
PERFORMANCE TEST RESULT ANALYSIS

KOMATSU MACHINE

4.7. PERFORMANCE TEST RESULT ANALYSIS

Table 41: Summary of performance test data

No.	Description	Dry condition	Light bush	Wet condition
1	Vegetation	No	Yes	No
2	Clearance target, m ²	2000	2000	1000
3	Clearance duration in Hour	3.17	3.56	1.58
4	True clearance, m ²	2000	2000	1000
5	Productivity, m ² /hour	631	562	632
6	Total bored mine, mine	60	60	30
7	Destroyed mine, mine	56	46	25
8	Un-Destroyed mine (live mine), mine	4	14	5
9	Mine Clearance quality, %	93%	77%	83%
10	Fuel consumption, Liters	128	144	62
11	Fuel consumption rate, Liters/hour	40.37	40.34	39.21
12	Productivity – fuel ratio, m ² /Liters	15.63	13.94	16.13
13	Average distant of flying fragment, m	5.94	3.28	2.61
14	Potential to break one mine into pieces	3.82	2.80	2.3
15	Fragment position in test lane after clearance, pieces	229	168	67
16	Fragment position outside test lane after clearance, pieces	0	0	2

4.7.1. CLEARANCE PRODUCTIVITY RATE

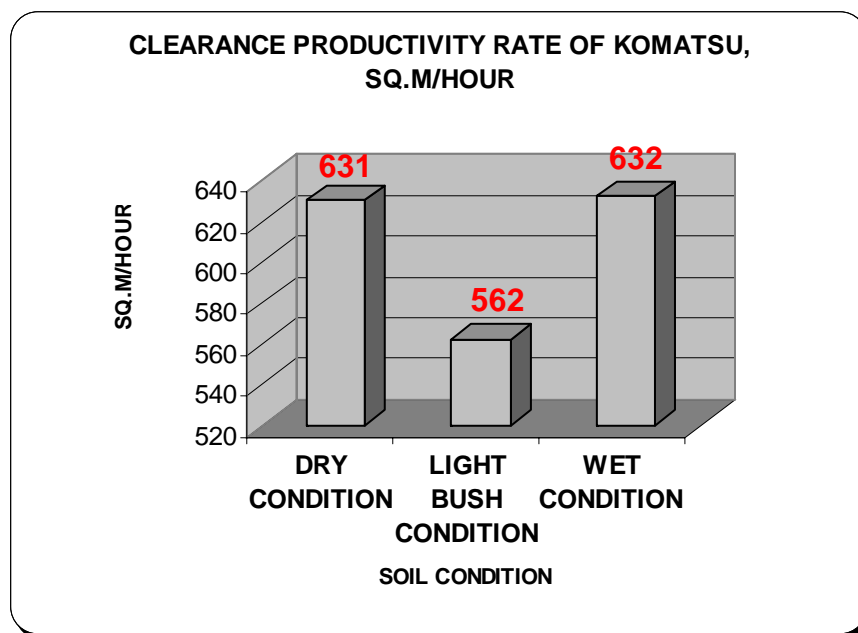


Figure 53: Clearance productivity rate

KOMATSU machine is good at clearing both wet and dry condition and having difficulty to clear light bush condition. This might be a result of it's drum incident being got stuck by vegetation at test lane number 2. To clear 5000m² of dry, wet and light bush conditions, demining machine KOMATSU requires 8.31 hours. Therefore:

