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DEVELOPMENT OF POLLINATOR-FRIENDLY FLOWER MIXES TO SUPPORT CONSERVATION IN WEST AFRICAN URBAN GARDENS

Lauren Lynch¹, Pathmos Akouete², Valère Salako³, Romain Glèlè Kakaï⁴

Université d'Abomey-Calavi¹⁻⁴, Benin

ABSTRACT

The provisioning of supplemental sources of floral resources through strategies such as planting pollinator-friendly flower mixes can support pollinator conservation by providing nutrition during periods when crops are not flowering. However, despite their potential conservation and food production benefits, pollinator-friendly flower mixes have not been developed for use in West Africa. Therefore, we developed and evaluated two pollinator-friendly flower mixes that could be used in West African urban gardens. To facilitate the efficient use of space in rapidly urbanizing environments, we developed an edible mix and a medicinal mix that will simultaneously provide resources for pollinators and people. Each mix was tested at three different planting densities: 60 cm, 30 cm, and 15 cm of distance between plants. Mixes were planted on February 3, 2023 in 2x2-m experimental plots at two experimental gardens. Each mix was replicated six times at each planting density. Seed mixes were then evaluated based on germination rates, vegetation cover, flower production, and pollinator visitation. Both flower mixes attracted pollinators including honey bees, wild bees, butterflies, wasps, and beetles. In the first three months after planting, stem density, vegetation cover, and flower density were highest in plots with the 15-cm planting density and lowest in plots with the 60-cm planting density. Pollinator visitation was highest in the 15-cm planting density plots for the medicinal mix and the 30-cm planting density plots for the edible mix. Both mixes appear to effectively attract pollinators and may be useful to urban gardeners wishing to increase their crop pollination rates.