

Supplementary Material

Nitrogen utilisation-efficient oilseed rape (*Brassica napus*) genotypes exhibit stronger growth attributes from flowering stage onwards

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Table S1. Differences in Yield and NUE among the 18 NUtE oilseed rape genotypes at maturity stage (BBCH89)

| NUtE | Entry no. | Seeds per silique | Yield per plant (g) | NUtE (g g ⁻¹) | NUE (g g ⁻¹) |
|-----------------|-----------|-------------------|---------------------|---------------------------|--------------------------|
| Nt-responder | 7 | 23.31 | 27.24 | 21.32 | 17.15 |
| | 9 | 26.83 | 23.78 | 21.62 | 16.21 |
| | 28 | 25.86 | 26.37 | 23.21 | 17.31 |
| | 40 | 28.68 | 29.27 | 24.74 | 18.49 |
| | 48 | 29.38 | 29.26 | 26.18 | 19.09 |
| | Mean | 26.81 | 27.18 | 23.41 | 17.65 |
| | SE | 2.16 | 2.05 | 1.85 | 1.02 |
| Nt-nonresponder | 22 | 21.65 | 19.84 | 16.89 | 15.72 |
| | 26 | 18.76 | 16.90 | 16.64 | 14.82 |
| | 27 | 14.60 | 16.08 | 16.70 | 13.90 |
| | 44 | 19.43 | 20.20 | 17.76 | 16.25 |
| | 50 | 17.08 | 14.82 | 15.91 | 12.86 |
| | Mean | 18.30 | 17.57 | 16.78 | 14.71 |
| | SE | 2.36 | 2.11 | 0.59 | 1.22 |
| Nt-efficient | 21 | 16.21 | 21.91 | 18.06 | 16.62 |
| | 42 | 16.93 | 19.26 | 19.41 | 15.31 |
| | 45 | 19.92 | 24.86 | 21.46 | 18.53 |
| | 48 | 18.43 | 19.41 | 18.77 | 14.91 |
| | Mean | 17.71 | 20.05 | 18.72 | 15.65 |
| | SE | 1.32 | 3.32 | 1.81 | 1.88 |
| Nt-inefficient | 8 | 12.24 | 11.90 | 14.44 | 11.37 |
| | 18 | 13.34 | 12.66 | 14.55 | 11.46 |
| | 39 | 12.88 | 12.26 | 12.91 | 10.74 |
| | 44 | 13.71 | 14.19 | 14.40 | 12.72 |
| | Mean | 13.85 | 13.17 | 14.44 | 11.83 |
| | SE | 1.69 | 1.14 | 0.95 | 0.82 |

Table S2. Differences in shoot biomass among the 18 NUtE oilseed rape genotypes

| Shoot biomass (g plant ⁻¹) | | | | | | |
|--|-----------|--------------------------|---------------------|-------------------------|---------------------------|-----------------------------|
| NUtE | Entry no. | Seedling stage (BBCH 15) | Bud Stage (BBCH 35) | Bolting stage (BBCH 50) | Flowering Stage (BBCH 65) | Pod-filling stage (BBCH 75) |
| Nt-responder | 7 | 4.55 | 11.00 | 18.48 | 25.44 | 24.65 |
| | 9 | 4.71 | 10.74 | 18.70 | 24.02 | 24.24 |
| | 28 | 4.41 | 11.89 | 19.13 | 26.29 | 23.61 |
| | 40 | 5.17 | 10.96 | 18.01 | 23.83 | 23.21 |
| | 48 | 4.05 | 10.46 | 17.39 | 27.50 | 22.62 |
| | Mean | 4.58 | 11.01 | 18.34 | 25.42 | 23.67 |
| | SE | 0.37 | 0.48 | 0.60 | 1.38 | 0.72 |
| Nt-nonresponder | 22 | 5.73 | 12.24 | 17.41 | 21.07 | 19.73 |
| | 26 | 5.95 | 12.73 | 17.64 | 21.08 | 20.33 |
| | 27 | 5.72 | 13.16 | 17.42 | 22.57 | 19.04 |
| | 44 | 6.34 | 12.19 | 18.39 | 21.98 | 20.82 |
| | 50 | 6.31 | 12.72 | 17.06 | 22.59 | 20.30 |
| | Mean | 6.01 | 12.61 | 17.58 | 21.86 | 20.04 |
| | SE | 0.27 | 0.36 | 0.44 | 0.68 | 0.61 |
| Nt-efficient | 21 | 3.28 | 8.29 | 15.59 | 20.37 | 19.05 |
| | 42 | 3.21 | 8.75 | 15.92 | 20.74 | 19.22 |
| | 45 | 3.67 | 8.55 | 15.48 | 20.01 | 19.08 |
| | 48 | 3.52 | 8.15 | 16.25 | 20.43 | 18.57 |
| | Mean | 4.00 | 9.29 | 16.06 | 20.83 | 19.24 |
| | SE | 1.17 | 1.73 | 0.57 | 0.91 | 0.57 |
| Nt-inefficient | 8 | 3.92 | 10.28 | 15.98 | 18.48 | 15.86 |
| | 18 | 3.82 | 9.98 | 15.88 | 18.33 | 15.86 |
| | 39 | 3.94 | 9.66 | 15.31 | 18.59 | 15.63 |
| | 44 | 3.74 | 9.86 | 15.91 | 17.83 | 15.97 |
| | Mean | 4.35 | 10.50 | 16.03 | 19.16 | 16.72 |
| | SE | 0.98 | 1.13 | 0.57 | 1.73 | 1.79 |

