PERFORMANCE TEST RESULT ANALYSIS

SWING TYPE 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	3.24	6.18	3.18
4	True clearance, m^2	1500	2000	1000
5	Productivity rate, m^2/hour	462	324	315
6	Total bored mine	45	60	30
7	Destroyed mine	39	52	29
8	Un-Destroyed mine	6	8	1
9	Mine Clearance quality	87%	87%	97%
10	Fuel consumption, liter	109	210	116
11	Fuel - time ratio, liter/hour	33.60	34.03	36.48
12	Clearance efficiency, m^2/liter	13.76	9.51	8.62
13	Average distant of flying fragment, m	17.52	23.55	21.10
14	Potential to break one mine into pieces	3.24	2.60	2.4
15	Fragment position in test lane after clearance, pieces	33	34	11
16	Fragment position outside test lane after clearance, pieces	113	122	62

4.7.1. CLEARANCE PRODUCTIVITY RATE

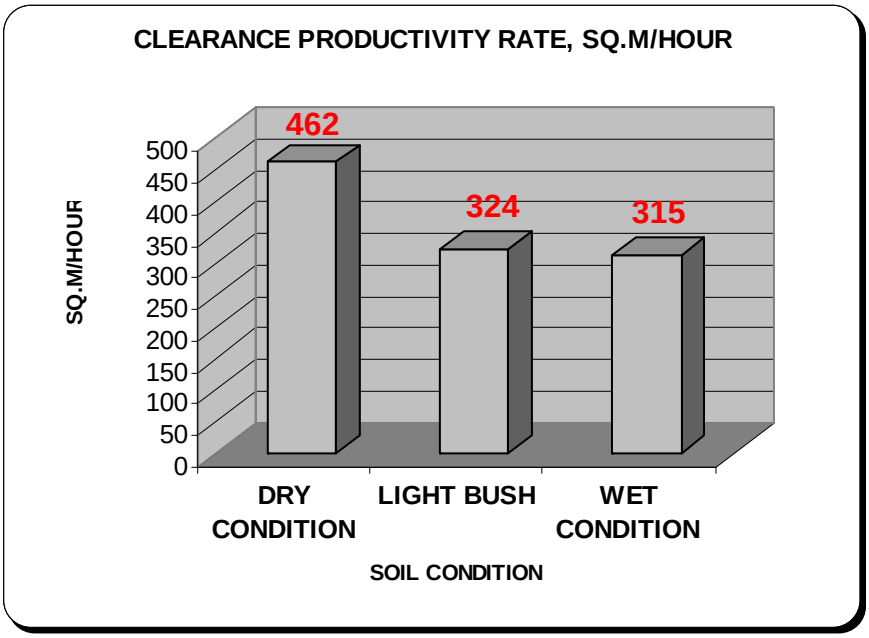

Figure 53: Clearance productivity rate

SWING type machine is good at clearing both dry condition and having difficulty to clear light bush and wet conditions. Out of 5,000m^2 assigned test lane, swing type machine could clear only 4,500m^2. it could not continue to clear due to potential to bog down. To complete 3,000m^2 of dry, light bush and wet conditions, demining machine SWING type requires 12.6 hours. Therefore:

