

O.42 - Essential oil and plant extracts as substitutes to synthetic fungicides in the control of fungi

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Maize is one of the most important cereal crops in the world. It provides stable food to many populations. In the developing countries maize is a major source of income to farmers among whom many are resource-poor farmers. Maize cultivation is limited by diseases which cause grain loss of about 11% of the total production. The control of maize diseases is very important as a complementary technology to boost maize production. Various approaches have been used over many decades to control maize diseases. These include breeding for resistance, chemical treatment including seed treatment and biological control. The limits of these approaches have prompted the need of other alternatives method to control diseases of maize. To this effect the use of essential oil extracted from 3 aromatic plants have been investigated for the control of seed-borne fungi infecting maize seeds. These are *Cymbopogon citratus*, *Occimum gratissimum* and *Thymus vulgaris*. Bioassays using poisoning technique have been used with *Fusarium verticilloides* as reference fungi. The results disclosed the fungicidal properties of these oils. These natural products control the seed-borne inoculum of *Fusarium verticilloides* from 90% to 100%. Other fungi infecting maize seeds were also controlled. Crude powder of the plants was also investigated and proved an efficient control of fungi in seeds during laboratory and field tests. Fields trial conducted in the humid forest and the warm savannah zones of Cameroon have shown that these products are potential seed treatments which could be used as substitutes to synthetic fungicides which are usually unaffordable to resource limited farmers.