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Research Article

SALT AND MINERAL LICKING BLOCK (SMLB) TECHNOLOGY TO ATTRACT MITHUN IN ONE SPOT AS A DRUDGERY REDUCTION INTERVENTION FOR MITHUN REARING FAMERS OF ANJAW DISTRICT (A.P)

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SMLB is a permanent concrete structure, composed of two layers, Base and Apex:

ABSTRACT

Salt and mineral licking block (SMLB) technology is developed based on drudgery reduction intervention for mithun rearing famers of Anjaw District, Arunachal Pradesh. SMLB is a permanent concrete structure, composed of two layers, Base and Apex: The base part of SMLB, 2 ft above the ground level are compose of sand, cement and stone gravels in 4:1:2 ratio respectively. The apex parts of SMLB, 0.4 ft are composed of Salt, Mineral Mixture, Cement and Fine Sand in 1:0.05:1:3 ratios respectively. SMLB is constructed at strategic location most preferably plain area, with aim to attract mithun in order to assemble them in one spot for easy monitoring by owners, thereby reducing the workload of most tedious and tiresome part in mithun husbandry system in traditional method. SMLB intervention reduces the monitoring workload by 4-5 hours per visit by owner in jungle and 1.5 man-day labour involvement per month compare to traditional system of monitoring mithun. It also facilitates easy monitoring digitally through CCTV camera and act as a recreational spot, Eco-tourism purpose as mithun viewpoint to earn extra revenue and even woman and children can participate in monitoring mithun, which was a dream distant in traditional method of mithun production system in tribal society of Arunachal Pradesh, India.

INTRODUCTION

Mithun are consider as most blessed animal in Mishmi society, they are used for bridal price during marriage ceremony, as a sacred animal for scarification in rituals and as a last rite Animal to honour the departed soul to rest in peace. Mithun are reared under semi-domesticated system, they let loose to roam in jungle freely. However, owner has to visit in jungle frequently twice or thrice (3) a month to monitor the presence of their Mithun in jungle and to know the health status of animal. Monitoring mithun in jungle is one of the most tedious and tiresome job in mithun husbandry, due to which till date women and children cannot involve in Mithun husbandry. It has been observed that only salt is the only component used as a barter of instrument to keep in touch with mithun and owner. It is normally practices that, once mithun are spotted in jungle, owner have to feed handful of salt and mithun have very high affinity towards salt licking. Considering, salt as a corner stone in the traditional method of mithun production system. Salt & Mineral licking block (SMLB) concept have developed based on drudgery reduction in traditional method of mithun production system, thereby establishing a permanent structure of SMLB at certain strategic location, so that mithun are attracted and come to lick the SMLB regularly and monitoring workload of owners are mitigated. Because once the mithun sensitize, for the presence of salt in SMLB, they will regularly visit the spot to quench their salt hunger. So, Mithun owner have to visit in SMLB spot to find their mithun and even women and children can take part in mithun husbandry. As a result, there is drudgery reduction in tracking mithun in jungle, thereby facilitating easy method of monitoring mithun under free-range system of mithun husbandry.

MATERIAL AND METHODS

Material Required

I. Ingredients required
1. Common salt
2. Mineral Mixture
3. Cement
4. Sand
a. Fine sand

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b. Coarse sand
5. Stone gravels
6. Cart/wood

Proportion of Ingredients

1. Apex (Top) part, 0.4 ft of different ingredients in ratio: Salt: Cement: Sand: Mineral Mixture (1:1:3:0.05)
2. Base (Bottom) part, 2.4ft different ingredients in ratio Sand: Cement: Stone gravels (4:1:2)

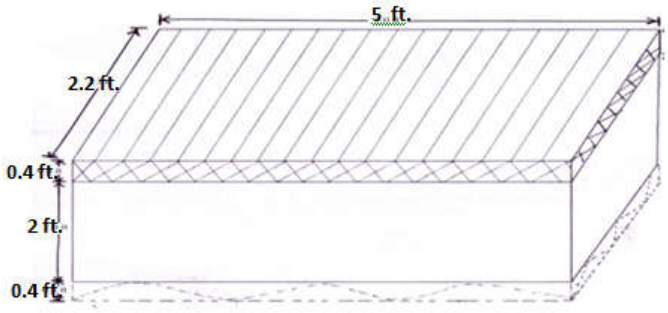

Fig A Standard size of SMLB (5x 2.2 x 2.8) ft.

Standard Size

LxBxH (5x 2.2 x 2.8) ft.

