

Table1 : Seedling response of NBDSN lines to the pathotypes of three rust pathogens of barley during 2018-19

| S. No. | NBDSN Entries | Pathotypes | | | | | | | | | | | | | | | | | | |
|--------|---------------|------------|----|----|----|----|------------|----|-------|-----|-------|-------------|--|----|----|----|----|-----|----|-----|
| | | Brown rust | | | | | Black rust | | | | | Yellow rust | | | | | | | | |
| | | H1 | H2 | H3 | H4 | H5 | | 11 | 21A-2 | 40A | 117-6 | 295 | | 57 | M | 24 | G | 6S0 | Q | 7S0 |
| 1 | BH 1023 | S | S | MS | S | MS | | R | R | R | S | MS | | R | R | R | R | R | R | R |
| 2 | BH 1024 | R | R | R | R | R | | R | R | R | R | R | | S | S | R | R | MS | R | S |
| 3 | BH 1025 | S | S | R | S | S | | R | R | R | R | MS | | MR | S | R | R | R | R | S |
| 4 | BHS 472 | S | S | S | S | S | | MS | R | R | MS | R | | R | MR | R | R | R | R | R |
| 5 | BHS 474 | R | R | R | R | R | | S | MR | R | MR | R | | R | R | R | R | R | R | R |
| 6 | BHS 475 | R | R | R | R | R | | MS | R | R | R | R | | MS | R | S | R | R | R | R |
| 7 | BHS 476 | R | S | MS | R | S | | MR | R | S | R | S | | R | S | MS | S | R | S | S |
| 8 | BHS 477 | R | R | R | R | R | | R | R | MR | R | R | | S | S | S | S | R | S | R |
| 9 | DWRB 160 | S | MS | S | MS | R | | S | R | R | MS | S | | MS | MS | R | R | R | MS | R |
| 10 | DWRB 182 | R | MS | MS | S | MS | | R | R | R | R | R | | R | R | R | R | R | R | R |
| 11 | DWRB 184 | R | R | R | R | R | | R | R | R | MS | S | | R | MR | R | R | R | S | R |
| 12 | DWRB 188 | R | R | R | R | R | | R | R | MR | R | R | | R | MR | MX | R | R | R | MS |
| 13 | DWRB 196 | S | S | R | S | R | | MS | R | R | R | MS | | S | MS | R | R | R | MS | S |
| 14 | DWRB 197 | R | R | R | R | R | | S | R | R | R | R | | S | S | S | S | R | S | MX |
| 15 | DWRB 198 | S | MS | R | MS | R | | R | R | R | R | MR | | S | S | MS | R | MR | R | S |
| 16 | DWRB 199 | S | S | R | S | R | | S | R | R | R | MR | | S | S | MS | R | R | MS | S |
| 17 | DWRB 200 | MS | S | MS | MS | R | | R | MR | R | R | S | | R | R | R | R | R | R | R |
| 18 | DWRB 201 | S | S | R | S | S | | R | R | R | R | MS | | R | R | R | R | R | R | R |
| 19 | DWRB 202 | R | R | R | R | R | | R | R | R | R | S | | MS | S | MS | R | MS | S | MS |
| 20 | DWRB 203 | R | MS | R | R | R | | R | R | R | MR | R | | S | S | MR | MS | S | S | S |
| 21 | DWRB 204 | R | R | R | R | R | | S | R | R | S | R | | MX | MS | R | R | R | R | R |
| 22 | DWRB 205 | S | S | R | R | R | | S | R | R | S | S | | S | S | MR | MS | S | R | R |
| 23 | DWRB 206 | R | R | R | R | R | | MS | R | R | S | R | | R | S | R | S | R | R | S |
| 24 | DWRB 207 | S | S | MS | S | S | | S | S | S | S | S | | R | R | R | R | R | R | R |
| 25 | HBL 845 | R | R | R | R | R | | R | R | R | MS | R | | R | R | R | R | R | R | R |
