

Impact of climate change on the quality of fruit and Vegetables produced in South Africa

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In the past decades, climate change has become an observed and experienced reality. This phenomenon brings with it great challenges to the world. Such as threatened food security and the risk to human livelihoods. South Africa is not immune to the possible deleterious effects of climate change. Similar to the rest of the world, South Africa is experiencing increases in average annual air temperature and changes in precipitation trends. These experienced changes are projected to continue and intensify at alarming rates should factors causing climate change remain unresolved. This report goes into detail to explain the observed changes in the different regions of South Africa. Due to the interdependence of fruit production on climate, it is inevitable that climate change will affect fruit and vegetable production and quality. Therefore, this trial was conducted to establish the impact of climate change on the quality of fruit and vegetables in select provinces (Limpopo, Western Cape and Eastern Cape) of South Africa. In conducting the trial, fruit quality data was collected from various Packhouses, in the key production provinces, and from service providers, who monitor fruit maturity and quality for the different industries. The report was able to show that climate change has an effect on fruit and vegetable production and quality. With warmer and drier conditions, apples and plum tended to mature faster. Fruit was also found to be severely affected by sun burn, which could result in higher out of grade fruit and thus poor farm profitability. On citrus, rind creasing tended to increase under warmer and drier conditions. Furthermore, improved internal fruit quality may indicate the effect of climate change on tree phenology. However, with regards to postharvest fruit quality, it would seem like climate change has a positive effect. The incidence of decay and waste seemed to decrease in hot and dry conditions. The report goes at length to explain and discuss these observed quality trends. On vegetable, information was obtained from Potatoes South Africa, and the data shows that potato production may benefit from climate change. Production is projected to increase. The report gives more detail on the reason for this observation. While the report obtained empirical data on fruit quality, it also got the opinion of farmers on the problem of climate change. Farmers indicated they were aware of climate change and also expressed concern about the phenomenon going forward. Some farmers mentioned that they are already implementing climate change adaptation practices in the form of shade netting, advanced or climate smart agriculture production techniques, as well as degreening to improve fruit colour. Undoubtedly, climate change is a major concern to agricultural sector and to remain viable in the midst of unfavourable temperature and rainfall trends, it is important for the agricultural industry to adapt. The project has highlighted the need to do more research on climate change. Therefore, the PECB will continue with this research and analyse fruit quality from the orchard, throughout the value chain, until arrival in the market.