯍꯥꯏꯕꯗꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯍꯥꯏꯔꯤꯕ ꯅ꯭ꯌꯨꯇ꯭ꯔꯦꯟꯠ ꯑꯁꯤꯗꯤ ꯃꯑꯣꯡ
ꯀꯌꯥꯗ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯏ ꯍꯥꯏꯕꯅꯤ꯫ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ
ꯃꯑꯣꯡ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯑꯁꯤꯕꯨ ꯄꯥꯡꯊꯣꯛꯄ ꯉꯝꯕ
ꯍꯤꯡꯀꯨꯞ ꯀꯌꯥ ꯑꯃꯁꯨꯡ ꯂꯩꯕꯥꯛ ꯂꯩꯍꯥꯎꯗ ꯍꯤꯡꯗꯨꯅ ꯃꯈꯣꯏꯒꯤ
ꯊꯧꯗꯥꯡ ꯄꯥꯡꯊꯣꯛꯇꯨꯅ ꯂꯥꯛꯂꯤꯕꯅꯤ꯫ ꯍꯤꯡꯀꯨꯞꯁꯤꯡ ꯑꯁꯤꯒꯤ ꯃꯔꯨ
ꯑꯣꯏꯕ ꯒ꯭ꯔꯨꯞ ꯑꯅꯤ ꯂꯩ- ꯒ꯭ꯔꯨꯞ ꯑꯃꯅ Nitrite Bacteria

ꯍꯥꯏꯅ ꯈꯪꯅꯩ꯫ ꯃꯈꯣꯏꯅ ꯑꯦꯃꯣꯅꯤꯌꯥꯕꯨ Nitrite ꯇ ꯑꯣꯟꯊꯣꯛꯏ
ꯑꯗꯨꯒ ꯑꯇꯣꯞꯄ ꯒ꯭ꯔꯨꯞ ꯑꯃꯅ Nitrate Bacteria

ꯍꯥꯏꯅ ꯈꯪꯅꯩ꯫ ꯃꯈꯣꯏꯅ Nitrite ꯄꯨ Nitrate ꯇ ꯑꯣꯟꯊꯣꯛꯏ꯫

ꯑꯁꯨꯝꯅ ꯑꯃꯣꯅꯤꯌꯥꯗꯒꯤ Nitrite ꯑꯃꯁꯨꯡ Nitrate ꯇ
ꯑꯣꯟꯊꯣꯛꯄꯒꯤ ꯊꯧꯑꯣꯡ ꯑꯁꯤꯕꯨ Nitrifi cation ꯍꯥꯏꯅ
ꯈꯪꯅꯔꯤꯕꯁꯤꯅꯤ꯫ ꯑꯁꯤꯒꯨꯝꯕ ꯑꯣꯟꯊꯣꯛꯄꯒꯤ ꯃꯇꯝꯁꯤꯗ
ꯕꯦꯛꯇꯔꯤꯌꯥ ꯒ꯭ꯔꯨꯞ ꯑꯅꯤꯃꯛꯅ ꯃꯈꯣꯏꯒꯤ ꯏꯅꯔꯖꯤ WIT!

ꯑꯁꯨꯝꯅ ꯑꯣꯟꯊꯣꯛꯂꯕ ꯅꯥꯏꯇ꯭ꯔꯦꯠ ꯑꯁꯤ
ꯄꯥꯝꯕꯤꯁꯤꯡꯅ ꯅꯠꯇ꯭ꯔꯒ ꯑꯇꯣꯞꯄ ꯖꯤꯕꯁꯤꯡꯅ ꯈꯨꯠꯂꯩ
ꯊꯨꯅ ꯁꯤꯖꯤꯟꯅꯊꯣꯛꯍꯧꯗ꯭ꯔꯕꯗꯤ ꯅꯣꯡꯒꯤ ꯏꯁꯤꯡꯅ ꯃꯈꯣꯏꯕꯨ
ꯆꯦꯟꯊꯈꯤꯗꯨꯅ ꯁꯨꯛꯁꯣꯏ ꯁꯣꯏꯗꯅ ꯏꯇꯨꯡꯐꯝꯁꯤꯡ ꯑꯃꯁꯨꯡ
ꯁꯃꯨꯗ꯭ꯔꯒꯤ ꯏꯁꯤꯡꯗ ꯇꯤꯟꯈꯤ꯫ ꯆꯦꯟꯊꯔꯛꯄ ꯏꯁꯤꯡꯗ \

ꯥꯎꯔꯛꯄ ꯃꯆꯜꯁꯤꯡ ꯃꯔꯥꯡ ꯀꯥꯏꯅ ꯐꯪꯕ ꯃꯔꯝ ꯑꯁꯤꯅꯅꯤ
ꯁꯃꯨꯗ꯭ꯔ ꯈꯣꯡꯕꯥꯟꯁꯤꯡꯗ ꯂꯩꯕ ꯂꯝꯗꯝꯁꯤꯡꯅ ꯂꯩꯍꯥꯎ ꯆꯦꯟꯗꯨꯅ
ꯄꯥꯝꯕꯤꯅ ꯃꯁꯥ ꯐꯅ ꯍꯧꯕ ꯉꯝꯂꯤꯕꯁꯤ ꯅꯠꯇ꯭ꯔꯒꯅ ꯃꯍꯩ-

ꯃꯔꯣꯡ ꯊꯥꯔꯒꯅ ꯄꯣꯠꯊꯣꯛ ꯌꯥꯝꯅ ꯄꯨꯊꯣꯛꯂꯤꯕꯁꯤ꯫ ꯁꯃꯨꯗ꯭ꯔ
ꯌꯧꯈ꯭ꯔꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯈꯔ ꯑꯃꯅ ꯑꯃꯨꯛ ꯁꯃꯨꯗ꯭ꯔꯗ ꯆꯥꯛꯇꯕ
ꯎꯆꯦꯛꯁꯤꯡꯒꯤ ꯃꯊꯤ ꯃꯌꯨꯡꯗ ꯌꯥꯎꯔꯛꯇꯨꯅ ꯑꯃꯗꯤ ꯁꯃꯨꯗ꯭ꯔꯒꯤ
ꯉꯥꯁꯤꯡꯗ ꯌꯥꯎꯔꯛꯇꯨꯅ ꯀꯪꯐꯥꯜꯗ ꯑꯃꯨꯛ ꯌꯧꯔꯛꯂꯤꯕꯅꯤ꯫ ꯑꯌ
ꯥꯝꯕ ꯁꯃꯨꯗ꯭ꯔꯒꯤ ꯏꯔꯣꯜꯅꯨꯡꯗ ꯂꯩꯃꯥꯏ ꯌꯧꯔꯛꯈ꯭ꯔꯕꯁꯤꯡ ꯑꯗꯨꯗꯤ
ꯃꯇꯝ ꯀꯨꯏꯅ ꯆꯍꯤ ꯃꯤꯜꯂꯤꯌꯥꯟ ꯀꯌꯥ ꯇꯨꯝꯗꯨꯅ ꯂꯩꯈ꯭ꯔꯕꯒꯨꯝꯕꯅꯤ꯫

ꯑꯁꯨꯝꯅ ꯃꯥꯡꯈ꯭ꯔꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯁꯔꯨꯛꯁꯤꯡ ꯃꯥꯂꯦꯝꯒꯤ
ꯂꯩꯃꯥꯏꯗ ꯃꯦꯟꯈꯠꯄꯗ ꯑꯆꯧꯕ ꯊꯧꯗꯥꯡ ꯂꯧꯔꯤꯕꯅ ꯃꯩꯒꯤ ꯆꯤꯡꯁꯤꯡ
ꯄꯣꯛꯈꯥꯏꯕꯗ ꯄꯨꯈꯠꯂꯛꯄ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯅꯤ꯫

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ꯊꯧꯑꯣꯡ ꯄꯥꯡꯊꯣꯛꯄ ꯉꯝꯕ ꯂꯩꯕꯥꯛ ꯂꯩꯍꯥꯎꯗ ꯍꯤꯡꯗꯨꯅ ꯂꯩꯕ

