

## **ABSTRACT**

The most critical periods of infection of French beans were planted at two sites--Kabete, where temperatures are cool and Naivasha, where it is warmer. They were inoculated with the rust pathogen at six different stages of growth and diseases incidence and severity progress monitored. The stages were (V2) primary leaf, (V3) first trifoliolate leaf, (V4) third trifoliolate leaf, (R5) pre-flowering, (R6) flowering and (R7) pod formation stage. total pod yield were also determined for each treatment. Results showed that the stage of infection influenced yield and the area under the disease progress curve (AUDPC). Infections spread fastest and attacked more foliage on plants inoculated at growth stage V4 (third trifoliolate) and R5 (pre-flowering). Infection increased quickly to more than 90% on many trifoliolate leaves of plants inoculated at stages V3 and R5 and defoliation followed within six to seven weeks. The area under disease progress curve (AUDPC) was over 10 units for plants inoculated before the pre-flowering stage (R5) stage as compared to 2.03 units in the protected control plants. Plants inoculated after stage R6 (flowering) did not develop infection to any significant levels. The highest yield reduction of 25.5% was realized from French beans inoculated at the third trifoliolate leaf (stage V4) while a reduction of 22.9 was realized from beans inoculated at the pre-flowering stage (R5). The study showed that infection of French beans by rust reduced yield significantly when it occurred during or after the opening of the third trifoliolate leaf and before flowering. It is recommended that chemicals to manage rust where it is prevalent should be applied at the third trifoliolate stage of growth and before flowering