Quantity Required

Cement = 6 bags
Salt = 60 kg
Sand = 23 bags
Stone gravels = 10 bags

Amounts Required

Cement = @ Rs 500/bag = 6x 500 = Rs 3000.00
Salt = @ Rs 10/ kg = 60x 10 = Rs 600.00
Sand & Stone gravels= 23 + 10 bags = Rs 2400.00

Total= 6,000.00

METHODOLOGY

Area Selection

Plain area preferable with natural shed and available drinking water source nearby

Process of Making

1. Clearing and measurement of area for earth cutting (Fig.1)
2. Earth cutting 0.4 ft to prevent the tilting and cracking of SMLB (Fig.2)
3. Prepare wooden box of required size (5X 2.2 X 2.8 ft) using measuring tape (Fig.3).
4. Give support to wodden box using locally available wooden material to prevent the breakage of wooden box by the presure wetight of cemcent and other ingridents (Fig.4).
5. Mix Sand, Cement and Stone gravel. Pour water in the middle of mixture making local pond and keep it for 1 hour then mix the ingredient thoroughly, with spade and shovel (Fig.5).
6. Transfer the mixture into the fixed wooden box placed in dig pit, with simultaneous pocking the mixture with blunt wood for evenly distributions of mixture and to prevent the creation of vacuum space (Fig.6).
7. Prepare another mixture using Salt, Mineral Mixture, Cement and Fine Sand at ratio (1:0.05:1:3) and mix the ingredients properly using spade for better spreading of ingredient at optimum proportion for better result before mixing with water (Fig.7).
8. Transfer the mixture into the same wooden box, on top of already filled with cement, sand and stone gravels to make it 4 inches thickness above the base of supporting structure (Fig.8).
9. Level it properly using flate wooden material for better licking of Mithun (Fig.9)
10. Keep it without disturbing for 7 days for proper setting of cements and other ingredients (Fig.10).
11. Open the wooden box after 7 days and evenly spread few amount of salt on the surface of SMLB at first to sensitize the animal about presence of salt in SMLB. Once the mithun get salt taste on licking the block, they develop acquired imprint character to visit the spot on regular interval to quench their salt hunger (Fig.11).

Fig 1 Clearing and measurement of area for earth cutting

Fig 2 Earth cutting 0.4 ft

Fig 3 Measuring wooden box of size (5X 2.2 X 2.8 ft)

Fig 4 Give support to wodden box with locally available wooden material

Fig 5 Mix sand, cement and stone gravel, in ratio 4:1:2 respectivly

Fig 6 Transfer the mixture into the fixed wooden box & fill up to 2.4ft

Fig 7 Preparing mixture of Salt, Mineral Mixture, Cement and Fine Sand in ratio (1:0.05:1:3)

Fig 8 Transfer the mixture into the same wooden box to make it 0.4 ft thickness above the base of supporting structure

Fig 9 Level it properly using flate wooden material for better licking for Mithun

Fig 10 Keep it without disturbing for 7 days for proper setting of cements and other ingredients

Fig 11 Open of wooden box after 7 days

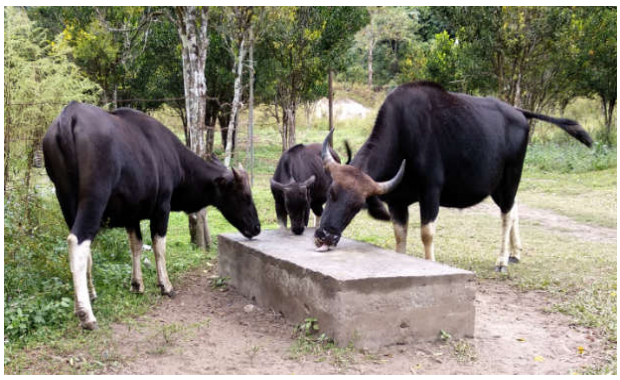

Fig 12 Mithun enjoying Salt & Mineral licking on SMLB

RESULT AND DISCUSSION

Frequency of monitoring by owner

Monitoring mithun in jungle is the most difficult task in whole mithun production system, becouse mithuns are let loose free to roam in jungle until they are required for paying bridal price, ritual scarification and barter purpose. In traditional method

owner have to track their mithiun in jungle maximum of three to four (3-4) visits every month in jungle to ascertain the presence of their mithun and to monitor health related status. Therefore, sometime in-betweens the visits, if mithun get some infection, they succumb to disease, due to limited visit per month. So, more often visit is very necessary for successful production of healthy mithun. However, through SMLB technology intervention, owner can easily monitor their mithun more than 8 times in a month due to easy access within a walk able distance of 30-40 minutes by just visiting at SMLB spot, without much searching their animal here and there in jungle.

Time required in tracking mithun in Jungle

On an average 5.5 hours/visit, owner spend in tracking their mithun in jungle, as mithun travel in length and breadth of jungle in search of fodder and grazing ground. However, in SMLB intervention, within a foot mach stretch of thirty to forty (30-40) minutes at suitable locations SMLB are constructed. Therefore, within half hour to one hour is required in tracking their mithun. As a result, 4 – 5 hours is saved per visit and mithun farmers can utilize this time in other productive work.

