# Procedure of preparation of Cottons participating to the RTStick-20xx-a

Gourlot Jean-Paul, Cirad-LTC, revision May 02, 2024, no embargo

Update dd/mm/yyyy

Effective preparation date: dd/mm/yyyy

### 1 - Context and objective

"For a long time, the ITMF-ICCTM (International Textile Manufacturers Federation — International Committee on Cotton Testing Methods) working group on stickiness has been attempting to harmonize measurement results of existing Stickiness Measurement Methods (SMMs). Based on what has lived for other fiber measurements, the assumption is that the stickiness level of some materials would be established to serve as stickiness reference materials (RefMat). These RefMat would then be used as 'standard' (similar to ICCS or Universal HVI Calibration Cotton Standards) for checking or even calibrating instruments of each SMM in the future.

Under the auspices of the ICCTM-Stickiness working group, international round-trials (RTs) comparing a vast range of SMMs were organized in 2013-14 (Gourlot et al., 2016) and every six months from 2017 to the end of 2022 for a total of 23 RTs. In each of these RTs, eleven and then three to five cotton samples have been sent to participating laboratories so that they can test them with their SMMs and instruments and send back their results for a global comparison." Extract from Stickiness and fiber characteristics related to fiber processing efficiency and yarn quality, 2024, in Bremen International Cotton Conference, March 20-22, 2024, Bremen, Germany.

Organizing RTs requires preparing materials that have to be homogeneous enough so that each and all drawn samples from the original mass will be show similar characterization results. The following procedure describes the necessary steps that have been necessary to prepare the materials that have been used for the Round Tests on Stickiness Characterization Methods.

## 2 - Choice of participating Cottons

Rules to follow:

- Choose 5 Cottons from available stock:
- Cover a range of stickiness (provided you know the cottons beforehand), based on H2SD tests in the first instance because of the speed of measurement (col AB in tab « Orga RT »;
- Have at least 2 kg of material for preparing 55 sets of samples for each cotton;
- Fill-in tab « Orga RT » of « RT Stick CompilData et Organisation apres RT20xx-v.xlsx » file;
- Selection from past cottons if mass > 2 kg in column Y if column AC is empty (take the last valid test for each cotton otherwise the history may be misleading), or from the list of cottons in rows >71;
- Choice of Cottons from the list with a new Cotton from time to time to avoid a clear break between generations of Cottons feeding the test (for RF or RCK corrections, especially for extremes in the measurement range ...):
- To summarize and decide, fill-in the following table à each RT (example given for RT20xx-a to be emptied to start new RT):

Ongoing RT	GlobalCottonID	Stickiness value	Remaining mass	Last RT when used	Final Choice	Cotton nickname in the ongoing RT	
20xx-a	List of exhausted materials for traceability here:						
Below: list of potential materials to be part to the next RT + final choice by choosing their nickname:							
	Cxx						
	Cxx						
	Cxx						
	Cxx						
	Cxx						
	Cxx		_				

#### 3 - Preparation of work

- Select Cxx and complete the stock management table (here "RT\_Stick\_CompilData and Organisation\_aaaammjj.xlsx").
- Check the potential number of participating LabIDs. This usually corresponds to 55 sets of 5 cottons in each set.
- See "Expedition Breme 20xx-axlsx" for breakdown of samples planned, sent, etc.
- Define a timetable for carrying out the test, from preparing the cottons to submitting the reports.

#### 4 - Preparation of Cottons

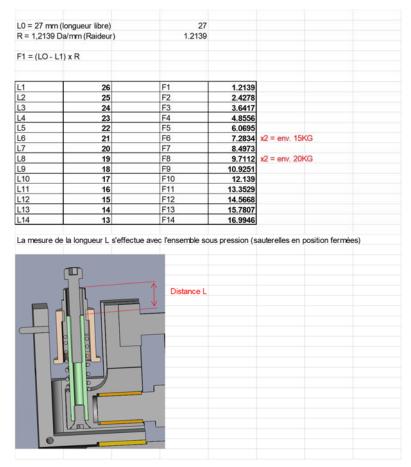
- Use 5 boxes labelled A to E.
- Take 27 grams (+/-0.2) per CXX from the stock, CXX by CXX, for each of the 5 CXX. The following table indicates that 27g is the optimum mass of each Cotton so that the lot's envelope containing five Cotton's envelopes is not higher than 199g for delivery cost reasons in Germany.

Masse pour 5 cotons pour ne pas dépasser 200g/lab				
Masse enveloppe	7.5			
Masse par coton	27			
Etiquette/coton	0.8			
Nb cotons	5			
Masse enveloppe/lot	20			
Total	196.5			

- If needed, fill-in the RefMat management file.
- Print labels with "202x-a Etiquettes Z" files (example given at the end of this procedure).
- Prepare 5 piles (one per CXX) of n Cotton's envelopes (n=nb sets to be prepared).
- Mix/homogenize the CXX one by one with the CSITC opening machine, in masses of approx. 250 grams to be placed on a large table in successive layers to ensure an additional mixing. Take masses of 27 grams per CXX across the layout on the table, bag them and close the cotton's envelope with the corresponding printed label until you reach the expected number of sets (possible work in 2 stages, opening and bagging first, and then labeling to close the Cotton's envelopes).
- In Bremen, put one of each of the 5 Cotton's envelopes into a lot's envelope (called set of Cottons A to E) to be sent to one LabID.

<u>Approximate time required for 55 sets of 5 cottons</u>: between 4 and 5 days, depending on how easy it is to open the cottons on the mixing machine with only one person, otherwise 2 long days with another person to help, packages ready to leave for Bremen.

# On the mixing machine, prototype machine in Cirad, distances L to fix a given pressure between drafting rolls:



Below: example of labels per cotton.

ITMF International Round-Tests for Stickiness Methods

ITMF International Round-Tests for Stickiness Methods

Round Test reference: 20xx-a Round Test reference: 20xx-a

Sample Id.: Cotton A Sample Id.: Cotton A

ITMF International Round-Tests for Stickiness Methods

ITMF International Round-Tests for Stickiness Methods

Round Test reference: 20xx-a Round Test reference: 20xx-a

Sample Id.: Cotton A Sample Id.: Cotton A

ITMF International Round-Tests for Stickiness Methods

ITMF International Round-Tests for Stickiness Methods

Round Test reference: 20xx-a Round Test reference: 20xx-a

Sample Id.: Cotton A Sample Id.: Cotton A

ITMF International Round-Tests for Stickiness Methods

ITMF International Round-Tests for Stickiness Methods

Round Test reference: 20xx-a Round Test reference: 20xx-a

Sample Id.: Cotton A Sample Id.: Cotton A