Dentrifying ꯕꯦꯛꯇꯔꯤꯌꯥꯁꯤꯡꯅ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯕꯨ
ꯅꯨꯡꯁꯤꯠꯇ ꯑꯃꯨꯛ ꯇꯤꯜꯍꯟꯈꯤ꯫ ꯑꯁꯨꯝꯅ ꯀꯥꯟꯅꯔꯕ ꯄꯥꯝꯕꯤ
ꯑꯃꯗꯤ ꯑꯇꯩ ꯖꯤꯕꯁꯤꯡꯒꯤ ꯆꯪꯗꯕ ꯌꯥꯗ꯭ꯔꯕ ꯃꯆꯜ ꯑꯁꯤꯒꯤ
ꯏꯆꯦꯜ ꯑꯁꯤ ꯍꯟꯅ ꯍꯟꯅ ꯁꯥꯏꯀꯜ ꯑꯃꯒꯤ ꯃꯑꯣꯡꯗ
ꯆꯠꯊꯗꯨꯅ ꯂꯩꯔꯤꯕꯅꯤ꯫ ꯃꯁꯤꯒꯤ ꯁꯥꯏꯀꯜ ꯑꯁꯤꯒꯤ ꯀꯥꯟꯅꯕ
ꯑꯁꯤ ꯃꯐꯝ ꯑꯃꯗꯤ ꯐꯤꯚꯝꯒꯤ ꯃꯇꯨꯡ ꯏꯟꯅ ꯃꯥꯟꯅꯗꯕ ꯀꯌꯥ
ꯑꯃꯗꯤ ꯃꯤꯑꯣꯏꯕ ꯑꯩꯈꯣꯏꯅ ꯑꯣꯏꯍꯜꯂꯤ꯫ ꯀꯥꯟꯅꯔꯕ ꯊꯧꯑꯣꯡ
ꯑꯁꯤ ꯀꯥꯡꯂꯣꯟ ꯆꯨꯝꯅ ꯁꯤꯖꯤꯟꯅꯕꯒꯤ ꯐꯤꯚꯝꯁꯤꯡꯕꯨ ꯃꯃꯨꯠ ꯇꯥꯅ
ꯈꯪꯕꯒꯤ ꯃꯊꯧꯗꯤ ꯇꯥꯔꯤ꯫ ꯃꯗꯨꯗꯤ ꯁꯥꯏꯀꯜ ꯑꯁꯤꯗ ꯑꯆꯧꯕ ꯊꯧꯗꯥꯡ
ꯂꯧꯔꯤꯕ ꯍꯤꯡꯀꯨꯞꯁꯤꯡ ꯑꯁꯤ ꯀꯔꯝꯅ ꯀꯔꯝꯕ ꯐꯤꯚꯝꯗ ꯃꯊꯧ
ꯅꯤꯡꯊꯤꯅ ꯄꯥꯡꯊꯣꯛꯀꯗꯒꯦ ꯍꯥꯏꯕꯗꯨ ꯅꯤꯡꯊꯤꯅ ꯈꯪꯃꯤꯟꯅꯕ ꯆꯪꯏ
ꯍꯥꯏꯖꯕꯅꯤ꯫ ꯃꯁꯤꯕꯨ ꯃꯨꯟ ꯈꯪꯗꯨꯅ ꯍꯤꯡꯀꯨꯞꯁꯤꯡꯕꯨ ꯃꯊꯧ ꯅꯤꯡꯊꯤꯅ
ꯄꯥꯡꯊꯣꯛꯍꯟꯗꯨꯅ ꯑꯩꯒꯤ ꯑꯩꯒꯤ ꯂꯧ TISOM ꯀꯣꯏꯔꯤꯕ ꯂꯧꯐꯝꯁꯤꯡꯗ
ꯀꯥꯟꯅꯕ ꯂꯧꯕ ꯍꯩꯕꯒ ꯂꯣꯏꯅꯅ ꯃꯈꯣꯏꯒꯤ ꯂꯩꯐꯝꯁꯤꯡ ꯅꯤꯡꯊꯤꯅ
ꯁꯦꯝꯕꯤꯕ ꯉꯝꯂꯕꯗꯤ ꯄꯨꯝꯅꯃꯛꯀꯤ ꯌꯥꯏꯐꯕ ꯑꯣꯏꯒꯅꯤ꯫

ꯍꯥꯏꯖꯅꯤꯡꯂꯤꯕꯗꯤ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯌꯥꯎꯕ ꯑꯣꯔꯒꯥꯅꯤꯛ ꯑꯣꯏꯕ
ꯁꯣꯔꯁꯁꯤꯡ ꯑꯁꯤꯕꯨ, ꯃꯈꯣꯏꯗ ꯌꯥꯎꯔꯤꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯑꯗꯨ
ꯃꯊꯛꯇ ꯊꯝꯖꯈꯤꯕ ꯀꯥꯟꯅꯕ ꯃꯑꯣꯡꯗ ꯑꯣꯟꯊꯣꯛꯄꯒ ꯂꯣꯏꯅꯅ
ꯊꯥꯔꯤꯕ ꯄꯥꯝꯕꯤꯗ ꯐꯪꯍꯟꯗꯨꯅ ꯅꯨꯡꯁꯤꯠꯇ ꯃꯄꯥꯟ ꯅꯥꯏꯗꯅ ꯌꯥꯎꯔꯤꯕ
ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯀꯥꯟꯅꯕ ꯂꯧꯕ ꯍꯥꯏꯕꯁꯤꯅꯤ꯫ ꯁꯝꯅ ꯍꯥꯏꯔꯕꯗ
ꯊꯝꯖꯈ꯭ꯔꯤꯕ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯑꯣꯟꯊꯥꯡ ꯑꯣꯟꯁꯤꯟ ꯇꯧꯍꯟꯕ
ꯑꯁꯤꯃꯛ ꯃꯈꯜ ꯀꯌꯥꯒꯤ ꯀꯝꯄꯣꯁꯠ ꯁꯦꯝꯕ, ꯁꯟꯊꯤ KE\

ꯨꯡꯒꯤ ꯍꯥꯔ (ꯑꯦꯐ ꯋꯥꯏ ꯑꯦꯝ) ꯁꯦꯝꯕꯗ ꯁꯤꯖꯤꯟꯅꯔꯤꯕꯅꯤ꯫

ꯄꯣꯠꯂꯝꯁꯤꯡ ꯑꯁꯤꯕꯨ ꯁꯤꯖꯤꯟꯅꯕꯒꯤ ꯇꯥꯟꯖꯥ ꯈꯪꯕ ꯑꯁꯤꯁꯨ \

ꯥꯝꯅꯃꯛ ꯃꯔꯨꯑꯣꯏ꯫ ꯍꯤꯡꯀꯨꯞꯁꯤꯡ ꯑꯁꯤꯅ ꯃꯥꯅ ꯃꯥꯅ ꯄꯠꯊ-

ꯄꯨꯝꯊꯗꯨꯅ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯕꯨ ꯄꯥꯝꯕꯤꯅ ꯁꯤꯖꯤꯟꯅꯕ ꯌꯥꯕ ꯃꯈꯜ
ꯑꯃꯗꯤ ꯇꯥꯟꯖꯥ ꯑꯁꯤꯅꯆꯤꯡꯕ ꯃꯨꯟꯅ ꯈꯪꯂꯕ ꯃꯇꯝꯗꯇ ꯉꯁꯤ
ꯊꯝꯖꯔꯤꯕ ꯋꯥꯐꯝꯁꯤꯡ ꯑꯁꯤꯒꯤ ꯑꯁꯦꯡꯕ ꯀꯥꯟꯅꯕ ꯑꯗꯨ
ꯑꯣꯏꯒꯗꯧꯔꯤꯕꯅꯤ꯫

ꯊꯧꯑꯣꯡꯁꯤꯡ ꯑꯁꯤ ꯈꯪꯂꯕꯗꯤ ꯑꯩꯈꯣꯏꯅ ꯏꯁꯥꯒꯤ ꯂꯩꯕꯥꯛ
ꯂꯩꯍꯥꯎꯗ ꯅꯥꯏꯇ꯭ꯔꯖꯦꯟ ꯀꯔꯝꯅ ꯍꯟꯖꯤꯟꯗꯨꯅ ꯃꯁꯤꯒꯤ ꯀꯥꯟꯅꯕ
ꯑꯗꯨ ꯃꯇꯧ ꯀꯔꯝꯅ ꯃꯇꯝ ꯈꯔ ꯁꯤꯖꯤꯟꯅꯍꯧꯒꯅꯤ ꯍꯥꯏꯕ ꯈꯪꯕ
ꯉꯝꯂꯅꯤ ꯈꯟꯖꯗꯨꯅ ꯉꯁꯤꯒꯤ ꯈꯔꯗꯤ ꯆꯃꯝꯅꯕ ꯇꯣꯄꯤꯛ ꯑꯁꯤ
ꯊꯝꯖꯕꯅꯤ꯫ ꯃꯊꯪꯗ ꯉꯁꯤꯒꯤ ꯈꯨꯟꯅꯥꯏꯗ ꯐꯨꯝꯗꯨꯅ ꯊꯝꯂꯤꯕ ꯋꯥꯐꯝ
ꯈꯔ ꯑꯔꯥꯏꯕ ꯃꯑꯣꯡꯗ ꯑꯃꯨꯛ ꯊꯝꯖꯅꯕꯒꯤ ꯇꯥꯟꯖ ꯑꯗꯨ ꯂꯧꯖꯒꯦ꯫

