African Wood Science and Technology (Forestry)

Evaluation of Water Treatment Facilities Adoption Rates in Nigerian Settings via Randomized Field Trials

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Abstract

Water treatment facilities are essential for improving water quality in Nigeria, particularly in rural settings where access to clean drinking water is limited. A series of randomized field trials were conducted across multiple Nigerian settings to assess the uptake of various water treatment technologies, including UV disinfection and chemical coagulation processes. Data collection included surveys and direct observations to measure adoption rates and system performance. $ext\{Adoption\,Rate\} = rac\{ext\{Number\,of\,Users\}\}\{ext\{Total\,Population\}\}imes 100$ The randomized field trials revealed that UV disinfection systems had a higher adoption rate compared to chemical coagulation methods, with an observed rate of approximately 75% among trial participants. Policy makers should prioritise the implementation and support for water treatment facilities, particularly those that show high user uptake such as UV systems, to ensure sustainable access to clean drinking water in Nigeria. Water Treatment Adoption Rates, Randomized Trials, Nigerian Settings

Keywords: *Sub-Saharan, Africa, RandomizedControlledTrial, RiskAssessment, QualitativeResearch, FacilityEffectiveness, CommunityEngagement*

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