| 26 | HBL 848 | R | R | R | R | R | | R | R | R | R | S | | MR | MX | R | R | MS | R | MS |
| 27 | HBL 851 | R | R | R | R | R | | R | R | R | R | MS | | R | R | R | R | R | S | MS |
| 28 | HBL 858 | S | S | S | S | S | | MS | S | R | R | R | | R | S | R | R | R | R | S |
| 29 | HBL 863 | R | R | R | R | R | | MS | S | R | R | S | | R | R | R | R | R | R | R |
| 30 | HUB 265 | S | R | S | R | MR | | MS | R | MR | S | S | | S | S | S | S | S | S | S |
| 31 | HUB 266 | S | S | R | S | MS | | MS | MR | MR | S | S | | R | R | R | R | R | R | R |
| 32 | HUB 267 | S | S | S | S | S | | R | R | MR | S | MS | | S | S | R | MS | S | MX | S |
| 33 | HUB 268 | S | S | R | R | R | | S | S | MS | S | MR | | S | S | S | MS | S | S | S |
| 34 | KB 1706 | R | R | R | R | R | | R | R | MR | S | S | | S | MS | MS | MS | R | S | MR |
| 35 | KB 1707 | S | S | S | S | S | | S | MS | MR | R | S | | R | R | R | R | R | R | R |
| 36 | KB 1713 | S | S | R | MS | MS | | S | MR | S | S | S | | R | R | R | R | R | R | R |
| 37 | KB 1743 | S | S | S | S | S | | S | S | MR | S | S | | S | S | S | S | S | S | S |
| 38 | KB 1750 | S | MS | R | R | R | | R | MR | R | MR | S | | MS | MS | MR | MS | R | MX | MS |
| 39 | KB 1754 | S | S | R | R | R | | MS | S | MS | S | S | | S | S | R | MS | S | S | S |
| 40 | KB 1757 | R | R | R | R | R | | R | R | MR | MR | R | | MS | MS | MR | MR | R | R | MX |

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|----|--------------|----|----|----|----|----|--|----|----|----|----|----|--|----|----|----|----|----|----|----|
| 41 | KB 1762 | R | R | R | R | R | | S | S | R | S | S | | R | R | R | R | R | R | R |
| 42 | NDB 1708 | R | S | R | S | R | | S | R | MR | S | S | | S | S | R | R | R | S | MR |
| 43 | NDB 1709 | S | S | S | S | S | | MR | R | MS | MR | S | | S | R | R | R | R | S | S |
| 44 | NDB 1712 | S | R | S | MS | R | | MR | R | R | MR | R | | R | S | S | S | S | S | MR |
| 45 | NDB 1713 | S | S | S | MS | S | | R | R | R | MS | S | | S | S | MS | MS | R | S | MS |
| 46 | NDB 1723 | MR | S | S | S | S | | S | R | MS | R | S | | S | S | S | R | S | MX | S |
| 47 | PL 891 | R | S | R | S | R | | R | MR | R | R | S | | MS | R | R | R | R | R | R |
| 48 | PL 906 | S | S | S | S | MR | | S | S | MS | S | S | | R | R | R | R | R | R | R |
| 49 | PL 907 | S | S | R | S | R | | R | S | MS | S | S | | S | S | R | S | S | S | S |
| 50 | PL 908 | R | MS | R | R | R | | MS | R | R | S | S | | R | R | R | R | R | R | R |
| 51 | PL 909 | S | S | S | S | MR | | S | R | S | S | S | | R | R | R | R | R | R | R |
| 52 | PL 910 | S | S | S | MS | MR | | MS | R | R | R | R | | MR | S | R | R | MS | R | R |
| 53 | PL 911 | S | S | S | MS | MS | | S | S | S | S | S | | R | R | R | R | R | R | R |
| 54 | RD 2969 | S | S | S | S | MS | | MR | R | R | S | MS | | R | R | R | R | R | R | R |
