

Name of the technology : **New leaf chemical quality index (LCQI) for assessment and seasonal monitoring of FCV tobacco quality**

Year (s) of development : 2022 - 2023

Technology details

FCV tobacco is grown in an area of 1.39 lakh hectares in India and is a commercial product that is marketed in the national and international market under stringent quality norms which influence the Indian exports. Determination of chemical quality characters *viz.*, nicotine, reducing sugars and chloride incurred leaf grown in different regions and seasons as a key activity for assessing and comparing the leaf quality. However, comparing each quality parameter across regions and seasons over a period is complex and is a difficult task. Hence, a single index for assessment of critical quality parameters was developed as a tool to visualize the spatial and temporal dimensions of leaf quality.

The index was developed by assigning weights to quality parameters based on their contribution towards quality assessment and the weighted values of each parameter are added to get a single value and square root of the same for obtaining the index i.e. $CLQI = \sqrt{((RS/Nic * 0.8) + (CI * 0.2))}$. The range of index values is categorized into five classes. The single index-based leaf quality assessment tool assists in seasonal monitoring of the leaf quality which is essential for marketing and to obtain better price. It is the first of its kind quality-based index for monitoring the FCV tobacco leaf quality. It is a simple single index and colour coded method helps as a tool for implementing strategies for producing better quality leaf.

CLASS	INDEX RANGE	COLOUR CODE				
		1.0	1.1	1.2	1.3	1.4
Poor	1.0 -1.4					
		1.5	1.6	1.7	1.8	1.9
Medium	1.5 -1.9					
		2.0	2.1	2.2	2.3	2.4
Good	2.0 - 2.4					
		2.5	2.6	2.7	2.8	2.9
High	2.5 - 2.9					
		3.0	3.1	3.2	3.3	3.4
Very High	3.0-3.4					

Standard Chart of Quality based on CLQI in FCV tobacco

Impact of the technology

It is first of its kind quality-based index developed in FCV tobacco for monitoring the leaf quality spatially and temporally in different FCV tobacco growing regions. It is a simple and colour gradient coded method and it helps as a tool for implementing strategies for producing better quality leaf.

Publications/commercialization

- Leaf Quality Assessment of FCV Tobacco. Technical Bulletin No.: ICAR-CTRI/CC&SS/01/2023.

Investigators/Developers

L.K. Prasad, C. Chandrasekhara Rao, M. Seshu Madhav, Anindita Paul, K. Padmaja, N. Johnson and K. Veeranna