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**Phenol production in certain varieties of maize (*Zea mays*) in response to *Fusarium verticillioides* niren****Sobowale Ayodele Adegboyega, Oriyomi I L, Akanmu A O and Odebode A C**  
University of Ibadan, Nigeria

Phenols are secondary metabolites produced by plant as a defensive biochemical compounds to resist pathogen invasion. This study investigated the phenol production in five maize varieties in response to infection caused by *Fusarium verticillioides*. The maize varieties were obtained from Institute of Agricultural Research and Training (IAR&T), Nigeria. Pure culture of the pathogen which was obtained from International Institute of Tropical Agriculture (IITA), Nigeria was used to infect the five maize varieties. Planting was done in the screen house and the experiment was laid out in a Completely Randomized Design (CRD). Two inoculation methods were used where soil was infected separately before planting in the first inoculation method and maize seedlings were infected two weeks after planting in the second inoculation method. Two weeks after planting, two volumes (10 ml and 20 ml) of  $1.4 \times 10^7$  spores/ml suspension of *F. verticillioides* were used for infection. Leaves were harvested at 28, 35 and 42 days after infection and they were dried at room temperature before determination of phenol content in each variety. Data obtained on the amount of phenol were subjected to analysis of variance (ANOVA) using the GLM Procedure of SAS (version 9.3). Means were separated using the Duncan Multiple Range Test (DMRT) at  $p \leq 0.05$ . The amount of phenol produced was significantly ( $p \leq 0.05$ ) higher in maize plants infected with 10 ml and 20 ml of the pathogen suspension compared with control (0 ml). Phenol production was significantly higher in maize plants infected with 10 ml of the pathogen than that of 20 ml. Phenol production was significantly ( $p \leq 0.05$ ) higher in maize plants infected through seedling than those infected through soil. Phenol production in ART-98-SW6 was significantly higher than that produced in the other four varieties while SWAM 1-SR produced the lowest amount of phenol. The F values for model, maize varieties, inoculum volume ( $P > 0.0001$ ) and inoculation method ( $P > 0.0065$ ) were all highly significant. It may thus be said that different maize varieties of the same genus and species (*Zea mays*) respond differently to *Fusarium verticillioides* infection by producing significantly different amount of phenol. For experiments involving artificial infection, appropriate inoculation method for phenol production should be a factor to consider. A linear relationship can be said to exist between day after infection and phenol production irrespective of maize variety, inoculum volume and/or inoculation method.

delesobowale@yahoo.com

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