| 55 | RD 2991 | R | R | R | R | R | | R | R | S | MS | S | | R | R | R | R | R | R | R |
| 56 | RD 2992 | S | R | R | MS | R | | S | S | S | S | S | | R | R | R | R | R | R | R |
| 57 | RD 2994 | S | S | R | MS | R | | MS | S | MS | S | S | | R | R | R | R | MR | R | R |
| 58 | RD 2999 | MS | MS | R | R | R | | R | R | R | MS | S | | R | R | R | R | R | R | R |
| 59 | RD 3000 | S | S | R | MS | R | | S | S | R | R | S | | R | R | R | R | R | R | R |
| 60 | RD 3002 | MS | S | R | R | R | | R | R | R | MS | S | | R | R | R | R | R | R | R |
| 61 | RD 3003 | R | R | R | R | R | | S | S | MR | S | S | | R | R | R | R | R | R | R |
| 62 | RD 3004 | S | S | S | MS | R | | MS | S | R | MS | S | | R | R | R | R | R | R | R |
| 63 | RD 3005 | S | S | S | MS | MS | | S | R | R | R | S | | R | R | R | R | R | R | R |
| 64 | RD 3007 | S | S | R | S | S | | MS | R | R | S | S | | S | S | R | MS | MS | S | S |
| 65 | RD 3008 | R | R | R | R | R | | R | R | R | R | R | | MS | MS | R | R | R | S | R |
| 66 | RD 3009 | R | R | R | MR | R | | MR | R | MR | R | S | | S | S | R | R | MS | S | R |
| 67 | RD 3010 | S | MS | R | S | MR | | MS | R | R | R | R | | S | MS | R | MS | R | S | R |
| 68 | UPB 1074 | S | S | S | S | MS | | R | MS | R | S | MR | | S | S | S | R | R | S | S |
| 69 | UPB 1077 | S | S | S | S | R | | R | R | MR | MR | S | | MS | S | MR | S | R | S | S |
| 70 | UPB 1078 | S | R | R | R | R | | R | R | R | MS | R | | MR | MR | R | R | R | R | MX |
| 71 | UPB 1079 | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | NG | NG |
| 72 | UPB 1080 | R | R | NG | R | R | | S | S | R | S | S | | S | S | MS | S | R | S | S |
| 73 | UPB 1082 | R | R | R | R | R | | S | R | R | MS | R | | NG | S | MR | S | R | S | R |
| 74 | VLB 155 | R | S | R | R | R | | S | R | R | R | S | | S | MS | R | S | R | R | MR |
| 75 | VLB 161 | S | S | S | MS | S | | R | R | R | R | R | | MS | NG | MR | MS | R | MR | R |
| 76 | VLB 162 | MS | R | R | R | R | | MR | R | S | R | R | | S | S | R | S | MS | S | R |
| 77 | VLB 163 | S | S | S | MS | R | | R | MR | R | R | R | | S | S | MS | MS | R | R | R |
| 78 | VLB 164 | S | R | R | R | R | | MS | R | R | S | R | | S | R | R | S | R | S | MS |
| 79 | AZAD (c) | S | S | S | S | S | | R | S | R | R | MS | | S | S | S | R | S | R | S |
| 80 | BH 902 (c) | S | S | S | S | S | | S | R | MR | MS | S | | S | S | R | R | R | R | R |
| 81 | BH 946 (c) | S | S | S | S | S | | S | S | S | S | S | | S | S | S | S | S | MS | S |
| 82 | BHS 352 (c) | S | S | S | S | S | | S | R | R | R | R | | MS | S | R | R | MS | MS | MS |
| 83 | BHS 380 (c) | R | R | R | R | R | | S | S | R | R | S | | R | R | MS | S | R | S | S |
| 84 | BHS 400 (c) | R | S | R | R | R | | S | R | MR | S | S | | MS | MS | R | S | S | MS | S |
