

TEA MANUFACTURE

PART I. QUICK WITHERING.

by

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Before starting on this paper on quick withering there are two points I would like to make clear. One is that I am not yet, at any rate, an expert on my subject. I have been working consistently and practically at it for nearly two years but do not feel competent as yet to lay down the law. I can only tell you briefly what I have done to-date, give you some of my opinions for what they are worth and rather leave you to draw your own conclusions. My second point is this. We all know that there is nothing new under the sun and quick withering is no exception. I think I am correct in saying that the principle was tried out as long as fifty years ago.

I shall refer hereafter to normal and quick teas for want of better terms. Normal teas are those made from leaf withered by means of tats and quick teas are those made from leaf withered by means of the withering machine.

The machine I have been using known as the Benison Colombo Commercial Company Withering Unit, consists of a drum mounted on a central shaft, a cased fan which delivers air to the longitudinal section of the drum through an expansion piece and a vertical circular trunk coupled to the suction eye of the fan. This particular machine can deal with 750 lbs. of green leaf at a time. The leaf is loaded into the drum which is made of wire mesh of about No. 4 size and which revolves at 6 r.p.m. Heated air is drawn through the vertical trunk from the exhausts of two tea driers situated immediately below the machine and is then passed through the expansion piece and over the leaf. The fan speed is 365 r.p.m., approximately 12,000 cubic feet of heated air are required per minute and 4.4 h.p. are needed to operate the machine.

It was obvious from the beginning that obtaining the heated air from the drier exhausts was not going to prove satisfactory. It is impossible by this means to procure air of a constant temperature unless it can be arranged that withering shall be done at a time when no firing of teas is in progress. Temperatures of heated air before passing over the leaf can be obtained as high as 135°F. but once firing of teas commences the temperature will drop down to 100°F. or lower. At 135°F. I have obtained withers in under two hours, but at 95°F.—100°F. it takes anything up to four hours or a little longer. Efforts are being made now to develop a furnace capable of supplying heated air to machines of this type at a reasonable cost. Something in the nature of the type of furnace used in the direct firing of teas is envisaged. Given the necessary heated air at a sufficiently high temperature there is nothing to prevent leaf being withered consistently in two hours. This

being the case, and given sufficient machines, there is no reason why factories should not be run entirely with these machines subject, possibly to slight staggering in times of withering leaf so that the output of withered leaf would be commensurate with roller and drier capacities. I do not think it would be out of place to mention here that withering quickly at high temperatures appears, as far as my experience goes, to have no adverse effect on the finished teas.

In the event of a factory being equipped with withering machinery instead of tats the question arises what would be done with the final batch of leaf that must come into the factory between 5 p.m. and 6 p.m.? If it is considered undesirable to continue manufacture at night, the evening leaf may be spread thickly in a cool place and carried over till morning. Many batches of leaf have been so treated in my factory. So far tea made from leaf treated in this way has held its own very well in comparison with leaf withered direct from the field or even withered in the orthodox manner. I must admit, however, that on occasions the results of this type of treatment have been a little disappointing. I have recently been given to understand that I had been spreading too thickly the leaf retained over-night. For the last month I have been spreading it far more thinly (about 6 inches) and am expecting better results. I have despatched an invoice to Colombo manufactured in this way but it is not due to be sold till the week after next.

During nearly two years work over 400 separate batches of leaf have been manufactured and results have been both interesting and encouraging. For the first year I confined myself to sending samples of individual experiments or samples of several experiments bulked together for reports and valuations. All samples were, and are, sent to Brokers in Colombo and London under code numbers and tasted "blind." Each batch of samples has included some of normal teas for purposes of comparison. At first results were most discouraging as normal teas were given preference with almost monotonous regularity. This was understandable as for some time I did not really understand the machine and, amongst other mistakes, wither percentages varied alarmingly. In addition I think most of you will agree that the value of samples of individual experiments of any kind is not very considerable. However, as time went on and I became more conversant with the machine there was a gradual trend in favour of quick teas. Since February this year quick teas have been sold on the Colombo market. Comparative invoices of normal and quick teas have been despatched at the same time and sold in the same catalogue. So far I have confined myself to making only B.O.P. by means of the withering machine as it takes too long to collect sufficient of other grades of which I only make small percentages. Up-to-date the average price I have obtained for normal teas has been Rs. 2/68½ per lb. and for quick teas Rs. 2/66½ per lb. (I am only referring here to the comparative invoices). From February to July I averaged a better price for quick teas (one invoice fetching as much as 13 cents per pound more than its normal counterpart) but during July, August and September they showed a decline. This latter period is the time during which we make quality teas in Uva where my factory is situated. One school of thought is that the rather drastic treatment to which the leaf is submitted in the withering machine may destroy some quality in good teas and bring out some quality which poorer teas lack. There would appear to be some foundation for this theory as the quick teas have been on the upward grade again since September, one invoice beating its normal competitor by the comfortable margin of 13 cents per lb. If that upward tendency is maintained from now until February the quick teas will probably average a better price over the twelve months than the normal teas. If this turns out to be the case I consider that the principle of quick withering can be said to be proved. It will then be up to experts to devise machines better than the one I am using now and to bring out furnaces capable of giving economically the required amount of heated air. Suppose on the other hand that quick teas prove about equal to normal teas. The

Question then is what benefits are to be gained by giving up the orthodox method of withering? I do not anticipate that the cost of running withering machines fitted with individual furnaces would show any appreciable saving on normal withering costs, in fact it might run out a little dearer. Where savings would be effected would be in original factory construction, insurance premia on such factories, tat renewals (no small item at present), factory painting and upkeep, etc. I also envisage a machine such as the one in my factory being a most suitable substitute for an extra bay or bays required for an existing factory.

Just one word about the appearance of quick withered teas. I do not think it comes up to that of normal teas being inclined to be a little "choppy" and rather less black. This difference, however, is not sufficiently great to call forth adverse comment from the Brokers. The appearance of the withered leaf when discharged from the drum is nothing short of appalling when judged by normal standards. After 5 minutes in the roller the leaf reverts to normal as far as appearance is concerned and dhool percentages, etc., work out almost exactly the same as in orthodox manufacture.

That in a nutshell is my experience of quick withering.
