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EXPLOITATION OF HIGH PANEL

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Workshop on the latest trends in Exploitation, Processing and Marke

The criterion for fixing the height of opening of the base panel is the visibility of the tapping cut to the tapper. Hence it is related to the height of the tapper. The height of opening is fixed at 125cm from the bud union (bud union to right end of cut-125cm). Main stem above the base panel is called high panel. Length of the high panel depends on the height of branching. Usually high panels are exploited during slaughter tapping for a period of 1-2 years before cutting the trees for replanting in the plantation.

During slaughter tapping, latex is drawn from one or more cuts in the high panels. Frequency of tapping and stimulation schedules are response based. The tapping is somewhat uncontrolled. There is very little regulation of bark consumption.

However, there are situations where it becomes essential to exploit the high panels for longer duration.

SITUATIONS UNDER WHICH EXPLOITATION OF HIGH PANELS FOR LONGER PERIOD IS SOUGHT

Usually exploitation of high panel is considered only after completion of the exploitation of virgin bark in the base panels.

I. Low and uneconomic yield from renewed bark, genetic factor,. Poor bark thickness-regeneration.

II. Damaged renewed bark - Heavy wounding, Disease, brown bast.

III. Longer exploitation of double cuts-Estate practice.

Upward tapping and downward tapping of high panel was considered. Half spiral and half V cuts were also compared. Various problems were encountered in the upward tapping and downward tapping of 1/2 V cuts using ladder became popular, though production from the latter was lower.

REASONS FOR ABANDONING UPWARD TAPPING OF SPIRAL CUTS WITH LONG HANDLED KNIFE

- Absence of a suitable knife
- Severe wounding
- Profuse spillage
- High rate of bark consumption
- Difficulties in maintaining proper angle
- Lack of sufficient information on stimulated tapping of shorter cuts
- Physical strain to tapper
- Sun glare

ADVANTAGE AND DISADVANTAGES LADDER TAPPING OF 1/2 V CUTS

1/2 V cut is opened at a height of around 2.6M above the bud union. Steel ladder with a platform on the top is the most convenient one for tapping operations. It is durable also.

ADVANTAGES

- Bark consumption is controlled sot that exploitation is possible for 8 or more years.
- Spillage is minimum
- No problem of sun glare in India

DISADVANTAGES

- Ladder is heavy (5-7Kg) and often it has to be carried twice to every tree. Task size is reduced. It is more so in difficult terrains.
- Considerable reduction in yield as the tapping cut approaches the renewed bark of the lower panel due to bark island effect.
- When two cuts are tapped, it is necessary to be at least 112cm apart to avoid overlapping of drainage areas.
- Response to stimulation is also low when the drainage area is limiting.

In India also downward tapping of 1/2 V cut is popular. Upward tapping of spiral cuts are done only during slaughter tapping.

RENEWED INTEREST ON CUT

During 70's and 80's renewed interest was generated in upward tapping of spiral cuts. Modified jebong and gouge knives with long handles were introduced.

1. The modified gouge knife was found more suitable
   - ➡ Less bark consumption
   - ➡ Less spillage
   - ➡ Less strain
   - ➡ Tapper can stand near the tree
2. Tappers were trained more scientifically and were not allowed to raise the hands above the shoulder. Raising of hands was major reason for strain.
3. Angle of cut was increased to 40-45°.
4. Stimulated tapping of short cuts-increased task and duration of exploitation.

The system is termed controlled upward tapping (CUT) and is becoming popular among small holders and estates in Malaysia.

In India, for longer exploitation of high panel even now downward tapping of 1/2 V cut is practiced. Use of long handled jebong knife is recommended for slaughter tapping where a 1/2 S cut is tapped upward simultaneously with the exploitation of the lower panel.