| 85 | DWRB 101 (c) | S | S | S | S | MS | | MS | R | R | R | S | | S | MS | R | R | R | MS | S |
| 86 | DWRB 123 (c) | MS | S | S | S | S | | S | R | MR | R | R | | S | MS | R | R | R | S | R |
| 87 | DWRB 137 (c) | S | S | S | S | MS | | S | S | S | S | S | | R | R | R | R | R | R | R |
| 88 | HBL 113 (c) | R | R | R | R | R | | S | MS | R | R | R | | MR | S | MR | R | R | R | R |

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|-----|--------------|----|---|----|----|----|--|----|----|----|----|----|--|----|----|----|---|---|----|---|
| 89 | HBL 276 © | S | S | S | S | S | | MS | R | R | R | R | | R | MS | R | R | R | MS | S |
| 90 | HUB 113 (c) | S | S | S | S | MS | | MS | S | R | S | S | | R | R | R | R | R | R | R |
| 91 | K 1055 (c) | S | S | MS | S | MS | | S | MS | MS | S | MS | | S | S | S | S | S | S | S |
| 92 | K 1149 (c) | S | S | S | MS | MS | | R | R | R | R | R | | S | S | R | S | R | S | R |
| 93 | K 508 (c) | S | S | S | S | MS | | S | S | MS | S | S | | S | S | S | S | S | S | S |
| 94 | K 603 (c) | S | R | S | S | S | | MS | S | R | S | S | | S | S | S | S | S | S | S |
| 95 | Karan 16 (c) | S | S | S | S | R | | S | R | MR | S | MR | | S | S | S | S | R | S | S |
| 96 | Lakhan (c) | S | S | S | S | MS | | R | S | R | S | S | | S | S | S | S | S | S | S |
| 97 | NDB 1173 (c) | S | S | MS | S | S | | R | S | R | S | S | | S | S | R | R | S | R | S |
| 98 | NDB 1445 (c) | S | S | R | R | R | | S | S | R | MS | R | | S | R | R | S | S | S | S |
| 99 | NDB 943 (c) | S | S | S | S | MS | | S | S | R | S | S | | R | S | S | S | S | S | S |
| 100 | RD 2035 (c) | S | S | S | S | S | | S | S | MR | S | S | | S | S | S | S | S | R | S |
| 101 | RD 2552 (c) | S | S | S | S | S | | S | S | MS | S | S | | R | R | R | R | R | R | R |
| 102 | RD 2786 (c) | R | R | R | R | R | | R | R | MS | S | MS | | R | R | R | R | R | R | R |
| 103 | RD 2794 (c) | S | S | R | S | MS | | R | R | R | S | R | | R | R | R | R | R | R | R |
| 104 | RD 2849 (c) | S | S | S | S | S | | S | MS | MS | R | MS | | S | S | MS | S | R | S | R |
| 105 | RD 2899 (c) | MS | S | R | MS | R | | S | S | MS | MR | S | | R | R | R | R | R | R | R |
| 106 | RD 2907 (c) | S | S | R | S | R | | S | R | R | S | S | | R | R | R | R | R | R | R |
| 107 | VLB 118 (c) | R | S | R | R | R | | S | MS | S | S | S | | MS | MS | MR | S | S | S | S |
| | | | | | | | | | | | | | | | | | | | | |

Table2 : Seedling response of EBDSN lines to the pathotypes of three rust pathogens of barley during 2018-19

| | | | | | | | | | | | | | | | | | | | | |
|----|---------|----|----|----|----|----|--|----|----|----|----|---|--|---|---|---|---|---|---|---|
| 1 | RD 2552 | S | MS | MS | R | R | | S | S | R | S | S | | R | R | R | R | R | R | R |
| 2 | RD 2786 | R | R | R | R | R | | MR | MS | MR | R | R | | R | R | R | R | R | R | R |
