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# **PERFORMANCE TEST RESULT ANALYSIS**

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## **PUSH TYPE MACHINE**

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## 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 <sup>2</sup>	2,000	2,000	1,000
3	Clearance duration in Hour	3.7	3.57	1.54
4	True productivity, m <sup>2</sup>	2,000	2,000	1,000
5	Productivity rate, m <sup>2</sup> /hour	540.14	560.70	648.65
6	Total bored mine, mine	60	60	30
7	Destroyed mine, mine	53	49	28
8	Un-Destroyed mine, mine	7	11	2
9	Mine Clearance quality, %	88%	82%	93%
10	Fuel consumption, Liters	143.5	133	60
11	Fuel consumption rate, Liters/hour	38.75	37.29	38.92
12	Productivity – fuel ratio, m <sup>2</sup> /Liters	13.94	15.04	16.67
13	Average distant of flying fragment, m	6.85	2.82	3.53
14	Potential to break one mine into pieces	1.8	1.4	1.7
15	Fragment position in test lane after clearance, pieces	101	76	51
16	Fragment position outside test lane after clearance, pieces	5	6	0

### 4.7.1. CLEARANCE PRODUCTIVITY RATE

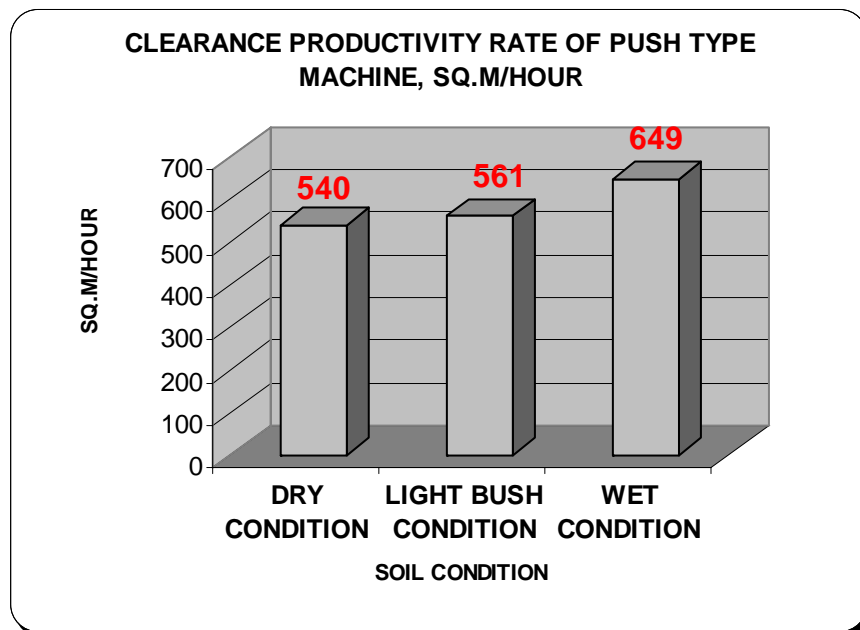


Figure 53: Clearance productivity rate

Push type machine is good at clearing wet or muddy location and having difficulty to clear hard, dry condition. To clear 5000m<sup>2</sup> of dry, wet and light bush conditions, demining machine push type requires 8.81 hours. Therefore:

