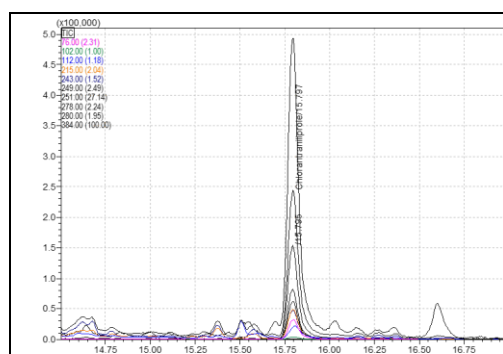


Pre Harvest Interval (waiting period) of chlorantraniliprole to produce FCV tobacco with acceptable levels of residues

Residue Field Trials (RFT) was conducted at CTRI Farm, Katheru with chlorantraniliprole 18.5 SC at (X) recommended dose (0.0055%) and (2 X) double the recommended dose (0.011) as per the CORESTA RFT protocol. The cured leaf samples pick wise were collected from each plot and the composite sample of three replications for each treatment (14) was analyzed for chlorantraniliprole residues through Gas chromatography mass spectrometry (GC-MS) single ion monitoring (SIM) method. The residues in the samples from different treatments ranged from ND (not detected) to 26.80 ppm in cured tobacco leaf samples. The highest residues of 26.80 ppm were detected in the leaf samples with a pre-harvest interval of three days from the crop that was treated with the 2 X of the recommended dose, followed by 18.72 ppm in the leaf samples with a pre-harvest interval of six days from the crop that was treated with the 2 X of the recommended dose. The residues were ND when the pre harvest interval was more than 31 days. When the pre harvest interval was 11 days in the recommended dose the residues were 4.89 ppm and in 2 X it was 7.73 ppm, at 12 days in X it was 3.64 And in 2 X it was 3.90. The studies indicate that a PHI of 12 days is required to produce FCV tobacco with acceptable levels of chlorantraniliprole residues in cured tobacco leaf.

The presence of pesticide residues in tobacco leaf will have a bearing on leaf quality, its price and hence income to the farmers. The tobacco importing countries have stringent regulations regarding pesticide residues in tobacco leaf. The importing countries and CORESTA have fixed Guidance Residue Limit (GRLs) for most of the pesticides used in tobacco. More over importing countries look for pesticide residues within GRL. Due to large surface to weight ratio, tobacco leaf is assailable for retention of excessive pesticide residues. Hence, it is important to establish pre harvest interval (PHI) especially for new generation pesticides used in tobacco. A PHI of 12 days is required to produce FCV tobacco with acceptable levels of chlorantraniliprole residues in cured tobacco leaf. The established PHI will have significance in exporting pesticide residue free tobacco.

This recommendation is useful for promoting residue management and ensure safe and rational use of the new generation pesticide, chlorantraniliprole (for management of stem borer, *Scrobipalpa heliopa* and tobacco budworm, *Helicoverpa armigera*) in tobacco. This recommendation will also help for regulatory analysis of different tobaccos which will promote the Indian tobacco exports in compliance with the acceptable levels of residues in tobacco



a Chlorantraniliprole Chromatogram



b Chlorantraniliprole 18.5 SC spray at experimental field