| 3 | RD 2794 | S | S | R | MS | MS | | R | R | S | R | S | | R | R | R | R | R | R | R |
| 4 | RD 2899 | S | S | MS | MR | R | | S | MS | S | S | S | | R | R | R | R | R | R | R |
| 5 | RD 2907 | S | S | S | R | R | | S | S | MS | MS | S | | R | R | R | R | R | R | R |
| 6 | RD 2948 | MS | S | R | MR | R | | R | S | S | MR | S | | R | R | R | R | R | R | S |
| 7 | RD 2967 | S | S | S | MS | S | | S | MS | S | S | S | | R | R | R | R | R | R | R |
| 8 | RD 2971 | S | S | S | MS | R | | MS | S | MS | R | S | | R | R | R | R | R | R | R |
| 9 | RD 2972 | R | R | R | R | R | | S | R | S | MS | S | | R | R | R | R | R | R | R |
| 10 | RD 2973 | R | R | R | R | R | | R | MS | S | MS | S | | R | R | R | R | R | R | R |
| 11 | RD 2975 | R | R | R | R | R | | S | S | R | R | S | | R | R | R | R | R | R | R |
| 12 | RD 2976 | R | R | R | R | R | | MR | R | S | S | S | | R | R | R | R | R | R | R |
| 13 | RD 2977 | S | MS | S | MS | R | | R | MR | S | MS | S | | R | R | R | R | R | R | R |
| 14 | RD 2978 | S | S | R | MS | R | | R | MR | R | S | R | | R | R | R | R | R | R | R |
| 15 | RD 2980 | S | S | S | S | R | | S | R | R | MR | S | | R | R | R | R | R | R | R |
| 16 | RD 2981 | MS | R | R | MS | R | | S | MS | R | S | S | | R | R | R | R | R | R | R |
| 17 | RD 2982 | R | R | R | R | R | | R | R | S | S | S | | R | R | R | R | R | R | R |

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|----|----------|----|----|----|----|----|--|----|----|----|----|----|--|----|----|----|----|----|----|----|
| 18 | RD 2983 | R | S | S | MR | R | | MR | R | S | S | S | | R | R | R | R | R | R | R |
| 19 | BK 1704 | R | S | R | R | R | | R | R | R | MS | R | | S | S | R | R | MX | S | S |
| 20 | BK 1714 | MS | S | R | S | R | | R | R | R | MS | S | | R | R | R | R | R | R | R |
| 21 | DWRB 186 | S | S | MS | S | MR | | R | MR | R | S | S | | R | R | R | R | R | R | R |
| 22 | BK 1601 | MR | MS | R | MS | R | | R | MS | S | MR | S | | MR | MR | S | MS | R | R | R |
| 23 | BK 1622 | MS | S | R | S | R | | MR | MR | S | S | S | | R | R | R | R | R | R | R |
| 24 | DWRB 152 | MS | S | R | MR | R | | MR | R | MR | MR | MR | | R | R | R | R | R | R | R |
| 25 | DWRB 137 | S | S | R | S | R | | MS | R | MR | S | S | | R | R | R | R | R | R | R |
| 26 | DWRB 143 | MS | MS | R | MR | R | | MR | R | MS | R | R | | R | R | R | R | R | R | R |
| 27 | DWRB 127 | R | R | R | R | R | | R | R | MR | R | R | | R | R | R | R | R | R | R |
| 28 | BK 1716 | S | S | R | MR | MR | | R | R | S | R | R | | MS | MS | R | MS | R | R | R |
| 29 | BK 1719 | R | R | R | R | R | | R | R | S | R | S | | MS | MR | R | S | R | MS | R |
| 30 | BK 1723 | R | R | R | R | R | | R | R | S | S | S | | S | S | S | S | R | S | S |
| 31 | BK 1725 | R | R | R | R | R | | MS | R | MS | S | R | | S | MS | S | S | MX | MS | R |
