

CAPREx Fellow - Dr Amissah

CAPREx (Cambridge-Africa Partnership for Research Excellence) Fellowships are a collaborative initiative between the University of Cambridge, the University of Ghana, Legon and Makerere University, Uganda, run by the Cambridge-Africa Programme. CAPREx aims to equip African academics with the skills, resources, networks and vision to become internationally competitive successful researchers, research managers or administrators.

Dr Naalamle Amissah (University of Ghana) was a 2015/16 CAPREx Fellow working at NIAB on alternative methods of cultivation of a medicinal plant, *Cryptolepis sanguinolenta*, to maximize active compound production and prevent species extinction in the wild



Research project

Medicinal plants are known to play a vital role in the health care systems and economic growth of many developing economies. In Ghana, *C. sanguinolenta* is an example of a plant species widely used in the preparation of phyto-medicines for the treatment of malaria.

Unfortunately, like several other medicinal plant species, harvesting is done solely from the wild in non-sustainable ways, resulting in a marked decline in wild populations. Contrary to the decline observed in wild populations, demand for the plants is increasing. Also, as in many medicinal plants, the medically effective substances are found in the roots of *C. sanguinolenta*. Thus, the whole plant is uprooted by the collectors and can never grow again. If repeated with a significant number of plants, within a short time this ultimately leads to the plants' extinction.



Previous work

Conventional propagation methods (through seed, stem and root cuttings) are not able to produce the quantities required for immediate cultivation of *C. sanguinolenta*. Dr Amisshah's lab has established micropropagation protocols (growing plantlets in tissue culture and then planting them out) and has determined suitable media for *in vitro* shoot multiplication and rooting of nodal cuttings for *C. sanguinolenta* (Monney et al. 2016).



Work at NIAB

Dr Amisshah worked at NIAB between April and July 2016 to optimise *C. sanguinolenta* micropropagation protocols, thereby devising sustainable methods for propagation of planting material to support farmer cultivation of this plant and ease harvesting pressure on wild plant populations. She also investigated [tissue culture procedures to produce plants with increased levels of the medically active substances](#).

Collaborators

Dr Amisshah collaborated with Dr Lesley Boyd and worked with the Crop Transformation team at NIAB as part of this fellowship.

Working with Drs Lesley Boyd and Huw Jones, Dr Amisshah explored the [potential to domesticate *C. sanguinolenta* for smallholder farmer cultivation in Ghana](#).

Reference

Monney M. A. D., Amisshah N., and Blay E. (2016) 'Influence of BA and IBA or NAA Combinations on Micropropagation of *Cryptolepis sanguinolenta*,' *American Journal of Plant Sciences*, 7(3), pp. 572-580.