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Shade and leaf retention: an aspect of effective Coffee Leaf Rust management

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Coffee Leaf Rust (CLR) has been reported in over 50 coffee growing countries causing significant economic losses in Arabica coffee. The aim of this study was to determine the effect of shade on leaf life span in relation to severity of coffee leaf rust. To achieve this objective, three shade levels (shaded, partial shade, unshaded) were applied in three agro-ecological zones (AEZ) i.e. Upper-Midland (UM) I, II and III. Each treatment was replicated 4 times in 7 farms in each AEZ. All the farms had similar agronomic management levels. Infected leaves were counted per tree and disease severity was scored every month, between January and September, 2014 which is the peak period for CLR. Yields per plot were estimated using the method of Cilas and Descroix, 2004.

The results showed that shaded trees retained the infected leaves 8 weeks longer than the unshaded in all the agro-ecological zones. Similarly, yield estimate from the shaded coffee (1521kg/ha clean coffee) was significantly higher than the unshaded (1050kg/ha clean coffee). Although leaves remain longer on shaded trees, allowing more time for the disease to develop and progress, severity level of shaded trees remains lower (12.8%) than unshaded (19.0%), suggesting the expression of regulation mechanism under the control of shade. Moreover, full shade generated by dense canopy, such as the one from mango or avocado tree best manages CLR across all the tested three agro-ecological zones.



Left: High leaf retention under CLR infected shaded coffee Right: High leaf senescence under CLR infected unshaded coffee

Keywords: agroecological zones, Diseases, Leaf span, Severity.