Table S3. Differences in shoot nitrogen concentration among the 18 NUtE oilseed rape genotypes

| | | Shoot nitrogen concentration (g kg ⁻¹) | | | | |
|-----------------|-----------|--|------------------------|----------------------------|------------------------------|--------------------------------|
| NUtE | Entry no. | Seedling stage (BBCH 15) | Bud stage (BBCH 35) | Bolting stage (BBCH 50) | Flowering stage (BBCH 65) | Pod-filling stage (BBCH 75) |
| Nt-responder | 7 | 13.10 | 18.96 | 13.10 | 10.95 | 19.27 |
| | 9 | 14.24 | 19.93 | 12.52 | 11.17 | 19.58 |
| | 28 | 13.06 | 19.09 | 12.07 | 11.13 | 19.35 |
| | 40 | 14.09 | 18.16 | 12.97 | 9.89 | 20.22 |
| | 48 | 13.26 | 19.28 | 12.87 | 10.43 | 19.75 |
| | Mean | 13.55 | 19.08 | 12.71 | 10.71 | 19.63 |
| | SE | 0.51 | 0.57 | 0.37 | 0.49 | 0.34 |
| Nt-nonresponder | 22 | 18.07 | 20.90 | 16.62 | 9.74 | 15.97 |
| | 26 | 18.80 | 19.92 | 15.58 | 9.46 | 15.80 |
| | 27 | 17.97 | 20.26 | 15.63 | 10.10 | 16.07 |
| | 44 | 18.82 | 20.95 | 14.80 | 9.32 | 16.20 |
| | 50 | 18.08 | 20.32 | 15.67 | 10.28 | 15.83 |
| | Mean | 18.35 | 20.47 | 15.66 | 9.78 | 15.97 |
| | SE | 0.38 | 0.40 | 0.58 | 0.37 | 0.15 |
| Nt-efficient | 21 | 9.18 | 15.94 | 11.70 | 10.68 | 18.10 |
| | 42 | 8.96 | 16.24 | 11.20 | 10.92 | 17.81 |
| | 45 | 8.97 | 15.63 | 11.33 | 10.80 | 17.59 |
| | 48 | 9.05 | 16.10 | 11.46 | 12.50 | 18.26 |
| | Mean | 10.85 | 16.85 | 12.27 | 11.04 | 17.52 |
| | SE | 3.62 | 1.75 | 1.71 | 0.76 | 0.88 |
| Nt-inefficient | 8 | 12.07 | 17.69 | 18.48 | 10.03 | 15.55 |
| | 18 | 12.35 | 17.18 | 18.37 | 9.60 | 15.87 |
| | 39 | 12.09 | 17.69 | 15.30 | 10.46 | 14.85 |
| | 44 | 11.85 | 17.65 | 16.40 | 9.42 | 15.21 |
| | Mean | 13.29 | 18.11 | 16.84 | 9.96 | 15.46 |
| | SE | 2.40 | 1.12 | 1.34 | 0.39 | 0.39 |

