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DBN/JJ/6A

28th July, 1988

Short Stem Shredding

I enclose the results of the stem shredding exercise we carried out using short stems from Le Mans. The two stem types used were Korean - KAVR which were very short and thin and Brazilian - BAVR which were overall much longer and to a certain extent, fatter.

The stems were conditioned in the 3 compartment cylinder to a target moisture of 45%. After a short bulking period they were shredded in the Bauer Mill at a flow rate of 1000kg/hr, gap setting of 0.100" and rotor speed of 1100rpm. Load current for the KAVR was 250 - 300 amps but for BAVR was higher at 400 amps.

The two shredded stem types were both dried in the Hambro Fluid Bed dryer with bed temperatures of 95°, 85° and 80°C respectively. The material was classified on the Hambro Elutriator.

Results

The results are shown in Tables 1 - 4. From Table 1 it can be seen that target moisture contents for the stem conditioning were not achieved which would explain the higher than normal load on the mill.

The fill value of the Korean stem was significantly higher than that for the Brazilian. The Brazilian fill value was equivalent to normal WTS and the Korean gave a very good figure.

The classification figures (Table 2) confirm that there are virtually no large particles present in short stem when shredded. The dust figures are higher than normal which will be due, in part, to the low shredding moisture.

There was virtually no difference in particle size between the two shredded stems.

These tests confirmed that a very useful product can be produced from the short stem. We have retained the bulk of the material so that further work could be carried out to incorporate the material into blends for smoke tests etc. Short stem shredding will be incorporated into the final Liverpool shredding run which should take place in early August. I suggest we have a talk about the progression to the next stage of the exercise before this takes place.

D.B. NAYLOR

cc. Mr. R.W. Hedge.
Mr. J.N. Stevens, Woking.

BATUKE SHORT STEM

Tabel 1 - Process Moisture Content (%)

Stem Type	Exit Bin	Exit Mill	Final Product	Heavies
Korean KAVR	43.12	35.16	11.87	34.73
Brazilian BAVR	42.88	38.18	13.65	22.85

Table 2 - Corrected Fill Value (13.5%) (cc/10g)

Stem Type	Exit Mill	Final Product
KAVR	61.1	61.1
BAVR	56.7	53.6

Table 3 - Classification (%)

Stem Type	Final Product	Heavies	Dust
KAVR	89.4	0.3	10.3
BAVR	92.0	0.3	7.7

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Table 4 - Sieve Analysis

Stem Type	Sieve Analysis %						Median Aperture mm
	On 2.0mm	On 1.4mm	On 1.0mm	On 0.7mm	On 0.5mm	Thro 0.5mm	
KAVR	18.9	16.3	10.9	17.8	9.1	28.1	1.08
BAVR	19.3	15.4	10.3	20.3	11.6	23.1	1.09