ꯍꯥꯏꯕꯗꯤ ꯑꯣꯔꯒꯥꯅꯤꯛ ꯃꯦꯠꯇꯔꯁꯤꯡꯒꯤ ꯀꯝꯄꯣꯁꯇꯤꯡ,
ꯗꯤꯀꯝꯄꯣꯖꯤꯁꯟ, ꯃꯁꯤꯒꯤ ꯊꯧꯑꯣꯡ ꯑꯃꯗꯤ ꯀꯥꯟꯅꯕ ꯀꯔꯤꯅꯣ,
ꯀꯔꯝꯅ ꯀꯥꯟꯅꯕ ꯑꯗꯨ ꯂꯧꯒꯅꯤ ꯍꯥꯏꯕꯅꯆꯤꯡꯕ ꯀꯌꯥꯅꯤ꯫ ꯂꯣꯏꯅ
ꯂꯣꯏꯅꯅ ꯃꯁꯤꯕꯨ ꯃꯃꯨꯠ ꯇꯥꯅ ꯈꯪꯂꯕꯗꯤ ꯃꯍꯧꯁꯥꯒꯤ SM ꯀꯥꯏꯍꯟꯗꯅ
ꯉꯥꯛꯇꯨꯅ ꯊꯝꯕꯗꯁꯨ ꯑꯆꯧꯕ ꯊꯧꯗꯥꯡ ꯂꯧꯕ ꯉꯝꯒꯅꯤ꯫

IMPHAL, MONDAY, SEPTEMBER 25, 2017 ꯅꯤꯡꯊꯧꯀꯥꯕ, ꯃꯦꯔꯥꯒꯤ 5 ꯅꯤ ꯄꯥꯟꯕ, ꯃꯥꯂꯤꯌꯥ ꯀꯨꯝꯁꯤꯡ 3415 ꯍꯨꯏꯌꯦꯟ ꯂꯥꯟꯄꯥꯎ

HUEIYEN LANPAO

2 ꯂꯧꯎꯁꯤꯡꯎꯒꯤ ꯀꯥꯈꯜ
ꯑꯦꯁ ꯁꯨꯃꯪꯒꯣꯜ ꯁꯤꯡꯍ
ꯍꯨꯏꯌꯦꯟ ꯂꯥꯟꯄꯥꯎ

...ꯑꯦꯗꯤꯇꯔꯗ ꯊꯥꯔꯛꯄ ꯆꯤꯊꯤ...

ꯏꯀꯥꯏꯈꯨꯝꯅꯖꯔꯤꯕ ꯑꯦꯗꯤꯇꯔ,
ꯂꯝꯕꯤ ꯁꯔꯛ ꯆꯠꯄꯗ ꯃꯥꯅ ꯃꯥꯅ ꯇꯧꯅꯤꯡꯕꯗ
ꯃꯅꯤꯡ ꯃꯈꯥ ꯇꯧꯕ, ꯆꯠꯅ-ꯀꯥꯡꯂꯣꯟꯒꯤ ꯋꯥꯡꯃꯗ
ꯒꯥꯔꯤ ꯊꯧꯕ, ꯈꯥꯝꯅꯤꯡꯕ ꯃꯐꯝꯗ ꯒꯥꯔꯤ ꯈꯥꯝꯕ,
ꯊꯝꯅꯤꯡꯕ ꯃꯐꯝꯗ ꯄꯣꯠ ꯄꯩꯁꯤꯟꯕ, ꯄꯨꯝꯅꯃꯛ
ꯑꯁꯤꯅ ꯃꯤꯆꯝ ꯃꯤꯌꯥꯝꯗ ꯊꯦꯡꯅꯔꯤꯕ ꯆꯩꯊꯦꯡ
ꯀꯌꯥꯃꯔꯨꯝꯅꯤ, ꯃꯐꯝ ꯈꯨꯗꯤꯡ ꯈꯨꯔꯛ ꯍꯥꯡꯗꯅ
ꯂꯝꯕꯤ ꯁꯔꯛꯀꯤ ꯃꯥꯒꯤ ꯃꯥꯒꯤ ꯑꯄꯥꯝꯕ ꯃꯈꯥꯗ
ꯂꯤꯡꯂꯤꯕ ꯑꯉꯥꯡꯁꯤꯡꯒꯤ ꯑꯣꯏꯕ ꯄ꯭ꯔꯥꯏꯚꯦꯠ
ꯇ꯭ꯌꯨꯁꯟ ꯁꯦꯟꯇꯔ ꯆꯠꯊꯔꯤꯕ ꯃꯐꯝꯁꯤꯡꯗ
ꯑꯉꯥꯡ ꯂꯧꯕ ꯂꯥꯛꯄꯒꯤ-ꯊꯤꯟꯕꯒꯤ ꯒꯥꯔꯤ ꯃꯌ
ꯥꯝꯅ ꯑꯄꯤꯛꯄ ꯂꯝꯕꯤ ꯁꯔꯛꯀꯤ ꯃꯇꯥꯏꯗ
ꯄꯔꯦꯡ ꯄꯔꯦꯡ ꯁꯤꯐꯥꯏꯒꯤ ꯄꯦꯔꯗ ꯇꯧꯕꯒꯤ
ꯃꯇꯧꯒꯨꯝ ꯂꯦꯡꯗꯨꯅ ꯊꯝꯕꯗꯒꯤ ꯂꯝꯕꯤ ꯆꯠꯄ
ꯃꯤꯑꯣꯏꯁꯤꯡꯗ ꯄꯤꯔꯤꯕ ꯆꯩꯊꯦꯡꯁꯤꯡ
ꯄꯨꯝꯅꯃꯛꯅ ꯊꯦꯡꯅꯔꯤ꯫

ꯍꯤꯔꯝ ꯑꯁꯤꯒꯤ ꯃꯇꯥꯡꯗ ꯃꯔꯤ
ꯂꯩꯅꯕꯁꯤꯡꯒꯤ ꯑꯍꯛꯄ ꯃꯤꯠꯌꯦꯡ
ꯆꯤꯡꯁꯤꯟꯖꯔꯤ꯫ ꯂꯝꯕꯤꯒꯤ ꯃꯇꯥꯏꯗ
ꯊꯝꯂꯤꯕ ꯈꯣꯡꯅ ꯆꯠꯅꯕ (ꯐꯨꯠ ꯄꯥꯊ) ꯁꯤꯡꯗ
ꯈꯣꯡꯅ ꯆꯠꯄ ꯌꯥꯗꯕꯃꯈꯩ ꯁꯔꯛ ꯃꯌꯥꯒꯤ \

ꯨꯝꯕꯨꯁꯤꯡꯒꯤ ꯄꯣꯠ ꯆꯩ ꯄꯩꯁꯤꯟꯕ, ꯀꯔꯕꯥꯔ
ꯇꯧꯕꯁꯤꯡ, ꯒꯥꯔꯤ ꯁꯦꯝꯕ ꯁꯥꯕꯁꯤꯡ ꯑꯌ
ꯥꯝꯕ ꯁꯔꯛꯀꯤ ꯃꯇꯥꯏꯗ ꯒꯥꯔꯤ ꯈꯥꯝꯖꯤꯟꯕ,
ꯄꯣꯠ ꯆꯩ, ꯂꯩꯉꯣꯏ, ꯅꯨꯡ, ꯆꯦꯛ, ꯎ-ꯋꯥꯅꯆꯤꯡꯕ
ꯊꯝꯖꯤꯟꯕꯁꯤꯡ ꯑꯗꯨꯕꯨ ꯂꯝꯕꯤ ꯆꯠꯄꯁꯤꯡꯅ
ꯍꯥꯏꯖꯕꯗꯤ ꯉꯝꯖꯗꯕ, ꯊꯃꯣꯏꯅꯨꯡꯗ ꯈꯨꯇꯨꯝꯅ
ꯁꯨꯗꯨꯅ ꯈꯥꯡꯅꯔꯤ꯫ ꯂꯩꯉꯥꯛꯀꯤ ꯑꯅꯧꯕ ꯀꯥꯡꯂꯣꯟ
ꯊꯧꯔꯥꯡꯁꯤꯡꯒꯤ ꯃꯈꯥꯗ KON ꯍꯣꯜꯗꯔꯁꯤꯡ
ꯔꯦꯖꯤꯁꯇꯔ ꯇꯧꯅꯕ ꯂꯧꯈꯠꯂꯛꯄ ꯑꯁꯤꯒꯤ
ꯃꯅꯨꯡ ꯆꯟꯗ꯭ꯔꯕ ꯍꯥꯏꯅ ꯃꯤꯑꯣꯏꯈꯨꯗꯤꯡꯃꯛꯅ ꯍꯪꯅꯔꯤ꯫ ꯑꯗꯨ ꯑꯣꯏꯔꯒꯗꯤ ꯃꯈꯣꯏ ꯃꯈꯣꯏ
ꯃꯐꯝꯗ ꯄꯣꯠ ꯆꯩ, ꯒꯥꯔꯤ ꯊꯥꯐꯝ ꯌꯥꯎꯕ ꯃꯐꯝꯗ
ꯇꯧꯕ ꯇꯥꯕꯅꯤ꯫ ꯑꯃꯨꯛꯇ ꯍꯟꯅ ꯌꯦꯡꯕꯤꯌꯨ ꯍꯥꯞꯇ
ꯀꯥꯡꯖꯩꯕꯨꯡꯗ ꯁꯥꯗꯨꯅ ꯊꯝꯂꯤꯕ ꯌꯨꯝꯁꯤꯡ, ꯑꯇꯦꯛ
ꯑꯀꯥꯏ, ꯅꯥꯄꯤ-ꯃꯣꯡꯁꯥꯡ, ꯇꯤꯜ-ꯀꯥꯡꯅꯆꯤꯡꯕꯒꯤ
ꯃꯀꯣꯜ ꯑꯣꯏꯔꯦ꯫ ꯃꯥꯏꯀꯩ ꯑꯃꯔꯣꯝꯗ ꯁꯔꯛꯇ
ꯑꯉꯥꯡ ꯃꯌꯥꯝꯒꯤ ꯁꯥꯟꯅꯐꯝꯁꯨ ꯑꯣꯏꯔꯤ꯫