AVERAGE PRODUCTIVITY RATE: 357 M^2/h

4.7.2.MINE CLEARANCE QUALITY

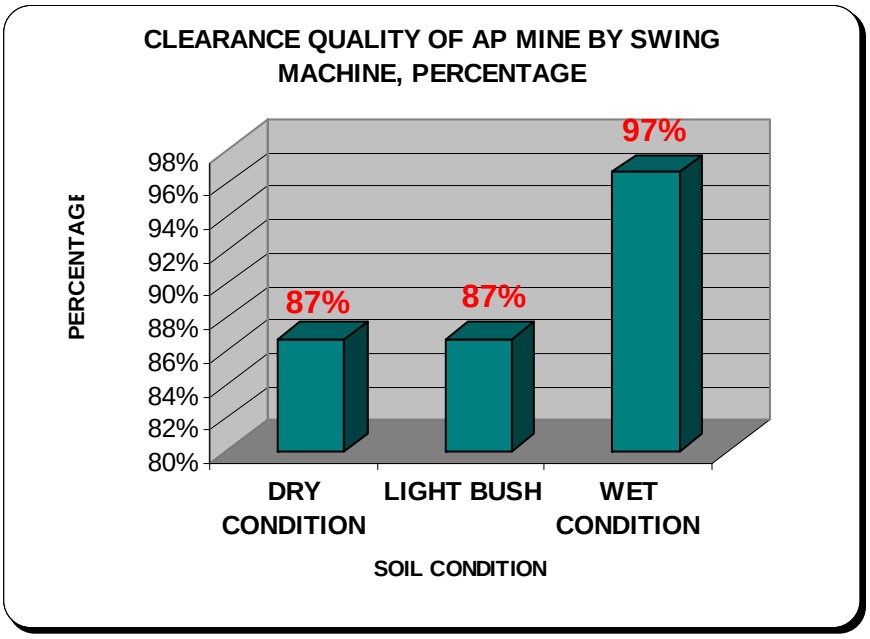

Figure 54: Clearance quality of AP mine

During performance test, demining SWING type machine could clear 87%, 87% and 97% at dry, light bush and wet conditions respectively. Therefore, it is indicate that demining machine SWING type achieves high mine clearance performance at wet condition or soft ground area and having problem to destroy mine at hard ground or vegetation grown area. In total out of 150 AP mines used for this test, only 135 mines are located in the active clearance area. Out of 135 mines, demining SWING type machine could clear 120 AP mines. This represents 89% quality clearance of AP mine by SWING type.

AVERAGE MINE CLEARANCE QUALITY: 89%

4.7.3. FUEL CONSUMPTION RATE

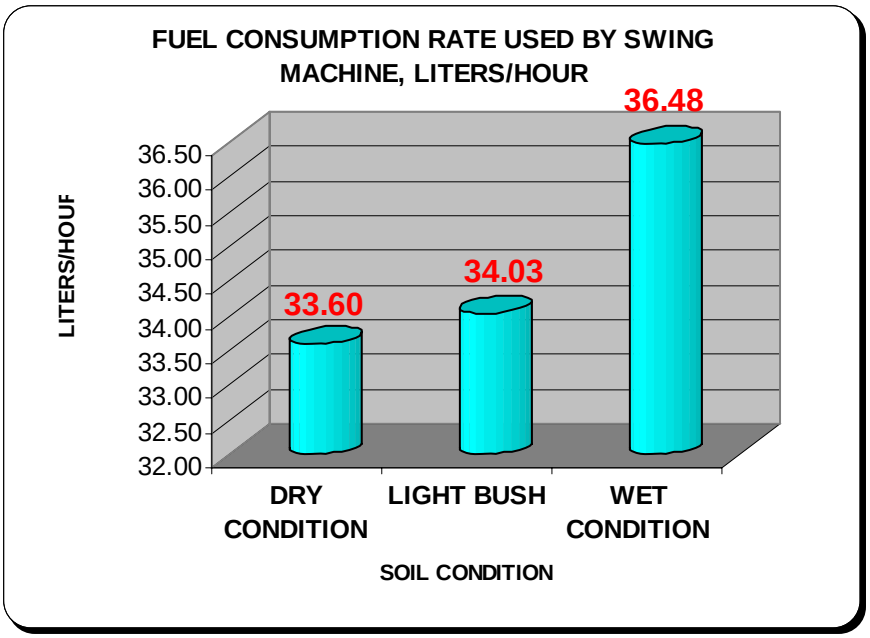

Figure 55: Fuel consumption rate

Demining machine PUSH type consumes 33.6 l/h, 34.03 l/h and 36.48l/h during its operation at performance test at dry, light bush and wet conditions respectively. In total during its 12.6 hours operation, it consumes 435 liters of fuel. Therefore:

AVERAGE FUEL CONSUMPTION RATE: 34.54 L/h

4.7.4. CLEARANCE SIZE – FUEL RATIO

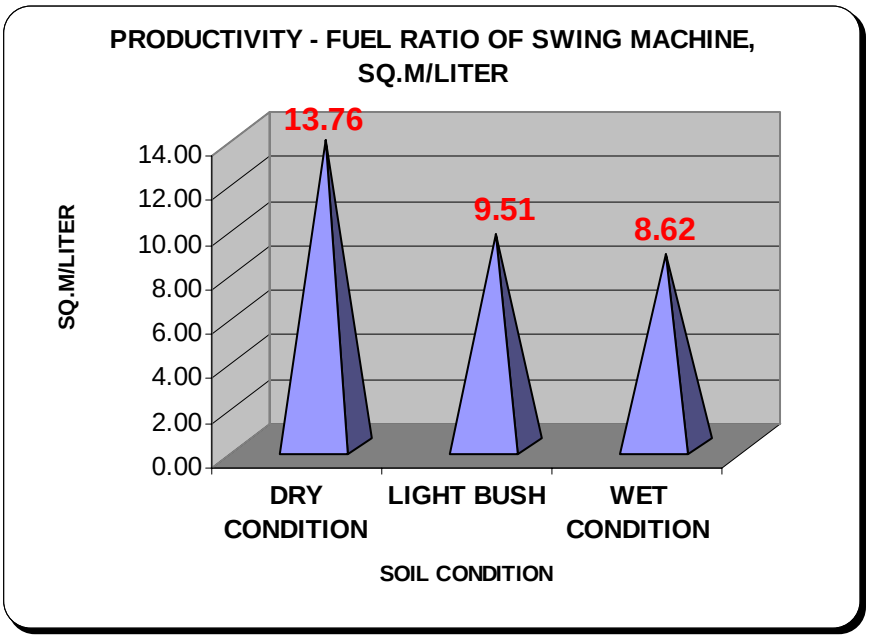

Figure 56: Clearance size – fuel ratio

For the amount of one liter of fuel, demining machine PUSH type could clear 13.76m^2/h, 9.51m^2/h and 8.62m^2/h at dry, light bush and wet conditions respectively. At total of 4,500m^2 of performance test area, demining machine consumes 435 liters of fuel. Therefore, an average for one liter of fuel, demining machine could clear:

AVERAGE PRODUCTIVITY-FUEL RATIO: 10.34 M^2/L

4.7.5. FRAGMENT POSITION AFTER CLEARANCE

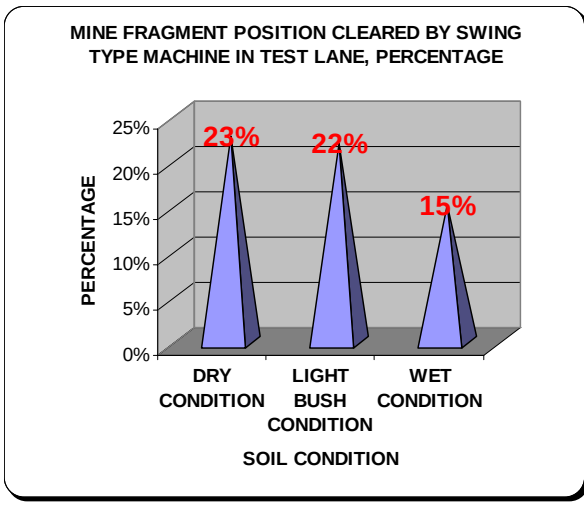

Figure 57: Fragment in test lane

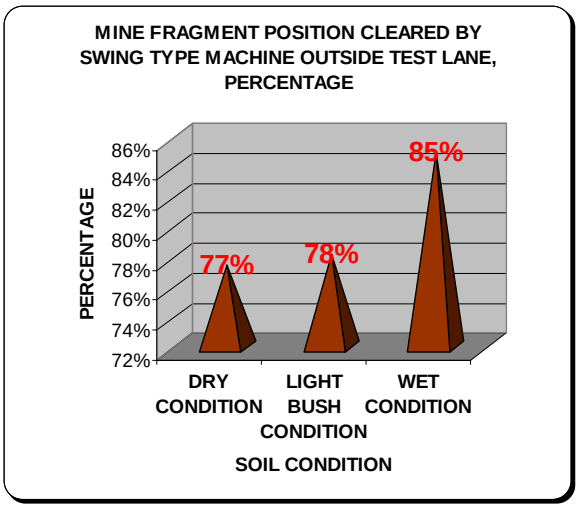

Figure 58: Fragment out of test lane

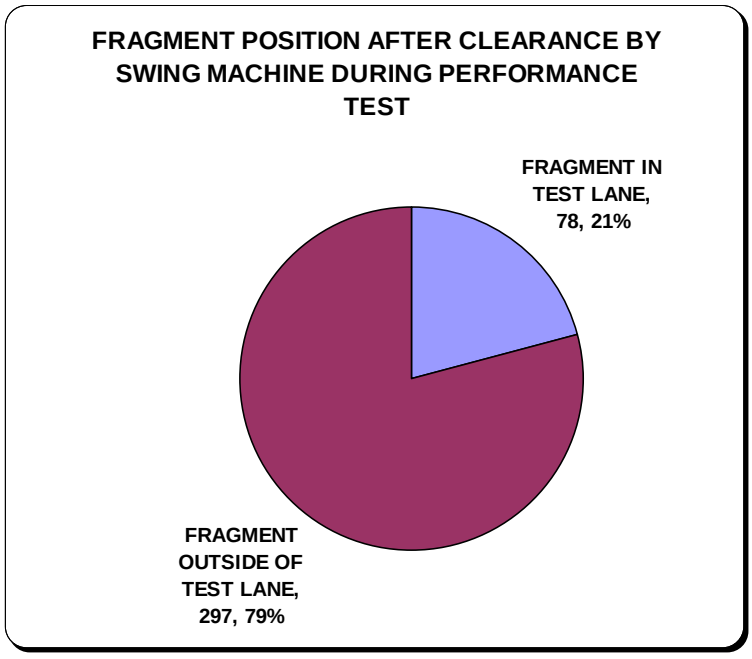

Figure 59: Fragment position in and out of test lane

Demining machine SWING type 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 23%, 22% and 15% at dry, light bush and wet conditions respectively. The rest could be located out of test lane. To sum up, therefore, 21% of fragments could be located within test lane.