AVERAGE PRODUCTIVITY RATE: 602 M²/h

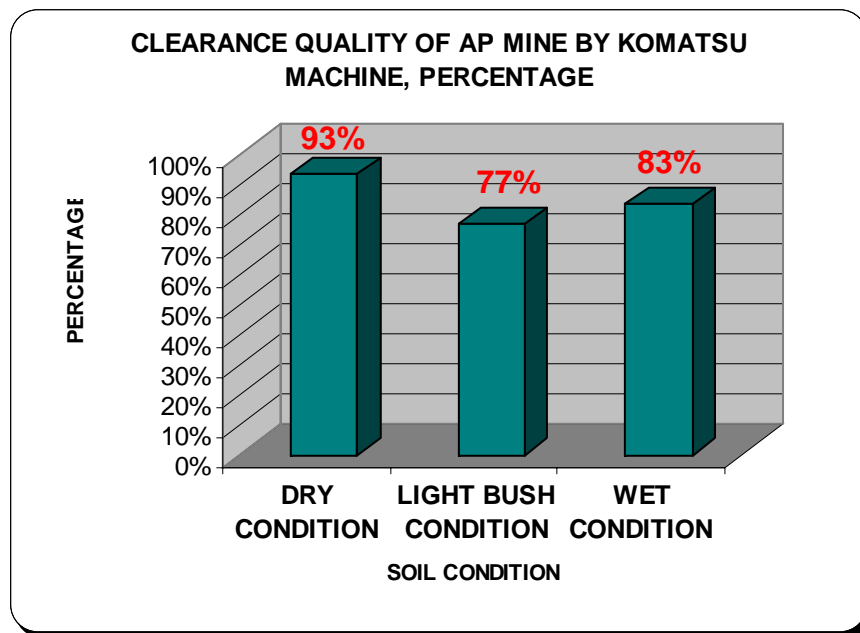
4.7.2.MINE CLEARANCE QUALITY

Figure 54: Clearance quality of AP mine

During performance test, demining KOMATSU machine could clear 93%, 77% and 83% at dry, light bush and wet conditions respectively. Therefore, it is indicate that demining machine KOMATSU achieves high mine clearance performance at dry condition and having problem to destroy mine at bush area. In total out of 150 AP mines used for this test, demining KOMATSU machine could clear 127 AP mines. This represents 85% quality clearance of AP mine by KOMATSU.

AVERAGE MINE CLEARANCE QUALITY: 85%

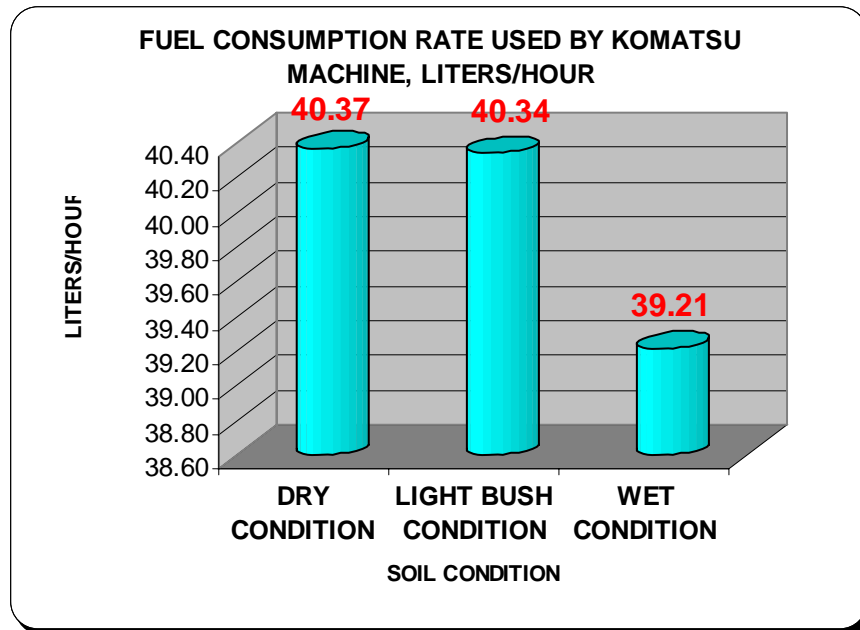
4.7.3.FUEL CONSUMPTION RATE

Figure 55: Fuel consumption rate

Demining machine KOMATSU consume 40.37 l/h, 40.34 l/h and 39.21l/h during its operation at performance test at dry, light bush and wet conditions respectively. In total during its 8.31 hours operation, it consumes 334 liters of fuel. Therefore:

AVERAGE FUEL CONSUMPTION RATE: 40.14 L/h

4.7.4. CLEARANCE PRODUCTIVITY – FUEL RATIO

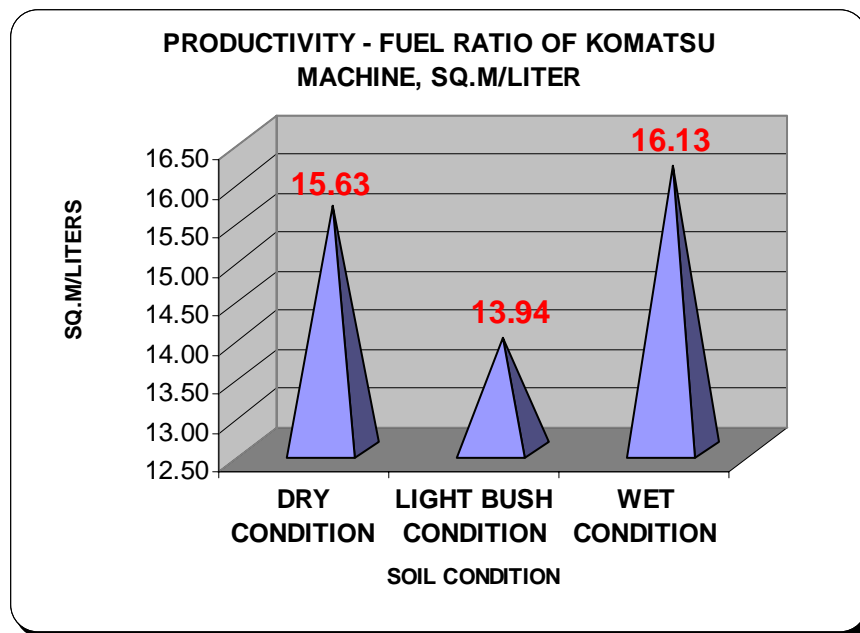


Figure 56: Clearance size – fuel ratio

For the amount of one liter of fuel, demining machine KOMATSU could clear 15.63m²/l, 13.94m²/l and 16.13m²/l at dry, light bush and wet conditions respectively. At total of 5,000m² of performance test area, demining machine consumes 334 liters of fuel. Therefore, an average for one liter of fuel, demining machine could clear:

AVERAGE PRODUCTIVITY-FUEL RATIO: 14.99 M²/L

4.7.5.FRAGMENT POSITION AFTER CLEARANCE

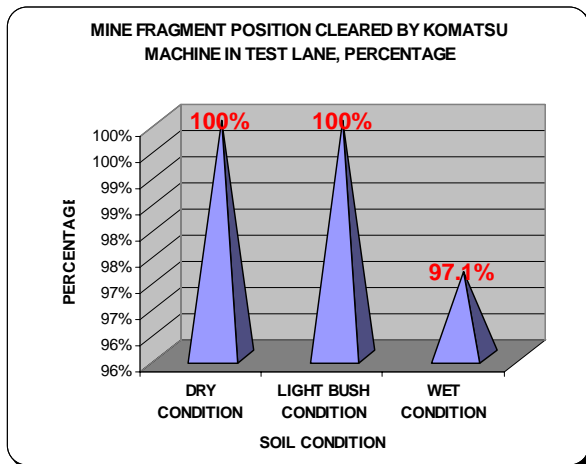


Figure 57: Fragment in test lane

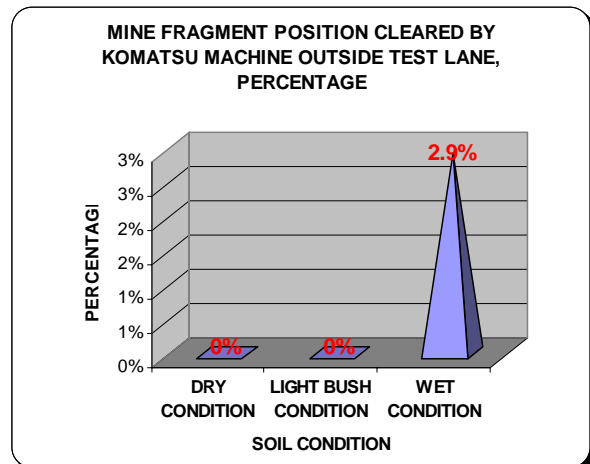


Figure 58: Fragment out of test lane

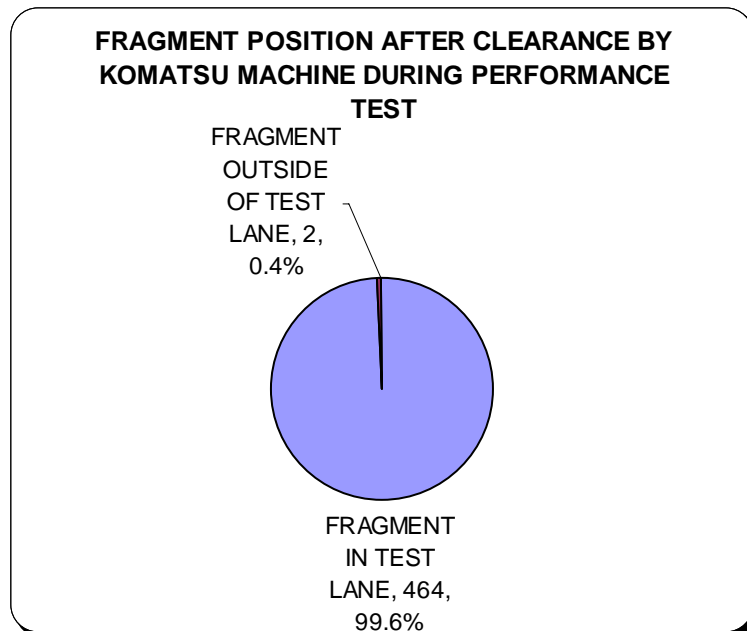


Figure 59: Fragment position in and out of test lane

Demining machine KOMATSU could breaks mine into pieces and fragments would scattered some inside test lane and some out of test lane. According to the above figure, fragment could be located within test lane are 100%, 100% and 97.1% at dry, light bush and wet conditions respectively. The rest could be located out of test lane. To sum up, therefore, 9% of fragments could be located within test lane.