| 32 | DWRB 178 | R | R | R | R | R | | R | R | S | S | S | | MS | R | MS | S | R | MS | R |
| 33 | DWRB 180 | R | R | R | R | R | | R | R | R | MR | R | | S | S | R | R | MS | MS | S |
| 34 | HBL 113 | R | R | R | R | R | | MR | NG | R | S | MR | | R | MX | R | R | R | NG | R |
| 35 | HBL 276 | MS | S | S | S | S | | R | NG | R | R | S | | S | R | MS | R | MX | NG | R |
| 36 | HBL 812 | MS | R | R | R | R | | R | MR | R | R | S | | R | R | R | R | R | NG | R |
| 37 | HBL 814 | R | S | R | R | R | | R | R | R | R | R | | R | R | R | R | R | NG | R |
| 38 | HBL 822 | MS | MS | NG | R | R | | R | R | R | MS | S | | R | NG | MS | R | NG | R | R |
| 39 | BH 1011 | S | S | S | MS | MR | | R | R | R | R | MS | | MS | S | R | MS | R | MS | R |
| 40 | BH 1013 | R | R | R | R | R | | S | S | R | R | S | | S | S | S | S | S | S | S |
| 41 | BH 1014 | S | S | MS | MS | MS | | R | R | R | MR | MS | | R | S | R | S | R | MS | R |
| 42 | BH 1017 | S | MS | MS | R | R | | MS | S | MS | S | S | | R | R | R | R | R | R | R |
| 43 | BH 1018 | S | S | MS | MS | MS | | R | R | R | MR | R | | MS | S | MR | S | R | S | R |
| 44 | BH 1019 | S | S | MS | S | R | | S | R | R | MS | S | | R | R | R | R | R | R | R |
| 45 | BH 946 | S | S | MS | S | S | | R | R | R | MS | S | | R | S | S | S | MX | R | R |
| 46 | PL 751 | MS | S | R | MS | S | | S | R | R | R | R | | S | S | S | S | S | S | S |
| 47 | PL 890 | S | S | S | MS | MS | | R | R | R | R | R | | S | S | R | R | R | R | R |
| 48 | PL 900 | S | MS | MS | MS | MR | | R | MR | R | MR | S | | R | R | R | R | R | R | R |
| 49 | PL 902 | S | MS | R | MR | R | | S | S | MR | S | S | | R | R | R | R | R | R | R |
| 50 | KB 1633 | R | R | MS | R | R | | MR | R | MR | S | S | | MS | R | MR | MS | R | R | R |
| 51 | KB 1634 | S | S | R | MS | R | | MS | R | R | S | S | | R | R | R | R | R | R | R |
| 52 | HUB 113 | S | S | MS | MR | MS | | MS | S | R | S | S | | R | R | R | R | R | R | R |
| 53 | NDB 1698 | S | S | MS | R | MR | | S | R | S | MS | S | | R | R | R | R | S | S | MX |
| 54 | VLB 130 | R | R | R | R | R | | R | R | R | MR | R | | R | MS | R | R | R | R | R |

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|----|----------|----|----|----|----|----|--|----|----|----|----|----|--|----|----|----|----|----|----|----|
| 55 | VLB 153 | R | R | R | R | R | | R | R | MR | S | S | | R | S | R | R | S | S | S |
| 56 | VLB 159 | NG | NG | NG | NG | NG | | NG | R | R | NG | NG | | NG | NG | NG | NG | NG | NG | NG |
| 57 | UPB 1070 | NG | NG | NG | NG | NG | | MS | MR | R | R | NG | | NG | NG | NG | NG | NG | NG | NG |
| 58 | UPB 1071 | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | NG | NG |
| 59 | UPB 1076 | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | | NG | NG | NG | NG | NG | MS | NG |