Table S4. Differences in shoot nitrogen accumulation among the 18 NUtE oilseed rape genotypes

| NUtE | Entry no. | Shoot nitrogen accumulation (g plant ⁻¹) | | | | |
|-----------------|-----------|--|-----------|---------------|-----------------|-------------------|
| | | Seedling stage | Bud stage | Bolting stage | Flowering stage | Pod-filling stage |
| | | (BBCH 15) | (BBCH 35) | (BBCH 50) | (BBCH 65) | (BBCH 75) |
| Nt-responder | 7 | 0.0596 | 0.2387 | 0.1813 | 0.1393 | 0.5145 |
| | 9 | 0.0927 | 0.2178 | 0.2087 | 0.1890 | 0.5934 |
| | 28 | 0.0443 | 0.3194 | 0.2430 | 0.1518 | 0.4736 |
| | 40 | 0.0973 | 0.2812 | 0.2336 | 0.1035 | 0.5106 |
| | 48 | 0.0496 | 0.2361 | 0.2585 | 0.1244 | 0.5806 |
| | Mean | 0.0687 | 0.2586 | 0.2250 | 0.1416 | 0.5345 |
| | SE | 0.0221 | 0.0368 | 0.0272 | 0.0286 | 0.0453 |
| Nt-nonresponder | 22 | 0.1034 | 0.3197 | 0.2229 | 0.0884 | 0.3939 |
| | 26 | 0.0940 | 0.3170 | 0.2748 | 0.0787 | 0.4607 |
| | 27 | 0.0799 | 0.3153 | 0.3420 | 0.1349 | 0.3022 |
| | 44 | 0.1193 | 0.2931 | 0.3017 | 0.1211 | 0.5355 |
| | 50 | 0.1310 | 0.3485 | 0.2907 | 0.1274 | 0.3814 |
| | Mean | 0.1055 | 0.3187 | 0.2864 | 0.1101 | 0.4147 |
| | SE | 0.0181 | 0.0177 | 0.0388 | 0.0223 | 0.0786 |
| Nt-efficient | 21 | 0.0387 | 0.2598 | 0.3956 | 0.1461 | 0.4989 |
| | 42 | 0.0386 | 0.2259 | 0.3721 | 0.1623 | 0.5613 |
| | 45 | 0.0411 | 0.2569 | 0.3521 | 0.1836 | 0.4797 |
| | 48 | 0.0419 | 0.2206 | 0.2664 | 0.1526 | 0.5854 |
| | Mean | 0.1310 | 0.3485 | 0.2907 | 0.1274 | 0.3814 |
| | SE | 0.0583 | 0.2623 | 0.3354 | 0.1544 | 0.5013 |
| Nt-inefficient | 8 | 0.0575 | 0.2936 | 0.3404 | 0.1533 | 0.3622 |
| | 18 | 0.0491 | 0.2573 | 0.2114 | 0.0963 | 0.3675 |
| | 39 | 0.0430 | 0.2925 | 0.2075 | 0.1181 | 0.4509 |
| | 44 | 0.0357 | 0.3032 | 0.2626 | 0.1107 | 0.3434 |
| | Mean | 0.1310 | 0.3485 | 0.2907 | 0.1274 | 0.3814 |
| | SE | 0.0633 | 0.2990 | 0.2625 | 0.1212 | 0.3811 |

Table S5. Differences in crop growth rate among the 18 NUtE oilseed rape genotypes