**AVERAGE PRODUCTIVITY RATE: 567.45 M<sup>2</sup>/h**

#### 4.7.2.MINE CLEARANCE QUALITY

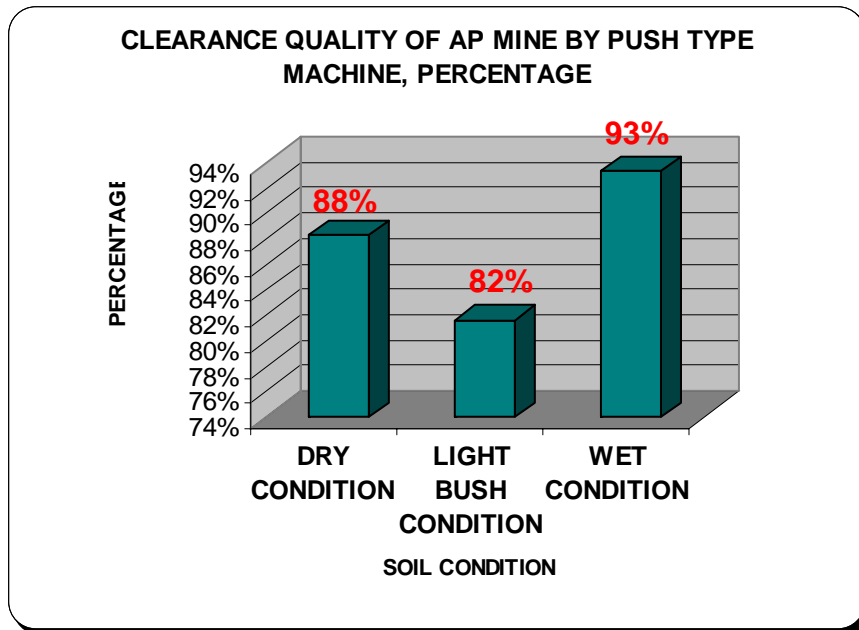


Figure 54: Clearance quality of AP mine

During performance test, demining push type machine could clear 88%, 82% and 93% at dry, light bush and wet conditions respectively. Therefore, it is indicate that demining machine push type achieves high mine clearance performance at wet or muddy condition and having problem to destroy mine at bush area. In total out of 150 AP mines used for this test, demining push type machine could clear 130 AP mines. This represents 87% quality clearance of AP mine by push type.

**AVERAGE MINE CLEARANCE QUALITY: 87%**

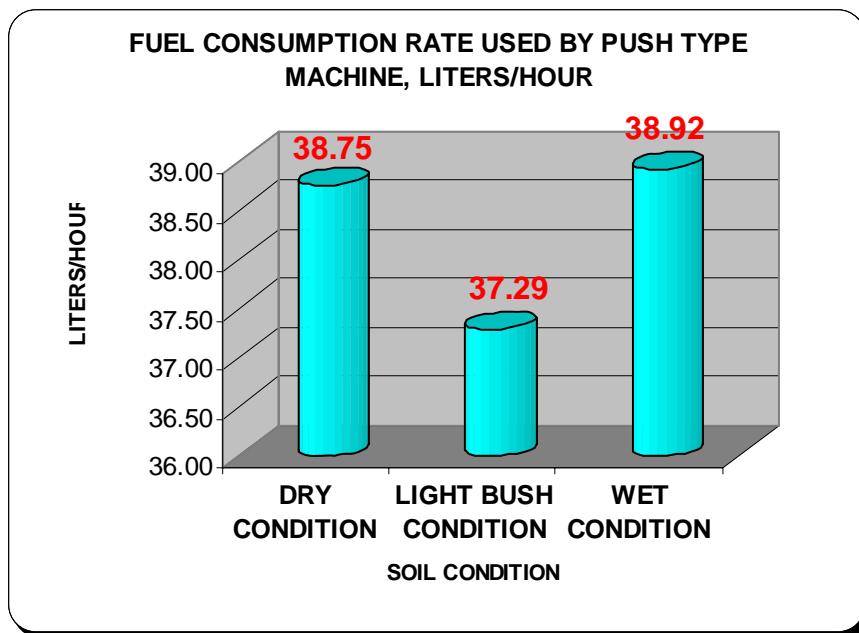
**4.7.3.FUEL CONSUMPTION RATE**

Figure 55: Fuel consumption rate

Demining machine push type consume 38.75 l/h, 37.29 l/h and 38.92l/h during its operation at performance test at dry, light bush and wet conditions respectively. In total during its 8.81 hours operation, it consumes 337 liters of fuel. Therefore:

**AVERAGE FUEL CONSUMPTION RATE: 38.19 L/h**

#### 4.7.4. CLEARANCE PRODUCTIVITY – FUEL RATIO

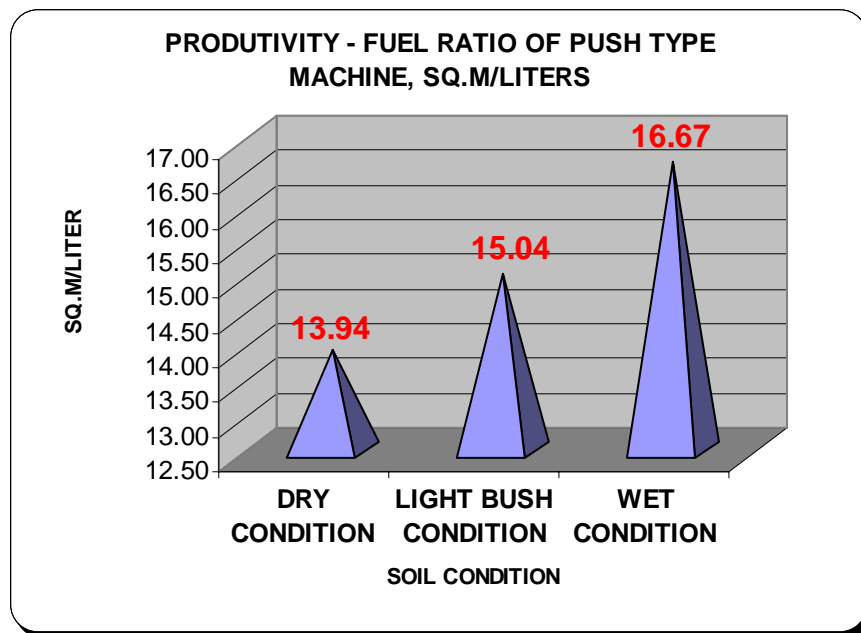


Figure 56: Clearance size – fuel ratio

For the amount of one liter of fuel, demining machine push type could clear 13.94m<sup>2</sup>/l, 15.04m<sup>2</sup>/l and 16.67m<sup>2</sup>/l at dry, light bush and wet conditions respectively. At total of 5,000m<sup>2</sup> of performance test area, demining machine consumes 337 liters of fuel. Therefore, an average for one liter of fuel, demining machine could clear:

**AVERAGE PRODUCTIVITY-FUEL RATIO: 14.86 M<sup>2</sup>/L**

**4.7.5. FRAGMENT POSITION AFTER CLEARANCE**

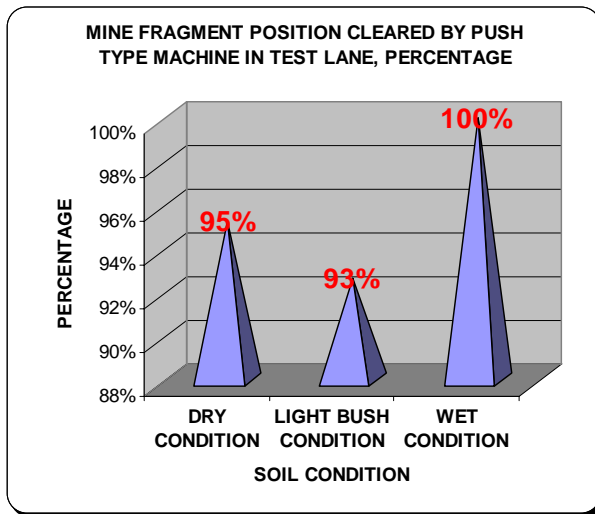


Figure 57: Fragment in test lane

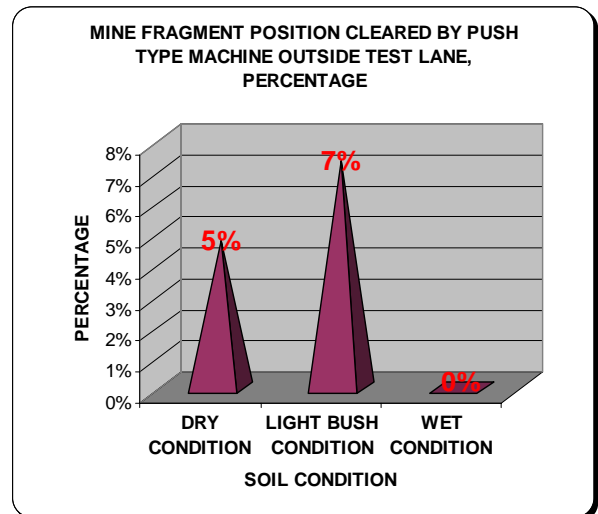


Figure 58: Fragment out of test lane

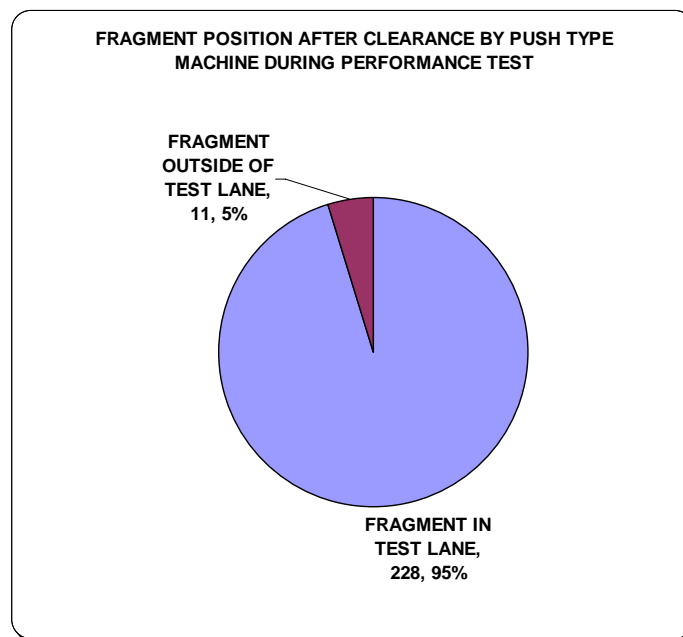


Figure 59: Fragment position in and out of test lane

Demining machine push type could break mine into pieces and fragments would be scattered some inside test lane and some out of test lane. According to the above figure, fragments could be located within test lane are 95%, 93% and 100% at dry, light bush and wet conditions respectively. The rest could be located out of test lane. To sum up, therefore, 95% of fragments could be located within test lane.