ꯃꯅꯥꯛ ꯅꯛꯄ ꯑꯀꯣꯏꯕꯗ ꯂꯦꯝꯖꯅꯤꯡꯉꯥꯏ
ꯑꯣꯏꯔꯕ ꯂꯣꯏꯁꯪꯁꯤꯡ ꯂꯩꯔꯤꯕꯅꯤ꯫ ꯃꯌꯥꯏ ꯀꯥꯕ
ꯆꯤꯟꯖꯥꯛ ꯊꯤꯡꯕꯒꯨꯝꯅ ꯑꯁꯤꯒꯨꯝꯕ ꯊꯧꯑꯣꯡꯁꯤꯡ
ꯑꯁꯤ ꯊꯤꯡꯕꯤꯅꯕ ꯂꯩꯉꯥꯛꯀꯤ ꯃꯤꯠꯌꯦꯡ
ꯆꯤꯡꯁꯤꯟꯖꯔꯤ꯫ ꯃꯤꯁꯤ ꯃꯤꯅꯥ ꯊꯣꯛꯄ ꯌꯥꯕꯃꯌ
ꯥꯝ ꯑꯁꯤꯗꯒꯤ ꯑꯆꯥꯟ ꯃꯤꯔꯥꯏ, ꯁꯛ ꯃꯥꯏ ꯌꯦꯡꯗꯅ
ꯆꯠꯅ-ꯀꯥꯡꯂꯣꯟ ꯂꯩꯍꯟꯅꯕ ꯍꯣꯠꯅꯕꯤꯔꯤꯕꯁꯤꯡꯅ
ꯃꯤꯠꯌꯦꯡ ꯆꯤꯡꯁꯤꯟꯕꯤꯗꯨꯅ ꯑꯁꯤꯒꯨꯝꯕ
ꯈꯨꯗꯣꯡꯊꯤꯔꯤꯕ ꯑꯁꯤꯗꯒꯤ ꯑꯃꯨꯛꯇ ꯀꯟꯕꯤꯌꯨ
ꯍꯥꯏꯅ ꯅꯣꯜꯂꯨꯛꯅ ꯐꯣꯡꯗꯣꯛꯆꯔꯤ꯫

ꯑꯗꯣꯝꯒꯤ ꯑꯊꯣꯛꯄꯝ ꯇꯣꯝꯕ, ꯋꯥꯡꯈꯩ \

ꯣꯡꯂꯥꯟ ꯂꯩꯔꯛ꯫

ꯅꯤꯡꯇꯝꯕꯒꯤ ꯆꯩꯅꯥꯈꯣꯜ
ꯐꯧꯅꯥꯗ ꯊꯣꯛꯍꯟꯕ ꯂꯥꯏꯅꯥꯁꯤꯡ
qDmkKG (Blast):

ꯂꯥꯏꯅꯥ ꯊꯣꯛꯍꯜꯂꯤꯕ ꯀꯣꯛꯐꯥꯏ: Pyricularia

ꯣꯗꯧꯚꯃꯅ ꯐꯧꯗ ꯇꯥꯕ ꯂꯥꯏꯅꯥꯁꯤꯡꯒꯤ ꯃꯅꯨꯡꯗ ꯈ꯭ꯋꯥꯏꯗꯒꯤ
ꯍꯦꯟꯅ ꯁꯥꯊꯤꯕ ꯑꯃꯁꯨꯡ ꯃꯥꯂꯦꯝꯒꯤ ꯐꯧ ꯊꯥꯔꯤꯕ ꯃꯐꯝ ꯈꯨꯗꯤꯡꯗ
ꯊꯦꯡꯅꯕ ꯂꯥꯏꯅꯥꯅꯤ꯫ ꯂꯥꯏꯅꯥ ꯑꯁꯤꯅ ꯀꯨꯝꯖꯥ 1919 ꯗ ꯇꯥꯃꯤꯜ ꯅꯥꯗꯨꯗ
ꯌꯥꯝꯅ ꯁꯥꯊꯤꯕ ꯆꯥꯛ ꯇꯥꯡꯕ ꯑꯃ ꯊꯣꯛꯈꯤꯕꯇ ꯅꯠꯇꯅ ꯀꯨꯝꯖꯥ
1955 ꯗ ꯆꯤꯇꯣꯔ ꯗꯤꯁꯇ꯭ꯔꯤꯛꯇ ꯑꯦꯀꯔ 5,000 ꯒꯤ ꯂꯧ,
ꯄꯣꯠꯊꯣꯛ ꯑꯃꯠꯇ ꯄꯨꯊꯣꯛꯇꯅ ꯁꯥ-ꯁꯟꯒꯤꯗꯃꯛ ꯊꯥꯕ ꯑꯣꯏꯅ
ꯊꯣꯛꯍꯟꯈꯤ꯫ ꯃꯅꯤꯄꯨꯔꯒꯤ ꯐꯧ ꯊꯥꯔꯤꯕ ꯃꯐꯝ ꯈꯨꯗꯤꯡꯗ ꯊꯦꯡꯅꯕ
ꯈ꯭ꯋꯥꯏꯗꯒꯤ ꯍꯦꯟꯅ ꯃꯔꯨꯑꯣꯏꯕ ꯂꯥꯏꯅꯥꯅꯤ꯫

ꯂꯥꯏꯑꯣꯡ:

ꯐꯧ ꯄꯥꯝꯕꯤꯒꯤ ꯃꯊꯛ ꯊꯪꯕ ꯁꯔꯨꯛ ꯄꯨꯝꯅꯃꯛꯇ ꯂꯥꯏꯅꯥ ꯑꯁꯤ
ꯇꯥꯏ꯫ ꯐꯧꯒꯤ ꯃꯅꯥ, ꯃꯇꯥꯡ, ꯐꯧ ꯆꯔꯣꯡꯒꯤ ꯇꯣꯉꯥꯟ ꯇꯣꯉꯥꯟꯕ
ꯃꯐꯝꯁꯤꯡ ꯑꯃꯁꯨꯡ ꯐꯧ ꯃꯔꯨꯗ ꯂꯥꯏꯅꯥ ꯑꯁꯤ ꯎꯕ WIT! ꯃꯐꯝ
ꯈꯦꯟꯅꯕꯒꯤ ꯃꯇꯨꯡ ꯏꯟꯅ ꯕ꯭ꯂꯥꯁꯠ, ꯐꯧꯒꯤ ꯃꯇꯥꯡꯗ ꯇꯥꯔꯒꯅ ꯅꯣꯗ
ꯕ꯭ꯂꯥꯁꯠ ꯑꯃꯁꯨꯡ ꯆꯔꯣꯡꯒꯤ ꯃꯉꯛꯇ ꯊꯥꯔꯒꯅ ꯅꯦꯛ ꯕ꯭ꯂꯥꯁꯠ
ꯍꯥꯏꯅ ꯈꯪꯅꯩ꯫