| Crop growth rate (g day ⁻¹) | | | | | | |
|---|-----------|--------------------|--------------------|--------------------|--------------------|--------------------|
| NUtE | Entry no. | Seedling | Bud | Bolting | Flowering | Pod-filling |
| | | stage (BBCH 15) | stage (BBCH 35) | stage (BBCH 50) | stage (BBCH 65) | stage (BBCH 75) |
| Nt-responder | 7 | 0.0758 | 0.1075 | 0.4985 | 0.4642 | 0.0131 |
| | 9 | 0.0785 | 0.1005 | 0.5309 | 0.3543 | 0.0038 |
| | 28 | 0.0734 | 0.1248 | 0.4828 | 0.4770 | 0.0446 |
| | 40 | 0.0862 | 0.0965 | 0.4697 | 0.3883 | 0.0104 |
| | 48 | 0.0674 | 0.1069 | 0.4617 | 0.6741 | 0.0814 |
| | Mean | 0.0763 | 0.1072 | 0.4887 | 0.4716 | 0.0307 |
| | SE | 0.0062 | 0.0097 | 0.0245 | 0.1112 | 0.0290 |
| Nt-nonresponder | 22 | 0.0954 | 0.1086 | 0.3448 | 0.2440 | 0.0223 |
| | 26 | 0.0992 | 0.1130 | 0.3270 | 0.2297 | 0.0126 |
| | 27 | 0.0954 | 0.1239 | 0.2839 | 0.3435 | 0.0589 |
| | 44 | 0.1057 | 0.0975 | 0.4134 | 0.2389 | 0.0193 |
| | 50 | 0.1051 | 0.1069 | 0.2890 | 0.3690 | 0.0382 |
| | Mean | 0.1002 | 0.1100 | 0.3316 | 0.2850 | 0.0303 |
| | SE | 0.0045 | 0.0086 | 0.0468 | 0.0589 | 0.0166 |
| Nt-efficient | 21 | 0.0547 | 0.0835 | 0.4869 | 0.3186 | 0.0221 |
| | 42 | 0.0535 | 0.0923 | 0.4780 | 0.3215 | 0.0254 |
| | 45 | 0.0612 | 0.0813 | 0.4619 | 0.3018 | 0.0154 |
| | 48 | 0.0587 | 0.0772 | 0.5397 | 0.2789 | 0.0310 |
| | Mean | 0.0570 | 0.0836 | 0.4916 | 0.3052 | 0.0235 |
| | SE | 0.0031 | 0.0055 | 0.0292 | 0.0169 | 0.0056 |
| Nt-inefficient | 8 | 0.0653 | 0.1060 | 0.3799 | 0.1666 | 0.0436 |
| | 18 | 0.0637 | 0.1027 | 0.3935 | 0.1632 | 0.0411 |
| | 39 | 0.0657 | 0.0953 | 0.3768 | 0.2185 | 0.0494 |
| | 44 | 0.0624 | 0.1019 | 0.4036 | 0.1276 | 0.0309 |
| | Mean | 0.0643 | 0.1015 | 0.3884 | 0.1690 | 0.0412 |
| | | 0.0013 | 0.0039 | 0.0108 | 0.0324 | 0.0067 |

Table S6. Differences in net photosynthetic rate among the 18 NUtE oilseed rape genotypes