**FRAGMENT IN OPERATION AREA: 95 %**  
**FRAGMENT OUT OF OPERATION AREA: 5 %**

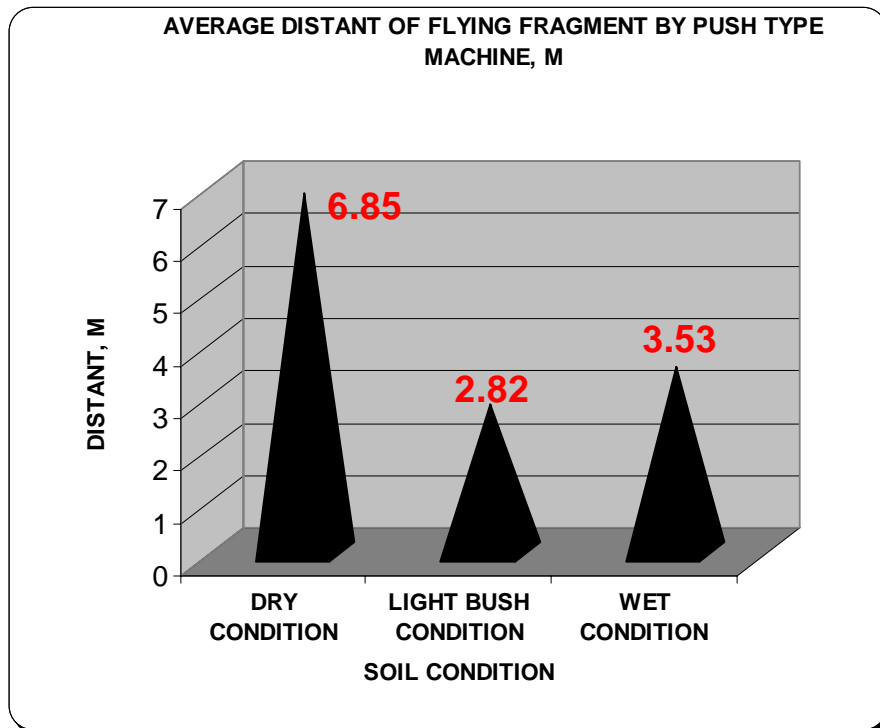
**4.7.6.FLYING FRAGMENT CAUSE BY MINE CLEARANCE MACHINE**

Figure 60: distant of flying fragment

During operation, fragment is disperse at a distant of 6.85 m, 2.82m and 3.53m at dry, light bush and wet conditions respectively.

**MAXIMUM DISTANT OF FLYING FRAGMENT: 6.85 m**

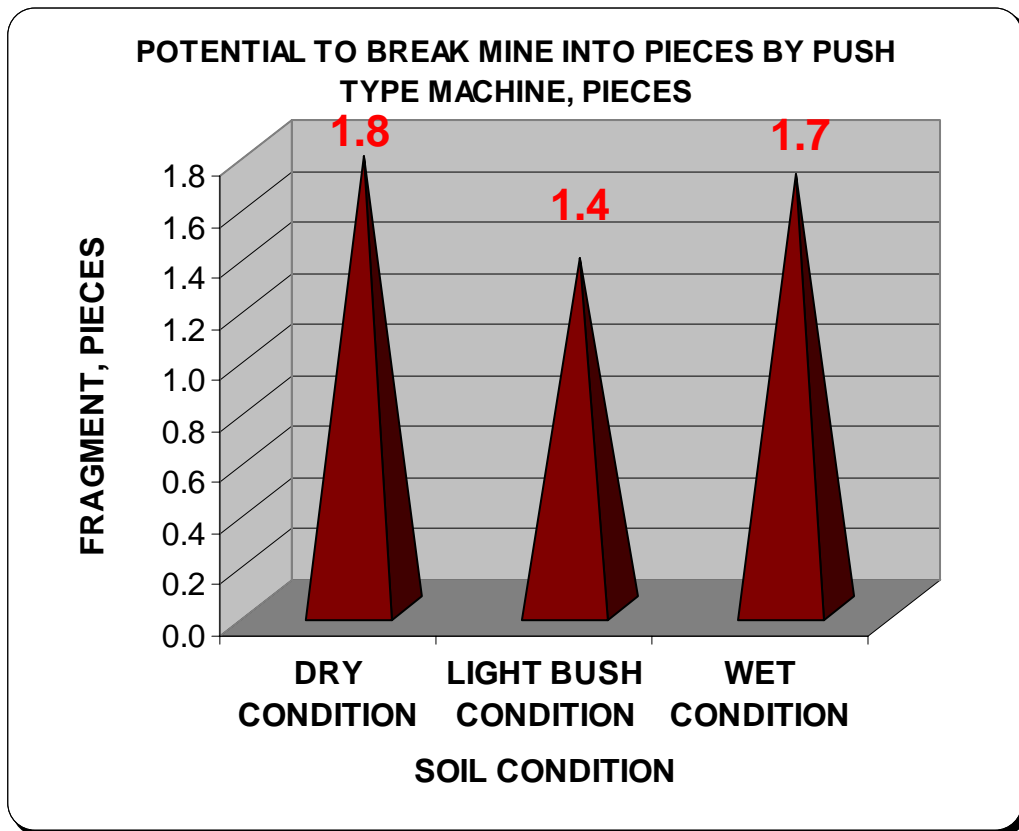
**4.7.7.POTENTIAL TO BREAK ONE MINE INTO PIECES BY DEMINING MACHINE**

Figure 61: Potential to break AP mine by the machine

Demining machine push type could break mine up into pieces. At dry, light bush and wet conditions, it could break one mine into 1.8 pieces, 1.4 pieces and 1.7 pieces respectively.

**AVERAGE BROKEN MINE: 1.6 PIECES/MINE**