ꯐꯧꯒꯤ ꯃꯅꯥꯗ ꯄꯤꯁꯛ ꯄꯤꯛꯅ ꯆꯣꯠ ꯆꯣꯠ ꯂꯥꯎꯅ ꯀꯣꯜꯍꯤꯡ
ꯃꯆꯨꯒꯤ ꯗꯥꯒ ꯃꯥꯟꯅ ꯎꯔꯝꯕꯗꯒꯤ ꯃꯇꯣꯟ ꯑꯅꯤꯃꯛ ꯏꯇꯨꯝ
ꯇꯨꯝꯅ ꯂꯩꯕ ꯗꯥꯒꯁꯤꯡꯗꯨ ꯑꯁꯨꯝ ꯑꯁꯨꯝ ꯆꯥꯎꯊꯣꯔꯛꯏ꯫ ꯗꯥꯒꯀꯤ
ꯃꯄꯥꯟ ꯅꯥꯄꯨ ꯃꯆꯨꯗ ꯉꯥꯡꯇꯛ ꯇꯧꯅ ꯂꯩ꯫ ꯃꯌꯥꯏꯗ ꯉꯧꯔꯨꯅꯕ
ꯂꯩꯒꯅꯤ꯫ ꯕ꯭ꯂꯥꯁꯠꯅ ꯐꯧꯒꯤ ꯃꯇꯥꯡꯗ ꯇꯥꯔꯕꯗꯤ ꯇꯥꯔꯤꯕ ꯃꯇꯥꯡ ꯑꯗꯨ
ꯃꯨꯁꯤꯜ ꯃꯨꯅ ꯈꯥꯝꯗꯦꯛꯄ ꯊꯦꯡꯅꯒꯅꯤ꯫ ꯐꯤꯚꯝꯁꯤꯗ ꯄꯥꯝꯕꯤꯒꯤ
ꯃꯆꯤꯟꯖꯥꯛꯅꯁꯤꯡꯗꯨ ꯐꯧ ꯃꯇꯣꯟ ꯌꯧꯅ ꯄꯨꯔꯛꯄ ꯉꯝꯗꯕꯗꯒꯤ
ꯐꯧ ꯃꯔꯨ ꯆꯪꯍꯟꯕ ꯉꯝꯗꯦ, ꯐꯧꯍꯥꯝ ꯁꯥꯠꯍꯜꯂꯤ꯫ ꯐꯧ ꯆꯔꯣꯡꯒꯤ
ꯃꯉꯛꯇ ꯂꯥꯏꯅꯥ ꯑꯁꯤ ꯂꯥꯟꯁꯤꯜꯂꯛꯂꯕꯗꯤ ꯆꯔꯣꯡꯒꯤ ꯃꯉꯛ
ꯑꯗꯨ ꯏꯟꯆꯤ ꯑꯃꯔꯣꯝ ꯁꯥꯡꯅ ꯃꯨꯁꯤꯟ ꯃꯨꯅ ꯈꯥꯝꯗꯦꯛꯍꯜꯂꯛꯏ꯫

ꯆꯔꯤ ꯇꯠꯂꯕ ꯐꯧ ꯆꯔꯣꯡꯗꯨ ꯐꯧꯍꯥꯝ ꯁꯥꯠꯍꯜꯂꯤ꯫

ꯂꯥꯏꯅꯥ ꯁꯟꯗꯣꯛꯄꯒꯤ ꯃꯑꯣꯡ:

ꯃꯔꯨꯑꯣꯏꯅ ꯅꯨꯡꯁꯤꯠꯅ ꯂꯥꯏꯅꯥꯁꯤ ꯁꯟꯗꯣꯛꯏ, ꯐꯧꯗꯤꯗ
ꯂꯥꯏꯅꯥꯁꯤ ꯆꯦꯟꯟꯔꯛꯄꯒꯤ ꯆꯥꯡ ꯅꯦꯝꯃꯤ꯫ ꯆꯔꯨꯈꯣꯛ ꯑꯃꯁꯨꯡ
ꯏꯁꯤꯡꯅ ꯁꯟꯗꯣꯛꯄꯒꯤ ꯆꯥꯡꯁꯨ ꯅꯝꯃꯤ꯫

ꯂꯥꯏꯅꯥꯁꯤꯡ ꯄꯥꯛ ꯁꯟꯅ ꯁꯟꯗꯣꯔꯛꯄ ꯌꯥꯕ ꯐꯤꯚꯝꯁꯤꯡ:

ꯀ) ꯂꯧꯐꯝꯗ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯆꯥꯡ ꯋꯥꯡꯕ꯫

ꯁ) ꯅꯨꯡꯁꯤꯠꯇ ꯏꯁꯤꯡ ꯃꯅꯤꯜꯒꯤ ꯆꯥꯡ ꯋꯥꯡꯕ (ꯔꯤꯂꯦꯖꯤꯚ ꯍ꯭ꯌ
ꯨꯃꯤꯗꯤꯇꯤ ꯆꯥꯗ 93 ꯒꯤ ꯃꯊꯛꯇ ꯂꯩꯕ)꯫

ꯂ) ꯃꯇꯝ ꯁꯥꯡꯊꯅ ꯂꯤꯛꯂꯥ ꯇꯥꯕ (ꯄꯨꯡ 10 ꯅꯠꯇ꯭ꯔꯅ ꯍꯦꯟꯅ
ꯊꯥꯡꯊꯕ)
ꯃ) ꯅꯨꯃꯤꯗꯥꯡꯗ ꯗꯤꯒ꯭ꯔꯤ ꯁꯦꯜꯁꯤꯌꯁ 26 ꯑꯃꯁꯨꯡ ꯃꯁꯤꯗꯒꯤ
ꯇꯥꯊꯕ꯫

ꯄ) ꯌꯥꯝꯅ ꯀꯨꯞꯅ ꯀꯨꯞꯅ ꯃꯇꯝ ꯁꯥꯡꯊꯅ ꯅꯣꯡ ꯇꯥꯕ꯫

ꯅ) ꯑꯇꯤꯌꯥꯗ ꯅꯣꯡꯅ ꯀꯨꯞꯁꯤꯟꯗꯨꯅ ꯍꯥꯏꯕꯗꯤ ꯃꯪꯗꯨꯅ ꯂꯩꯕ꯫

ꯃꯊꯛꯀꯤ ꯐꯤꯚꯝꯁꯤꯡꯁꯤꯗ ꯀꯣꯛꯐꯥꯏ ꯁꯨꯖꯥ ꯑꯁꯤꯒꯤ ꯃꯔꯨ
(Conidia) ꯄꯨꯊꯣꯛꯄ, ꯁꯟꯗꯣꯛꯄ ꯑꯃꯁꯨꯡ ꯀꯣꯛꯐꯥꯏ
ꯃꯇꯣꯟ ꯊꯣꯛꯍꯟꯗꯨꯅ ꯄꯥꯝꯕꯤꯒꯤ ꯁꯦꯜ ꯃꯅꯨꯡꯗ ꯆꯪꯂꯛꯄ
ꯉꯝꯍꯜꯂꯤ꯫ ꯇꯦꯜꯂꯕ ꯃꯇꯝ ꯈꯔꯒꯤ ꯃꯇꯨꯡꯗ ꯂꯥꯏꯅꯥꯁꯤ ꯃꯐꯝ
ꯁꯤꯟꯕ ꯊꯨꯡꯅ ꯁꯟꯗꯣꯛꯏ꯫

ꯉꯥꯛꯊꯣꯛꯅꯕ ꯎꯄꯥꯏꯁꯤꯡ:

1) ꯂꯥꯏꯅꯥꯁꯤꯕꯨ ꯉꯥꯛꯊꯣꯛꯆꯕ ꯉꯝꯖꯕ ꯐꯧ ꯃꯈꯜꯁꯤꯡ ꯊꯥꯅꯕ
ꯍꯣꯠꯅꯒꯅꯤ꯫ ꯃꯇꯝ ꯑꯃꯗ ꯉꯥꯛꯊꯣꯛꯆꯕ ꯉꯝꯂꯝꯂꯕꯁꯨ ꯇꯨꯡ
ꯀꯣꯏꯗꯕ ꯌꯥꯎꯏ꯫ ꯑꯅꯧꯕꯁꯤꯡꯒꯤ ꯃꯔꯛꯇꯒꯤ ꯈꯟꯒꯅꯤ꯫

2) ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯍꯥꯞꯄꯒꯤ ꯆꯥꯡ ꯍꯦꯟꯒꯠꯄꯒ ꯂꯥꯏꯅꯥ ꯑꯁꯤ
ꯇꯥꯕ ꯍꯦꯟꯒꯠꯄꯒ ꯃꯔꯤ ꯌꯥꯝꯅ ꯂꯩꯅꯕ ꯃꯔꯝꯅ ꯑꯀꯛꯅꯕ ꯆꯥꯡꯗ
ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟ ꯃꯆꯤꯠ ꯃꯆꯤꯠ ꯑꯣꯏꯅ ꯆꯥꯡ ꯍꯟꯊꯅ ꯍꯥꯞꯀꯅꯤ꯫

3) ꯑꯐꯕ ꯃꯁꯛ ꯈꯪꯂꯕ ꯐꯧꯗꯤꯇꯃꯛ ꯁꯤꯖꯤꯟꯅꯒꯅꯤ꯫

4) ꯂꯥꯏꯅꯥꯒꯤ ꯂꯥꯏꯑꯣꯡ ꯎꯠꯂꯕ ꯃꯐꯝ ꯑꯃꯗ, ꯆꯥꯡꯆꯠꯇ ꯃꯅꯥ
ꯑꯃꯗ ꯗꯥꯒ 4/5 ꯒꯤ ꯆꯥꯡꯗ ꯎꯔꯕꯗꯤ ꯃꯈꯥ ꯇꯥꯅ ꯀꯣꯛꯐꯥꯏ ꯁꯨꯖꯥ
ꯑꯁꯤꯒꯤ ꯃꯔꯨ ꯁꯟꯗꯣꯔꯛꯇꯅꯕ ꯍꯤꯗꯥꯛ ꯀꯥꯞꯊꯣꯛꯀꯅꯤ꯫