FRAGMENT IN OPERATION AREA: 99.6 %
FRAGMENT OUT OF OPERATION AREA: 0.4 %

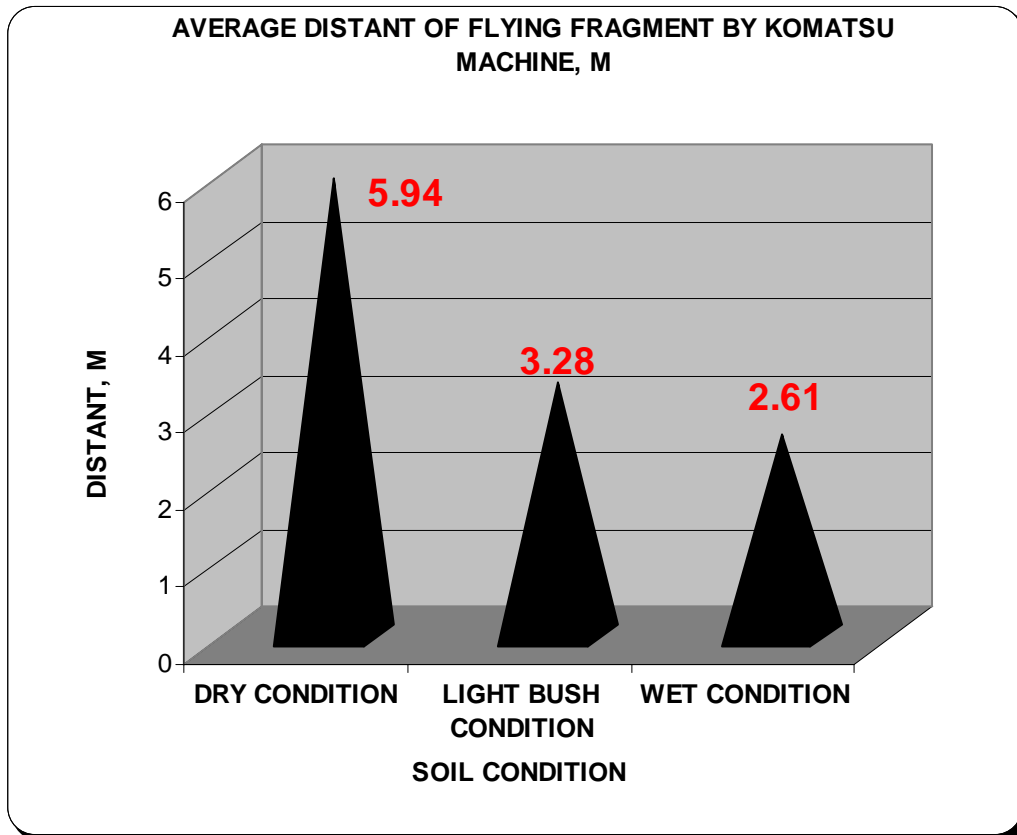
4.7.6.FLYING FRAGMENT CAUSE BY MINE CLEARANCE MACHINE

Figure 60: distant of flying fragment

During operation, fragment is disperse at a distant of 5.94 m, 3.28m and 2.61m at dry, light bush and wet conditions respectively.

MAXIMUM DISTANT OF FLYING FRAGMENT: 5.94 m

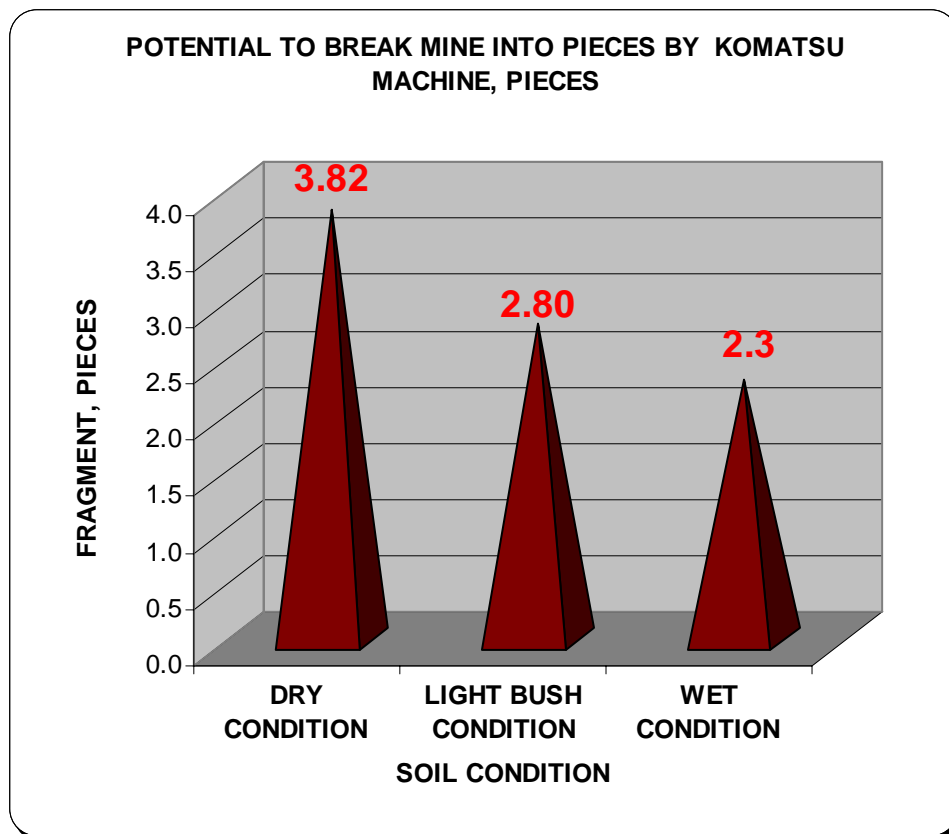
4.7.7.POTENTIAL TO BREAK ONE MINE INTO PIECES BY DEMINING MACHINE

Figure 61: Potential to break AP mine by the machine

Demining machine KOMATSU could break mine up into pieces. At dry, light bush and wet conditions, it could break one mine into 3.82 pieces, 2.8 pieces and 2.7 pieces respectively.

AVERAGE BROKEN MINE: 3.0 PIECES/MINE