

LETTERS TO THE EDITOR

SOME OBSERVATIONS ON WITHERING WITH WILKEN - WOODS TROUGH - WITHERING APPARATUS

The writers have been able to carry out a large number of withering tests with a Wilken-Woods trough-withering apparatus, and a holding box or storage bin, through the good offices of the Director of the T.R.I., and the Management of Messrs Walker Sons & Co., Ltd. The following comments on our experience may prove of interest to readers.

1. Housing of the Troughs

- (1) An unhampered air supply is necessary for the heat exchanger and the trough fans.
- (2) Above the trough more than 6 ft of air space is necessary, with generous provision to permit the air filtered through the leaf to escape without being drawn back by the fans.
- (3) If the troughs are sunk into the floor to a depth of 18 inches, easier working is possible. The end doors will need repositioning.
- (4) Easy carriage from the troughs to roller-charging chutes will save much labour.

2. Operating the Troughs

- (1) The working of the trough depends on the maintenance of air pressure below the hessian sheet.
- (2) The hessian sheet must be fastened so as to allow leaf removal into the required alley way. A system of small sheets to be lifted as bundles might be an improvement.
- (3) A wire or nylon net basket to hold about 4 lbs of green leaf is required in each trough. The basket of leaf can be lifted out periodically to test the degree of wither. When filled, the leaf in the basket must be to the same depth as the bulk of leaf in the trough.
- (4) A thermometer may be of use inside the trough until the most suitable size of burner nozzle has been selected. ($2\frac{1}{2}$ gals. fuel per hour at Haputale).
- (5) Before leaf is spread it is very important that the hessian be bedded down on the sides, failing which the air will rush out and uneven pressure develop.
- (6) Leaf must be spread evenly, particularly after it has been turned (after about 5 hours), otherwise air funnels are created which will result in a loss of pressure and uneven withering.

- (7) The most satisfactory withers seem to be obtained in 9 or 10 hours with the heat exchanger working for 6 or 7 hours depending on surface moisture and the ambient air condition.
- (8) The trough fans must never be stopped when leaf is in the troughs. Stewing and discolouration start very quickly once the air flow ceases.

3. The Holding Box or Storage Bin:

The holding box is slightly larger than a single trough, but allows for spreading leaf to double the depth. The advantage of this box is that it doubles the work capacity of the trough unit, by enabling the charging of the unit twice per day without necessitating the shortening of the withering period. It also facilitates the fitting of the trough-withered leaf into the normal manufacturing programme.

There is a fan at one end which blows air under the jute hessian at a gentler pressure than in the troughs. Various experiments were done with the holding box such as:

- (1) holding green leaf in the box until the charge in the trough-withering unit had been taken to the rollers;
- (2) partial withering in the trough unit after which the leaf was taken to the holding box and kept there until it was ready to be included in the rolling programme.

On Haputale, the first method was found preferable. The method chosen will affect the siting of the box in relation to the withering unit and the rollers.

Green leaf can be kept for a considerable time in this box and in one experiment was kept as long as 25 hours. Again careful attention must be paid to leaf spreading and the fan must be kept going while leaf is in the box.

It is hoped that the above few facts may be useful to any estate setting up a trough-withering unit. No figures of results have been given as these may prove misleading, conditions being variable on different estates.

A. R. CATHCART

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