Tricyclazole 75% WP xDjkA 75 KZA [a

ꯆꯥꯎꯕ ꯂꯧꯐꯝꯗ ꯀꯥꯞꯊꯣꯛꯀꯅꯤ꯫ ꯏꯁꯤꯡ ꯂꯤꯇꯔ 15 ꯈꯨꯗꯤꯡꯗ
ꯍꯤꯗꯥꯛ ꯒ꯭ꯔꯥꯝ 10 ꯌꯥꯅꯒꯅꯤ꯫ ꯅꯠꯇ꯭ꯔꯒ ꯁꯗꯅꯀꯍꯒꯡꯂ

methyl 50% ꯃꯤꯂꯤꯂꯤꯇꯔ 100 ꯁꯤꯖꯤꯟꯅꯒꯅꯤ ꯅꯠꯇ꯭ꯔꯒ

Metominostrobin 20 ꯃꯤꯂꯤꯂꯤꯇꯔ 125 ꯆꯪꯒꯅꯤ꯫

KZA ꯑꯃ ꯆꯥꯎꯕ ꯂꯧꯐꯝꯒꯤꯗꯃꯛ ꯏꯁꯤꯡ ꯂꯤꯇꯔ 100 ꯆꯪꯒꯅꯤ꯫

ꯗꯥ ꯑꯦꯝ FOTFOT ꯁꯤꯡꯍ
10 = ꯏꯃꯗꯃ
(Amada Phun)
ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ ꯊꯨꯒꯥꯏꯕ ꯑꯅꯤꯔꯛꯁꯨꯕ ꯑꯣꯐꯦꯟꯁ ꯈꯪꯅꯕ ꯀꯔꯤ ꯊꯧꯔꯥꯡ ꯂꯩꯔꯕꯒꯦ
ꯂꯩꯕꯥꯛ ꯑꯁꯤꯒꯤ ꯃꯦꯇ꯭ꯔꯣꯄꯣꯂꯤꯇꯥꯟ ꯁꯤꯇꯤꯁꯤꯡꯗ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁꯅ ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ ꯉꯥꯛꯅ ꯆꯠꯍꯟꯅꯕ ꯂꯣꯒꯤ ꯑꯣꯏꯕ ꯑꯀꯟꯕ ꯊꯕꯛ ꯂꯧꯈꯠꯂꯤ꯫ ꯃꯈꯣꯏꯗ ꯚꯤ
ꯑꯥꯏ ꯄꯤ ꯅꯠꯇ꯭ꯔꯒ ꯚꯤ ꯚꯤ ꯑꯥꯏ ꯄꯤ ꯍꯥꯏꯕ ꯑꯃ ꯂꯩꯇꯦ꯫ ꯐ꯭ꯂꯦꯒ ꯄꯣꯠꯁ ꯌꯥꯎꯕ ꯃꯇꯤꯛ-ꯃꯌ
ꯥꯏ ꯂꯩꯕ ꯃꯤ ꯐꯥꯎꯕ ꯏꯆꯝ ꯆꯝꯕ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁ ꯑꯃꯅ ꯐꯥꯔꯒ ꯇꯤ ꯑꯥꯔ ꯀꯛꯄ ꯉꯝꯃꯤ꯫

ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟꯁꯤꯡ ꯉꯥꯛꯍꯟꯅꯕ ꯄꯤꯔꯤꯕ ꯒꯥꯏꯗ ꯂꯥꯏꯟ ꯏꯟꯗꯕꯁꯤꯡ ꯆꯞ ꯆꯥꯅ ꯊꯕꯛ
ꯂꯧꯈꯠꯄ ꯉꯝꯃꯤ꯫ ꯖꯦꯕ꯭ꯔ ꯀ꯭ꯔꯣꯁꯤꯡꯒꯤ ꯂꯥꯏꯟꯗ ꯈꯖꯤꯛꯇꯪ ꯁꯣꯛꯂꯨꯕꯗ ꯒꯥꯔꯤ ꯊꯧꯔꯛꯂꯤꯕ
ꯗ꯭ꯔꯥꯏꯚꯔ ꯑꯗꯨꯒꯤ ꯂꯥꯏꯁꯦꯟꯁ ꯐꯥꯖꯤꯟꯕꯅꯆꯤꯡꯕ ꯇꯣꯉꯥꯟ ꯇꯣꯉꯥꯟꯕ ꯆꯩꯔꯥꯛꯁꯤꯡ ꯄꯤꯔꯤ꯫