| Net photosynthetic rate ($\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$) | | | | | | |
|--|-----------|--------------------|--------------------|--------------------|--------------------|--------------------|
| NUtE | Entry no. | Seedling | Bud | Bolting | Flowering | Pod-filling |
| | | stage (BBCH 15) | stage (BBCH 35) | stage (BBCH 50) | stage (BBCH 65) | stage (BBCH 75) |
| Nt-responder | 7 | 5.14 | 5.98 | 12.29 | 24.85 | 5.55 |
| | 9 | 6.17 | 6.24 | 14.33 | 24.60 | 5.94 |
| | 28 | 5.22 | 6.70 | 16.45 | 26.48 | 6.02 |
| | 40 | 5.46 | 6.10 | 16.91 | 25.73 | 5.99 |
| | 48 | 4.75 | 6.75 | 15.51 | 25.43 | 5.08 |
| | Mean | 5.35 | 6.35 | 15.10 | 25.42 | 5.72 |
| | SE | 0.47 | 0.31 | 1.66 | 0.67 | 0.36 |
| Nt-nonresponder | 22 | 6.45 | 8.69 | 16.91 | 21.70 | 3.30 |
| | 26 | 5.67 | 8.31 | 15.33 | 22.07 | 3.60 |
| | 27 | 5.24 | 7.37 | 16.48 | 21.05 | 3.25 |
| | 44 | 6.60 | 8.77 | 17.20 | 22.62 | 3.65 |
| | 50 | 6.06 | 7.38 | 16.11 | 23.43 | 3.45 |
| | Mean | 6.00 | 8.10 | 16.41 | 22.17 | 3.45 |
| | SE | 0.50 | 0.62 | 0.65 | 0.81 | 0.16 |
| Nt-efficient | 21 | 4.23 | 5.49 | 13.45 | 22.58 | 4.37 |
| | 42 | 4.18 | 5.48 | 14.37 | 23.48 | 4.69 |
| | 45 | 4.05 | 5.53 | 14.10 | 24.24 | 4.75 |
| | 48 | 4.29 | 5.04 | 14.57 | 22.92 | 4.27 |
| | Mean | 4.56 | 5.78 | 14.52 | 23.33 | 4.31 |
| | SE | 0.75 | 0.82 | 0.88 | 0.56 | 0.47 |
| Nt-inefficient | 8 | 5.76 | 6.68 | 15.52 | 20.86 | 3.53 |
| | 18 | 5.65 | 6.40 | 15.31 | 21.39 | 3.21 |
| | 39 | 5.53 | 6.73 | 15.07 | 20.72 | 3.11 |
| | 44 | 4.98 | 6.57 | 15.97 | 20.85 | 2.41 |
| | Mean | 5.60 | 6.75 | 15.60 | 21.45 | 3.14 |
| | SE | 0.35 | 0.33 | 0.39 | 1.02 | 0.40 |

Table S7. Differences in SPAD values among the 18 NUtE oilseed rape genotypes

| NUtE | Entry no. | SPAD values | | | | |
|-----------------|-----------|----------------|-----------|---------------|-----------------|-------------------|
| | | Seedling stage | Bud stage | Bolting stage | Flowering stage | Pod-filling stage |
| | | (BBCH 15) | (BBCH 35) | (BBCH 50) | (BBCH 65) | (BBCH 75) |
| Nt-responder | 7 | 39.9 | 43.93 | 50.26 | 59.42 | 45.15 |
| | 9 | 39.7 | 44.26 | 50.26 | 50.62 | 44.13 |
| | 28 | 40.1 | 44.61 | 53.04 | 57.83 | 46.20 |
| | 40 | 38.3 | 43.85 | 50.79 | 51.40 | 40.83 |
| | 48 | 37.7 | 44.44 | 55.88 | 48.69 | 42.50 |
| | Mean | 39.14 | 44.22 | 52.05 | 53.59 | 43.76 |
| | SE | 0.96 | 0.29 | 2.17 | 4.23 | 1.91 |
| Nt-nonresponder | 22 | 42.9 | 46.37 | 52.53 | 51.26 | 43.30 |
| | 26 | 41.2 | 47.20 | 57.56 | 47.78 | 40.30 |
| | 27 | 40.4 | 49.08 | 43.10 | 50.66 | 38.25 |
| | 44 | 44.2 | 46.90 | 48.57 | 54.61 | 38.68 |
| | 50 | 43.7 | 48.87 | 51.11 | 56.41 | 36.33 |
| | Mean | 42.48 | 47.68 | 50.57 | 52.14 | 39.37 |
| | SE | 1.46 | 1.09 | 4.75 | 3.04 | 2.34 |
| Nt-efficient | 21 | 36.90 | 40.27 | 50.85 | 52.73 | 42.20 |
| | 42 | 34.70 | 45.58 | 42.41 | 49.58 | 40.15 |
| | 45 | 39.20 | 43.29 | 41.65 | 51.12 | 40.90 |
| | 48 | 38.60 | 44.73 | 51.51 | 49.29 | 42.85 |
| | Mean | 38.62 | 44.55 | 47.51 | 51.83 | 40.49 |
| | SE | 2.98 | 2.82 | 4.48 | 2.60 | 2.28 |
| Nt-inefficient | 8 | 37.90 | 51.86 | 50.20 | 49.73 | 33.70 |
| | 18 | 37.90 | 45.68 | 48.45 | 50.23 | 42.15 |
| | 39 | 39.20 | 42.28 | 50.20 | 48.92 | 37.10 |
| | 44 | 41.80 | 44.41 | 45.99 | 50.72 | 38.60 |
| | Mean | 40.10 | 46.62 | 49.19 | 51.20 | 37.58 |
| | SE | 2.30 | 3.38 | 1.82 | 2.67 | 2.78 |