CONTROLLED UPWARD TAPPING

Features

1. High panel starts from the opening height of base panel.
2. Angle of tapping cut is 40-45°
3. One panel is exploited for two years. - bark consumption rate increases with increasing height of tapping cut.
4. In the continuous panel, first year bark consumption rate is around 3cm/month. In the second year it is around 4cm/month-
5. Long handled modified gouge knife (with 30° bent) is found more suitable than long handled jebong knife. Length of handle is 120 cm in first year and 180 cm in the second year.
6. Tappers have to be given special training. While tapping the legs are abducted so that the heels are two foot lengths apart. The left hand holds the pole gently and the hand position is at or just below shoulder level. The right arm makes active movements. The right hand/ is not raised above the elbow. Avoiding of raising hands above shoulder level reduces muscular stress considerably. A thorough medical study is however needed.
7. When compared to 30° cut, length of the tapping cut is 20% more when the angle of cut is 45°. For 1/2 S cuts the task can be 90% of normal task. For shorter cuts it can be same as the normal task. For double cuts with short upper cut and 1/2 S lower cut the task can be at least 70%.
8. Good yield is obtained from shorter cuts with stimulation. It can be with 1/3 S or 1/4 S depending on the expected duration of exploitation of high panel. With shorter cuts tapping is more perfect i.e. better regulation of bark consumption, angle, depth etc.
9. Good yield is obtained at least for 6 years. With reduced frequency of tapping the duration can be increased to 9-10 years. First year yield is usually high.
10. Assisted collection/delayed collection is sometimes needed.

In Malaysia wintering period is prolonged and hence glare of sunlight hinders upward tapping with long handled knife. Because of this periodic panel change is done. For three months upper panel is rested and tapping is done in the lower panel.

EFFORTS TO ADOPT CUT IN INDIA

The modified gouge developed by RRIM was fabricated at RRII in 1990. It was found more convenient than long handled jebong knife. Eight tappers were given training. All, but one could use it successfully. Separate template, scrapper, guideline marker etc. were also fabricated. An experiment comprising of 6 tapping systems involving upper cuts and one

normal tapping system was started in CES on clone RRIM 600 (panel B1 - 1 last year). There are 90 trees in each plot with three replicates per treatment.

PROBLEMS WITH HALF SPIRAL UPPER CUT

1. Length of the tapping cut is 20% more.
2. Maximum possible exploitation period is short.
   - back end of the cut is too much above the front end and hence branching point is reached earlier.
3. Regulation of slope, bark consumption, depth etc. is difficult.
4. Front end of the upper cut has to be considerably above the back end of the lower cut when the two are on opposite sides.

PROBLEMS OF RAINGUARDING IN CUT

There is no recommendation for rainguarding in CUT. In Malaysia in the major rubber growing areas rainguarding is not done even for the lower cut.

Tapping shade was considered. In case of high cut the distance b between shade and the support cut and cup is too far to give any meaningful protection. Chances of damaging the shade by knife is more. Very large tapping shades are needed.

Use of skirt type of rainguards using polythene sheet has the following major disadvantages.

1. Lifting of the polythene sheet.
2. Large quantity of polythene is needed to cover the support cut and cups.

To solve the problem of lifting a rainguard lifter made of aluminium was designed and fabricated. This is now being tested. The lifter weighs only 450gm.

To reduce polythene requirement a second support channel was given. This has to be combined with panel change. If exploitation of high panel starts in March, the second support channel only in subsequent panels. Vertical bands of virgin bark also have to be left for guiding latex flow. Panel changes does not reduce yield (result from other experiments). Width of the polythene need be only 60 cm.

In the case of double cuts, when upper cut is I/3 S or I/4 S position of first high panel and reason for begining high panel exploitation will depend on the panel and position of tapping cut in the base.

A. Weighting of ladder = 5 — 7kg.
B. " knife = 0.75 kg.
C. " rainguard lifter = 0.45 kg.

B + C = 1.2 kg. (6 months)
B = 0.75 (6 months)

CONCLUSIONS

1. Considerable increase in yield (=50%) can be expected from the high panels when compared to yield from the renewed bark of the base panels (low yielding cases).
2. CUT can be recommended under different situations for different periods.
3. For small holdings tapping rest of the upper cut during rainy season can be advised now.
4. For estates suitability of rainguard lifter, panel change etc. have to be evaluated further.
5. Upward tapping of spiral cuts using ladder might become a practice in the estates if rainguard lifter fails. Requirement of polythene can still be reduced by introducing support cuts. Panel change would not be needed.
6. In Clone RRII 105 employing CUT might become necessary in the near future if high yield is to be maintained.
7. Steps have to be taken from now itself to popularise the method.
8. Recommendation on branching height has to be reviewed with a view to exploit the high panel.
9. More onfarm trail to be started.