ꯍꯥꯏꯔꯤꯕ ꯁ꯭ꯇꯦꯠꯁꯤꯡ ꯑꯁꯤꯗ ꯂꯩꯔꯤꯕ ꯃꯤꯌꯥꯝꯅ ꯗ꯭ꯔꯥꯏꯚꯤꯡ ꯂꯥꯏꯁꯦꯟꯁ ꯐꯪꯅꯅꯕ ꯍꯣꯠꯅꯕꯗ
ꯃꯆꯥꯛ ꯀꯌꯥꯃꯔꯨꯝ ꯆꯪꯏ꯫ ꯍꯥꯏꯔꯤꯕ ꯃꯆꯥꯛꯁꯤꯡ ꯑꯁꯤ ꯑꯃꯇꯪ ꯋꯥꯠꯄꯗ ꯂꯥꯏꯁꯦꯟꯁ ꯐꯪꯕ
ꯉꯝꯗꯦ꯫ ꯃꯔꯝ ꯑꯗꯨꯅ ꯀꯅꯥꯒꯨꯝꯕ ꯒꯥꯔꯤ ꯊꯧꯕ ꯃꯤꯑꯣꯏ ꯑꯃꯅ ꯑꯀꯥꯏꯕ ꯇꯧꯔꯨꯕꯒꯤ ꯄꯨꯂꯤꯁꯅ
ꯅꯠꯇ꯭ꯔꯒ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁꯅ ꯂꯥꯏꯁꯦꯟꯁ ꯍꯦꯛ ꯐꯥꯖꯤꯟꯈꯤꯕꯗ ꯃꯍꯥꯛ ꯒꯥꯔꯤ ꯊꯧꯕ ꯉꯝꯕꯒꯤ
ꯄꯥꯝꯕꯩ ꯑꯃ ꯐꯥꯎꯕ ꯂꯩꯇꯦ꯫ ꯆꯨꯝꯃꯤ, ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ ꯉꯥꯛꯅ ꯆꯠꯍꯟꯕ ꯍꯥꯏꯕꯁꯤ ꯃꯁꯥꯃꯛ
ꯌꯥꯎꯅ ꯃꯤꯑꯣꯏ ꯀꯌꯥꯒꯤ ꯈꯨꯗꯣꯡꯊꯤꯕ ꯑꯃꯗꯤ ꯄꯨꯟꯁꯤ ꯃꯥꯡꯒꯗꯕꯗꯒꯤ ꯀꯥꯟꯅꯕꯅꯤ꯫ ꯃꯁꯤꯅ
ꯃꯔꯝ ꯑꯣꯏꯔꯒ ꯀꯥꯡꯈꯣꯡ ꯑꯅꯤ ꯄꯥꯟꯕ ꯒꯥꯔꯤ ꯊꯧꯔꯤꯕꯁꯤꯡ ꯑꯃꯁꯨꯡ ꯇꯣꯡꯕꯁꯤꯡꯅ ꯁꯨꯡꯁꯣꯏ
ꯁꯣꯏꯗꯅ ꯍꯦꯜꯃꯦꯠ ꯎꯞꯀꯗꯕꯅꯤ ꯍꯥꯏꯔꯛꯂꯤꯕ, ꯀꯥꯡꯈꯣꯡ ꯃꯔꯤꯒꯤ ꯑꯦꯟꯖꯤꯟ ꯄꯥꯟꯕ ꯒꯥꯔꯤ
ꯊꯧꯕꯁꯤꯡꯅ ꯁꯨꯡꯁꯣꯏ ꯁꯣꯏꯗꯅ ꯁꯤꯠ ꯕꯦꯜꯠ ꯐꯥꯒꯗꯕꯅꯤ ꯍꯥꯏꯕꯅꯆꯤꯡꯕꯁꯤꯡ ꯑꯁꯤ ꯑꯩꯈꯣꯏ
ꯃꯤꯑꯣꯏꯕ ꯈꯨꯟꯅꯥꯏꯒꯤ ꯑꯋꯥꯕ ꯇꯥꯒꯗꯕꯁꯤꯡ ꯑꯗꯨꯒꯤ ꯀꯥꯟꯅꯕ ꯁꯦꯝꯕ ꯀꯥꯡꯂꯣꯟꯅꯤ꯫ ꯀꯥꯡꯂꯣꯟ
ꯑꯁꯤ ꯉꯥꯛꯅ ꯆꯠꯄ ꯍꯥꯏꯕꯁꯤ ꯑꯩꯒꯤ ꯑꯋꯥꯕ ꯇꯥꯒꯗꯕ ꯑꯗꯨꯗꯒꯤ ꯀꯟꯒꯗꯧꯔꯤꯕꯅꯤ ꯍꯥꯏꯕꯁꯤ
ꯑꯩꯈꯣꯏ ꯄꯨꯝꯅꯃꯛꯅ SIT! ꯑꯗꯨꯕꯨ ꯊꯧ-ꯋꯥ ꯁꯥꯗꯕ, ꯍꯦꯜꯃꯦꯠ ꯎꯞꯇꯅ ꯒꯥꯤꯔ ꯊꯧꯕ ꯑꯃꯗꯤ
ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟꯁꯤꯡ ꯊꯨꯒꯥꯏꯕꯒꯤ ꯆꯠꯅꯕꯤ ꯑꯁꯤ ꯑꯇꯩ ꯁ꯭ꯇꯦꯠꯁꯤꯡꯗꯒꯤ ꯃꯅꯤꯄꯨꯔꯅ
ꯈ꯭ꯋꯥꯏꯗꯒꯤ ꯍꯦꯟꯕꯗꯧꯅ ꯇꯧꯏ꯫ ꯍꯦꯜꯃꯦꯠ ꯎꯞꯄ ꯍꯥꯏꯕꯗ ꯃꯔꯝ ꯑꯃ ꯄꯤꯁꯤꯜꯂꯒ ꯃꯊꯧ
ꯇꯧꯔꯤꯕ ꯄꯨꯂꯤꯁ ꯄꯥꯔꯁꯅꯦꯜꯁꯤꯡ ꯅꯠꯇ꯭ꯔꯒ ꯃꯣꯇꯣꯔ ꯚꯦꯍꯤꯀꯜꯒꯤ ꯑꯦꯟꯐꯣꯔꯁꯃꯦꯟꯠ
ꯋꯤꯡꯒꯤ ꯀꯥꯡꯕꯨꯗ ꯈꯠꯅꯕ ꯍꯧꯏ꯫ ꯈꯪꯅ-ꯆꯥꯟꯅꯕ, ꯑꯉꯝꯕ ꯃꯤ ꯊꯤꯔꯒ ꯃꯈꯣꯏꯕꯨ ꯇꯤ ꯑꯥꯔ
ꯀꯛꯍꯟꯗꯅꯕ ꯍꯣꯠꯅꯕ ꯃꯤꯑꯣꯏ ꯀꯌꯥ ꯑꯃꯁꯨꯡ ꯌꯥꯎꯗꯕ ꯅꯠꯇꯦ꯫ ꯃꯔꯨꯑꯣꯏꯅ ꯃꯃꯥ-ꯃꯄꯥ
ꯅꯠꯇ꯭ꯔꯒ ꯋꯥꯈꯜ ꯇꯥꯔꯕꯁꯤꯡꯅ ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ ꯉꯥꯛꯅ ꯆꯠꯂꯨ, ꯃꯁꯤꯅ ꯅꯍꯥꯛꯀꯤ
ꯄꯨꯟꯁꯤ ꯀꯟꯒꯗꯧꯔꯤꯕꯅꯤ ꯍꯥꯏꯕ ꯋꯥꯐꯝ ꯑꯁꯤ ꯈꯪꯍꯟꯅꯕ ꯍꯣꯠꯅꯕꯒꯤ ꯇꯉꯥꯏꯐꯗꯕ ꯂꯩ꯫ ꯆꯍꯤ
ꯅꯧꯔꯤꯕ ꯑꯉꯥꯡꯁꯤꯡꯗꯁꯨ ꯁ꯭ꯀꯨꯜꯒꯤ ꯑꯣꯖꯥꯁꯤꯡꯅ ꯑꯦꯛꯁꯇ꯭ꯔꯥ ꯀ꯭ꯂꯥꯁ ꯑꯃ ꯑꯣꯏꯅ ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ
ꯀꯥꯡꯂꯣꯟꯁꯤꯡ ꯇꯥꯛꯄꯤꯕꯒꯤ ꯇꯉꯥꯏꯐꯗꯕꯁꯨ ꯂꯩ꯫ ꯃꯇꯝ ꯑꯃꯗ ꯂꯩꯔꯝꯕ ꯃꯔꯨꯑꯣꯏꯕ ꯂꯝꯕꯤ ꯑꯌ
ꯥꯝꯕ ꯆꯤꯐ ꯃꯤꯅꯤꯁꯇꯔ ꯑꯣꯀ꯭ꯔꯝ ꯏꯕꯣꯕꯤꯒꯤ ꯂꯩꯉꯥꯛ ꯃꯇꯝꯗ ꯆꯥꯎꯊꯣꯛꯂꯝꯂꯦ꯫ ꯂꯩꯈꯤꯗ꯭ꯔꯕ _