Man day labour involvement

Considering avg. 5.5 hours spending in tracking or monitoring mithun in jungle and three in a month which is amounting to 16.5 hours i,e 2 days (8 hours= 1day as a thumb rule). So, two (2) days in a month is spending in local system of mithun production system, that means man day labour per day is Rs 400 at current scenario in Anjaw district. Therefore, every mithun farmer per month spends Rs 800. After SMLB technology intervention, half to one hour is required for monitoring their mithun and visiting is made more frequent 8 times a month. However, only 4 hours i.e half day (8 hours= 1day as a thumb rule) is spent in monitoring by visiting on SMLB spot at an Rs 400 per month. Therefore, Rs 400 is saved per month in SMLB technology intervention compare to traditional hand feeding salt system of mithun production.

Number of mithun visit for licking salt

In traditional hand feeding salt system of mithun production only one to two mithun can be fed at a time, due to small space of hand for licking. However, in SMLB technique more than 8-12 mithun can lick salt depend on size of the SMLB. 2.2ft X 5 ft can accommodate 5-6 adult mithun at a time.

Involvement of women and children

In traditional system of mithun production, so far no women and children are involved. Because monitoring or tracking mithun in jungle is not easy task, one have to travel length and breadth of jungle following the hoof step of mithun, and most important due to security point of view because women and children are prone to lost in jungle as they have limited knowledge about different shortcut foot track. However in SMLB intervention, women and children also take part in monitoring their mithun by regular visit at SMLB constructed spot, there by sharing the burden of monitoring mithun, which was earlier practiced only by male member of family in traditional system of mithun production.

Digital monitoring through CCTV

In the current digitalization and mechanization era, we should make use of recent technology for easy access and better farming scenario. CCTV camera can be install at SMLB spot and digitally mithun can be monitored by just viewing the CCTV recorded footage for the presence of their mithun and animal health status, weekly or monthly basis instead of repeated visit. CCTV technology is not possible to use in traditional method of mithun production due to absence of any single point of gathering mithun as in case of SMLB technology.

Eco tourism spot as Mithun view point

Mithun being the most unique and favorite animal of Arunachal Pradesh, not only from outside state but also even from own district, many people want to have a glimpse of mithun gathering at one point. Therefore, it act as recreational and photo shoot spot for many animal lover and serve as a tourist attraction view point. Which is not possible in counter part of mithun production systems.

Time for visiting mithun

There is no any specific time where mithun will be available in which part of forest due to scattered grazing ground in traditional system of mithun productions. However, in SMLB intervention mithuns, are attracted towards SMLB due to their strong salt licking affinity. Therefore, mithun usually visit the SMLB spot early Morning in between (5-7am) and in Evening (4-7 pm). Unlike cattle mithun cannot tolerate heat, therefore they prefer to graze deep in jungle in daytime. Accordingly, the mithun owner visit the SMLB spot in morning and evening hours to track their mithun, thereby avoiding day time visit.

Replenish of salt and mineral in SMLB

After evenly moisten the SMLB slab with water, 2kg of common salt and 1kg mineral mixture after mixing properly, it is spread evenly, every once in two month during daytime when mithun are out for grazing. By doing this, it is enough to maintain continuous production of salt taste from SMLB.

Table 1 Traditional V/s SMLB technology on mithun production in free range system

Parameters	local	SMLB	Percentage change
Time required in tracking mithun in Jungle	5-6 hours /visit	0.5 -1 hours/visit	110
Frequency of monitoring by owner	3 visit/ months	8 visit/months	266
Man day labour Rs400/day (8 hours)	5.5*3= 16.5 hours (2 days) =Rs 400*2 days, =Rs 800/month	0.5*8= 4 hours (0.5 days) =Rs 400*0.5 day =Rs200/month	400
Number of mithun visit for salt licking	1-2	8-12	500
Involvement of women and children	No	yes	>100
Digital monitoring through CCTV	Not applicable	Applicable	>100
Monitoring Mithun health	Difficult	Easy	>100
Eco tourism spot as Mithun view point	No	Yes	>100
Mineral supplement to mithun	No	Yes	>100
Time for visiting Mithun	No definite time	Morning (5-7am) Evening (4-7 pm)	>100

CONCLUSION

SMLB technology developed by SMS Animal Science, KVK Anjaw is based on drudgery reduction, intervention to mitigate the monitoring workload by mithun farmers in traditional system of mithun husbandry, thereby attracting mithun to assemble in one location for easy monitoring. This technology is cost effective and a farmer friendly. Therefore, SMLB technology for mithun can be considered as a prototype model for replicate in different district and states of NEH mithun rearing belt.

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