

GROUND RAW TOBACCO AND CIGARETTE FILLER REFERENCE PRODUCTS

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ABSTRACT

The Center for Tobacco Reference Products (CTRP) of the College of Agriculture, Food and Environment at the University of Kentucky has a long history of providing reference cigarettes and smokeless tobacco products to investigators. We have added to this portfolio six new products of ground raw tobacco from different types of tobacco leaves which include flue-cured, burley, oriental, dark air-cured, high TSNA dark air-cured and dark-fired cured tobacco. These are in addition to the ground filler tobacco for 1R5F and 1R6F reference cigarettes. The reference values, not certified values, of individual alkaloids, TSNAs and moisture for each type of tobacco are presented in this poster.

INTRODUCTION

Reference materials have very important roles in method development and the evaluation of the accuracy of analytical procedures. They can be used as laboratory references in collaborative and proficiency studies. For method development, sometimes it is necessary for the reference materials to have a wide range of constituents of interest. In order to meet the analytical requirements, CTRP have produced six new types of powdered tobacco leaves which cover a range of nicotine levels from 5 – 44 mg g⁻¹. Each of the six new products is from one leaf grade sample of approximately 200 lbs.

MATERIALS

Tobacco used in this study includes flue-cured, burley, oriental, dark air-cured, high TSNA dark air-cured and dark fired-cured tobacco.

Ground 1R5F and 1R6F filler: The two filler products include the tobacco blends and expanded tobaccos and reconstituted sheet used in the manufacture of the respective reference cigarettes. 1R5F contains added glycerine and invert sugar, whereas 1R6F contains isosweet, glycerin and propylene glycol.



Figure 1: Straight grade threshed leaf

PROCEDURE

Each type of tobacco leaf of approximately 200 lbs (Figure 1) was ground to pass a 1 mm screen and conditioned to obtain final moisture level of 12 -13% in a rotary tumbler (Figure 2). Tobacco was mixed for more than one week to get homogenous samples. After mixing, samples are stored at -20°C and are available as 50 g unit in sealed polypropylene bottles (Figure 3). All samples are stored in air-tight buckets (Figure 4) at -20°C.

These samples are not certified for constituents, but the individual alkaloids, TSNA's and moisture have been measured on different replicates from individual buckets of about equal amount of tobacco (20 lbs). Data for all these ground reference tobacco products (Table 1) were measured in a single lab. They are only reference values, not certified. For more information, please go to CTRP website: <https://ctrp.uky.edu>



Figure 2: Rotary tumbler



Figure 4: Storage bucket



Figure 3: Reference products

Table: Reference values of reference products

Name	Nicotine	NNN	NNK	Moisture
	mg g ⁻¹	µg g ⁻¹	µg g ⁻¹	%
1R6F filler	18.91 ± 0.53	2.38 ± 0.24	0.58 ± 0.05	12.2 ± 0.2
1R5F filler	14.40 ± 0.23	3.24 ± 0.36	0.80 ± 0.15	12.6 ± 0.2
Dark air-cured	44.16 ± 0.86	3.26 ± 0.32	1.89 ± 0.37	12.5 ± 0.3
Dark fire-cured	35.49 ± 0.48	2.03 ± 0.07	0.44 ± 0.06	12.6 ± 0.1
Burley	33.95 ± 0.96	5.18 ± 0.08	0.58 ± 0.05	12.3 ± 0.3
High TSNA dark air-cured	28.28 ± 0.24	7.01 ± 0.14	0.93 ± 0.05	12.6 ± 0.2
Flue-cured	25.36 ± 0.51	0.10 ± 0.01	0.07 ± 0.02	12.5 ± 0.1
Oriental	5.27 ± 0.11	0.05 ± 0.01	<LOQ	12.3 ± 0.2

CONCLUSION

University of Kentucky CTRP have produced six new products of ground raw tobacco from different types of tobacco, as well as the ground filler tobacco for 1R5F and 1R6F reference cigarettes. These homogenous reference tobacco products cover wide ranges of nicotine and TSNA levels. The information is available on the CTRP website.

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