ꯥꯍꯦꯡꯕꯝ ꯅꯤꯄꯥꯃꯆꯥꯒꯤ ꯂꯩꯉꯥꯛ ꯃꯇꯝꯗ ꯀꯩꯁꯥꯝꯄꯥꯠ ꯊꯣꯡ ꯑꯁꯤ ꯄꯥꯛ ꯆꯥꯎꯅ ꯁꯥꯝꯈꯤꯕꯅ ꯀꯅꯥꯅꯕꯨ
ꯀꯔꯝꯕ ꯃꯇꯝꯗ ꯂꯝꯕꯤ ꯆꯤꯜꯍꯟꯒꯗꯧꯔꯤꯕꯅꯣ ꯍꯥꯏꯅ ꯂꯧꯅꯔꯝꯃꯤ꯫ ꯏꯟꯗꯣ-ꯕꯔꯃꯥ ꯔꯣꯗ,
ꯋꯥꯡꯍꯦꯡꯕꯝ ꯂꯩꯀꯥꯏ ꯂꯝꯕꯤ, ꯇꯤꯗꯤꯝ ꯂꯝꯕꯤ, ꯏꯝꯐꯥꯜ ꯖꯤꯔꯤ ꯂꯝꯕꯤꯒꯤ ꯏꯝꯐꯥꯜꯗꯒꯤ ꯑꯦꯔꯤꯌ
ꯦꯟꯇꯦꯜ ꯀꯣꯂꯦꯖ ꯐꯥꯎꯕ, ꯎꯔꯤꯄꯣꯛ ꯃꯥꯏꯀꯩ, ꯊꯥꯡꯃꯩꯕꯟꯁꯤꯡꯕ ꯂꯝꯕꯤꯁꯤꯡ ꯑꯁꯤ ꯆꯥꯎꯊꯣꯛꯅꯕ
ꯍꯣꯠꯅꯕꯗ ꯑꯆꯧꯕ ꯁꯦꯟꯐꯝ ꯑꯃ ꯊꯥꯗꯈꯤ꯫ ꯊꯥꯗꯈꯤꯕ ꯁꯦꯟꯐꯝꯁꯤꯡ ꯑꯗꯨ ꯑꯔꯦꯝꯕꯅꯤ ꯍꯥꯏꯅ
ꯃꯇꯝꯗꯨꯗ ꯍꯥꯏꯅꯕꯁꯨ ꯌꯥꯎꯈꯤꯕꯗ ꯅꯠꯇꯦ꯫ ꯑꯗꯨꯕꯨ ꯇꯦꯜꯂꯕ ꯃꯇꯝ ꯈꯔꯁꯤꯗ ꯆꯥꯎꯊꯣꯛꯈꯤꯕ
ꯂꯃꯕꯤꯁꯤꯡ ꯑꯗꯨꯒ ꯍꯦꯅꯒꯠꯂꯛꯂꯤꯕ ꯃꯤꯒꯤ ꯃꯁꯤꯡ ꯑꯃꯁꯨꯡ ꯒꯥꯔꯤꯒꯤ ꯃꯁꯤꯡ ꯑꯁꯤꯒꯅ
ꯂꯝꯕꯤ ꯑꯌꯥꯝꯕ ꯑꯃꯨꯛꯁꯨ ꯆꯤꯟꯕ ꯍꯧꯔꯛꯂꯦ꯫ ꯑꯣꯐꯤꯁ ꯀꯥꯅꯔꯛꯄ, ꯀꯨꯝꯅꯔꯛꯄ ꯃꯇꯝ
ꯅꯠꯇ꯭ꯔꯒ ꯀꯅꯥꯒꯨꯝꯕ ꯚꯤ ꯚꯤ ꯑꯥꯏ ꯄꯤ ꯑꯃ ꯆꯠꯈꯤꯕ ꯃꯇꯨꯡꯗ ꯑꯣꯏꯔꯤꯕ ꯇ꯭ꯔꯥꯐꯤꯛ ꯖꯥꯝꯒꯤ
ꯐꯤꯚꯝ ꯑꯁꯤ ꯆꯥꯎꯈꯠꯄ ꯁꯤꯇꯤꯒꯤ ꯃꯇꯧꯒꯨꯝꯅ ꯇꯧꯕ ꯍꯧꯔꯛꯂꯦ꯫ ꯃꯁꯤꯃꯛꯅ ꯃꯔꯝ ꯑꯣꯏꯔꯒ
ꯃꯅꯤꯄꯨꯔꯗ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁꯀꯤ ꯇꯣꯈꯥꯏꯕ ꯑꯦꯁ ꯄꯤ ꯑꯃ ꯊꯝꯂꯛꯄꯅꯤ ꯍꯥꯏꯅ ꯂꯧꯏ꯫ ꯑꯗꯨꯕꯨ
ꯂꯥꯏꯕꯛ ꯊꯤꯕꯗꯤ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁꯅ ꯃꯤꯌꯥꯝꯒꯤ ꯆꯠꯊꯣꯛ ꯆꯠꯁꯤꯟꯗ ꯃꯦꯇꯦꯡ ꯄꯥꯡꯕ, ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ
ꯀꯥꯡꯂꯣꯟ ꯏꯟꯗꯕꯁꯤꯡꯗꯒꯤ ꯇꯤ ꯑꯥꯔ ꯀꯛꯄ ꯅꯠꯇꯅ ꯃꯈꯣꯏꯅ ꯍꯛꯊꯦꯡꯅꯅ ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ
ꯊꯨꯒꯥꯏꯕ ꯃꯤꯑꯣꯏꯁꯤꯡ ꯑꯗꯨꯕꯨ ꯐꯥꯔꯒ ꯑꯀꯟꯕ ꯊꯕꯛ ꯂꯧꯈꯠꯍꯟꯅꯕ ꯃꯇꯤꯛ-ꯃꯌꯥꯏ ꯑꯃ ꯐꯥꯎꯕ
ꯄꯤꯔꯤ꯫ ꯄꯨꯂꯤꯁ ꯁ꯭ꯇꯦꯁꯟ ꯑꯃꯅ ꯇꯧꯕ ꯉꯝꯕ ꯃꯇꯤꯛ-ꯃꯌꯥꯏ ꯑꯗꯨ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁꯇ ꯄꯤꯔꯒꯗꯤ
ꯂꯣꯕꯨ ꯌꯥꯝꯅ ꯀꯔꯦꯝ-ꯀꯊꯥꯏꯅꯅ ꯂꯧꯕ, ꯑꯆꯥꯎ ꯑꯔꯝ ꯀꯥꯕ ꯃꯤꯑꯣꯏ ꯀꯌꯥ ꯑꯁꯤ ꯃꯉꯛ ꯊꯦꯛꯄ
ꯉꯝꯖꯒꯗꯕꯅꯤ꯫ ꯈ꯭ꯋꯥꯏꯗꯒꯤ ꯅꯨꯡꯉꯥꯏꯇꯕ ꯑꯃꯅ, ꯂꯣꯗꯗꯤ ꯑꯍꯥꯟꯕ ꯑꯣꯐꯦꯟꯁꯀꯤ ꯐꯥꯏꯟ ꯑꯣꯏꯅ
ꯂꯨꯄꯥ ꯑꯁꯨꯛ, ꯑꯅꯤꯁꯨꯕ ꯑꯣꯐꯦꯟꯁ ꯑꯃꯁꯨꯡ ꯑꯍꯨꯝꯁꯨꯕ ꯑꯣꯐꯦꯟꯁꯀꯤ ꯍꯥꯏꯗꯨꯅ ꯇꯣꯉꯥꯟ ꯇꯣꯉꯥꯟꯕ
ꯊꯥꯛꯇ ꯂꯩꯔꯥꯛ ꯄꯤꯅꯅꯕ ꯀꯥꯡꯂꯣꯟꯁꯤꯡ ꯂꯩꯖꯩ꯫ ꯑꯗꯨꯕꯨ ꯃꯅꯤꯄꯨꯔꯗꯗꯤ ꯒꯥꯔꯤ ꯑꯦꯛꯁꯤꯗꯦꯟꯠ ꯊꯣꯛꯄꯗ
ꯄꯔꯝ ꯆꯨꯝꯗꯅ ꯒꯥꯔꯤ ꯊꯧꯕꯒꯤꯅꯤ ꯍꯥꯏꯗꯨꯅ ꯐꯥꯖꯤꯟꯈꯤꯕ ꯂꯥꯏꯁꯦꯟ ꯐꯥꯎꯕ ꯗꯨꯄ꯭ꯂꯤꯀꯦꯠ ꯑꯃ ꯇꯥꯟꯊꯣꯛꯂꯒ
ꯑꯣꯐꯦꯟꯁ ꯑꯃꯠꯇ ꯇꯧꯗ꯭ꯔꯤꯕ ꯑꯃꯒꯨꯝ ꯒꯥꯔꯤ ꯊꯧꯏ꯫ ꯍꯦꯜꯃꯦꯠ ꯎꯞꯇꯕꯒꯤ ꯅꯠꯇ꯭ꯔꯒ ꯁꯤꯠ ꯕꯦꯜꯠ
ꯐꯥꯗꯕꯒꯤ ꯐꯥꯔꯕ ꯃꯤꯑꯣꯏ ꯑꯗꯨ ꯃꯇꯨꯡꯗ ꯑꯃꯨꯛ ꯐꯥꯔꯕꯁꯨ ꯆꯞ ꯃꯥꯟꯅꯕ ꯇꯦꯛꯁ ꯊꯤꯍꯜꯂꯒ ꯊꯥꯗꯣꯛꯏ꯫

ꯇꯁꯦꯡꯅꯃꯛꯀꯤꯗꯤ ꯑꯅꯤꯁꯨꯕ ꯑꯣꯐꯦꯟꯁꯀꯤ ꯑꯣꯏꯅꯗꯤ ꯐꯥꯏꯟꯒꯤ ꯁꯦꯟꯐꯝ ꯍꯦꯟꯒꯠꯍꯟꯕ ꯑꯃꯁꯨꯡ
ꯊꯥ 2 ꯒꯤ ꯑꯣꯏꯅ ꯗ꯭ꯔꯥꯏꯚꯤꯡ ꯂꯥꯏꯁꯦꯟꯁ ꯐꯥꯖꯤꯟꯕꯒꯤ ꯆꯩꯔꯥꯛ ꯐꯥꯎꯕ ꯌꯥꯎꯔꯤꯕꯅꯤ꯫ ꯑꯗꯨꯕꯨ ꯃꯍꯥꯛ ꯃꯃꯥꯡꯗ
ꯑꯃꯨꯛ ꯇ꯭ꯔꯥꯐꯤꯛꯀꯤ ꯀꯥꯡꯂꯣꯟ ꯊꯨꯒꯥꯏꯕꯒꯤ ꯐꯥꯔꯨꯔꯕ ꯃꯤꯁꯛꯅꯤ ꯍꯥꯏꯕꯁꯤ ꯀꯝꯗꯧꯅ ꯈꯪꯒꯗꯒꯦ, ꯂꯣꯒꯤ
ꯊꯣꯡꯗ ꯀꯔꯝꯅ ꯆꯩꯔꯥꯛ ꯄꯤꯕ ꯌꯥꯕꯒꯦ ꯍꯥꯏꯕ ꯊꯧꯁꯤꯜ ꯑꯃꯠꯇ ꯁꯦꯝꯗꯕꯗꯧꯅ ꯇꯧꯔꯤꯕ ꯑꯁꯤ ꯂꯥꯏꯕꯛ
ꯊꯤꯕꯅꯤ꯫ ꯃꯇꯥꯡ ꯑꯁꯤꯗ ꯄꯟꯖꯅꯤꯡꯕ ꯋꯥꯐꯝꯗꯤ, ꯀꯥꯡꯂꯣꯟ ꯆꯨꯝꯅ ꯒꯥꯔꯤ ꯊꯧꯍꯟꯅꯅꯕ ꯇ꯭ꯔꯥꯐꯤꯛ ꯄꯨꯂꯤꯁ
ꯑꯃꯗꯤ ꯃꯣꯇꯣꯔ ꯚꯦꯍꯤꯀꯜꯒꯤ ꯏꯟꯐꯣꯔꯁꯃꯦꯟꯠ ꯋꯤꯡꯗ ꯂꯩꯔꯤꯕ ꯈꯨꯗꯣꯡꯆꯥꯗꯕꯁꯤꯡ ꯑꯃꯁꯨꯡ ꯑꯋ
ꯥꯠꯄꯁꯤꯡ ꯑꯁꯤ ꯂꯩꯉꯥꯛꯅ ꯌꯦꯡꯁꯤꯜꯍꯟꯅꯤꯡꯏ꯫

ꯄꯥꯝꯕꯤꯒꯤ ꯃꯆꯤꯟꯖꯥꯛ ꯃꯆꯜ ꯅꯥꯏꯇ꯭ꯔꯣꯖꯦꯟꯒꯤ ꯈꯣꯡꯆꯠ