FRAGMENT IN OPERATION AREA: 21 %
FRAGMENT OUT OF OPERATION AREA: 79 %

4.7.6. FLYING FRAGMENT CAUSE BY MINE CLEARANCE MACHINE

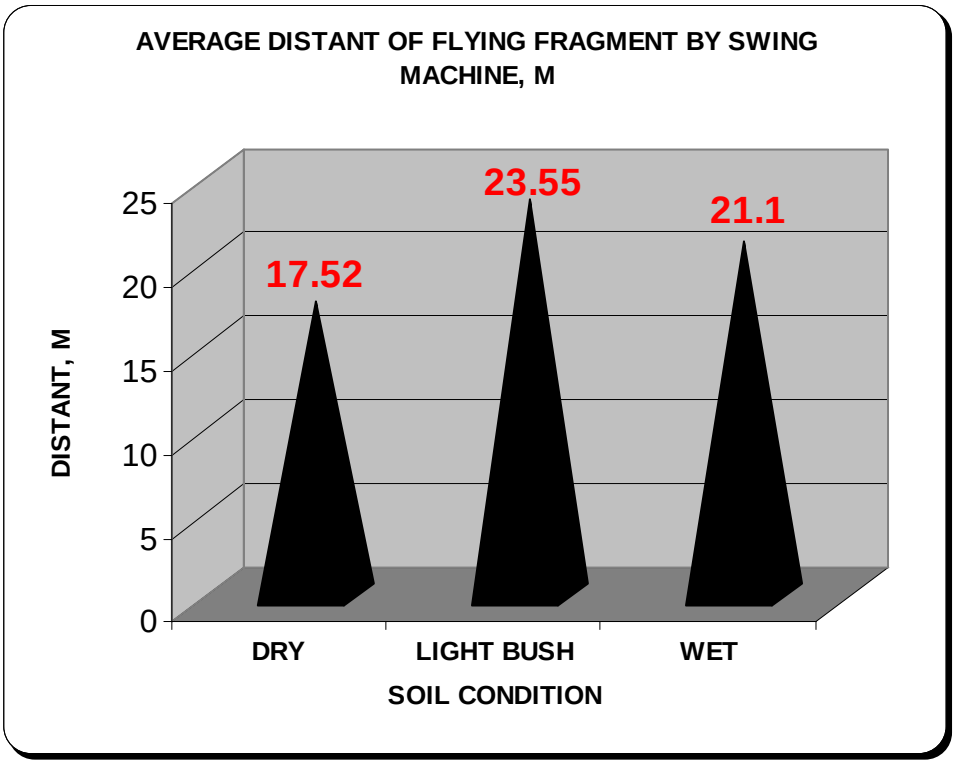

Figure 60: distant of flying fragment

During operation, fragment is disperse at a distant of 17.52 m, 23.55m and 21.1m at dry, light bush and wet conditions respectively.

MAXIMUM DISTANT OF FLYING FRAGMENT: 23.55 m

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

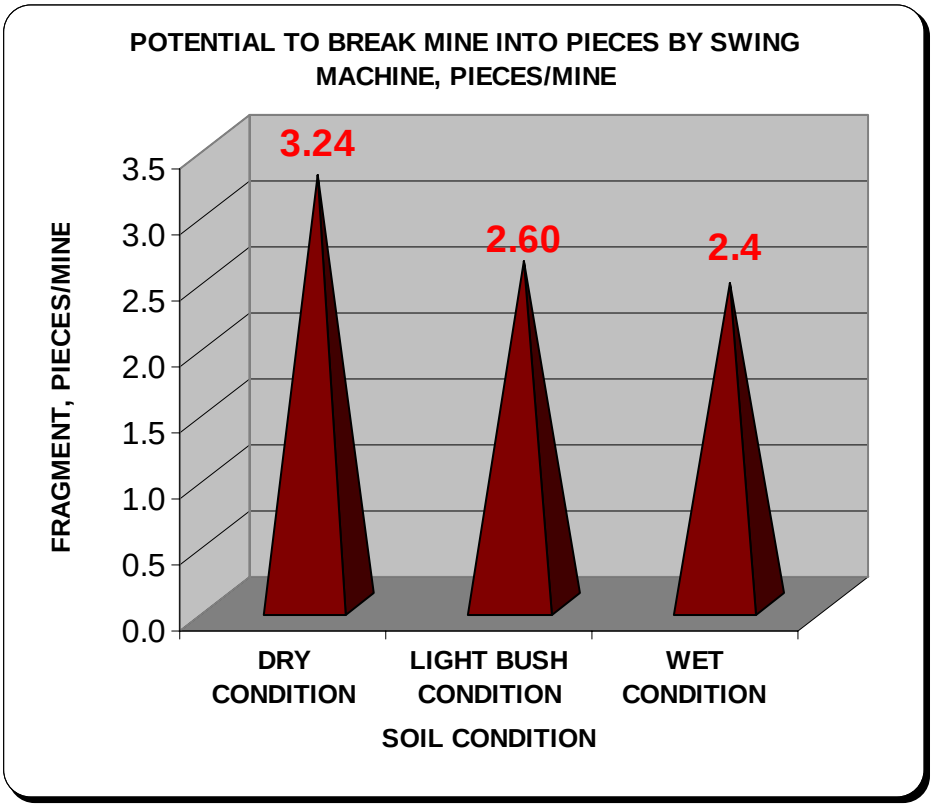

Figure 61: Potential to break AP mine by the machine

Demining machine swing type could break mine up into pieces. At dry, light bush and wet conditions, it could break one mine into 3.24 pieces, 2.6 pieces and 2.4 pieces respectively.

AVERAGE BROKEN MINE: 2.8 PIECES/MINE