Table S8. Differences in leaf GS activity among the 18 NUtE oilseed rape genotypes

| Leaf GS activity ($\mu\text{g NO}_2^- \cdot \text{g}^{-1}$ fresh weight $\cdot \text{h}^{-1}$) | | | | | | |
|--|-----------|--------------------------|---------------------|-------------------------|---------------------------|-----------------------------|
| NUtE | Entry no. | Seedling stage (BBCH 15) | Bud stage (BBCH 35) | Bolting stage (BBCH 50) | Flowering stage (BBCH 65) | Pod-filling stage (BBCH 75) |
| Nt-responder | 7 | 26.57 | 36.10 | 65.01 | 104.69 | 20.92 |
| | 9 | 25.95 | 35.93 | 58.35 | 99.25 | 19.14 |
| | 28 | 26.04 | 34.71 | 67.34 | 91.21 | 19.68 |
| | 40 | 25.87 | 34.49 | 59.66 | 93.24 | 19.00 |
| | 48 | 26.32 | 36.43 | 61.90 | 100.14 | 19.48 |
| | Mean | 26.15 | 35.53 | 62.45 | 97.71 | 19.64 |
| | SE | 0.26 | 0.78 | 3.33 | 4.88 | 0.68 |
| Nt-nonresponder | 22 | 29.18 | 38.90 | 59.91 | 63.90 | 15.84 |
| | 26 | 29.98 | 39.98 | 58.25 | 69.76 | 15.38 |
| | 27 | 30.04 | 39.39 | 59.76 | 71.41 | 16.01 |
| | 44 | 30.47 | 40.62 | 57.33 | 73.63 | 14.86 |
| | 50 | 31.29 | 41.73 | 58.61 | 81.97 | 14.72 |
| | Mean | 30.19 | 40.12 | 58.77 | 72.13 | 15.36 |
| | SE | 0.69 | 0.99 | 0.96 | 5.88 | 0.51 |
| Nt-efficient | 21 | 23.76 | 39.01 | 48.54 | 69.44 | 17.31 |
| | 42 | 24.95 | 40.60 | 50.34 | 89.19 | 18.50 |
| | 45 | 21.16 | 35.54 | 46.56 | 87.38 | 16.98 |
| | 48 | 27.25 | 43.66 | 55.40 | 69.44 | 18.03 |
| | Mean | 25.68 | 40.11 | 51.89 | 79.48 | 17.11 |
| | SE | 3.42 | 2.74 | 4.46 | 8.54 | 1.31 |
| Nt-inefficient | 8 | 21.34 | 31.78 | 46.60 | 50.14 | 12.04 |
| | 18 | 34.18 | 48.90 | 48.06 | 47.26 | 10.90 |
| | 39 | 23.23 | 34.31 | 43.08 | 53.07 | 12.53 |
| | 44 | 31.26 | 45.01 | 46.57 | 61.24 | 15.38 |
| | Mean | 28.26 | 40.35 | 48.58 | 58.74 | 13.11 |
| | SE | 5.03 | 6.43 | 5.27 | 12.52 | 1.68 |

Table S9. Differences in leaf GOGAT activity among the 18 NUtE oilseed rape genotypes

| Leaf GOGAT activity ($\mu\text{g NO}_2^- \cdot \text{g}^{-1}$ fresh weight $\cdot \text{h}^{-1}$) | | | | | | |
|---|-----------|--------------------------|---------------------|-------------------------|---------------------------|-----------------------------|
| NUtE | Entry no. | Seedling stage (BBCH 15) | Bud stage (BBCH 35) | Bolting stage (BBCH 50) | Flowering stage (BBCH 65) | Pod-filling stage (BBCH 75) |
| Nt-responder | 7 | 20.96 | 31.54 | 42.81 | 55.12 | 16.49 |
| | 9 | 20.76 | 28.29 | 42.57 | 60.18 | 14.17 |
| | 28 | 21.15 | 30.86 | 47.52 | 51.66 | 13.67 |
| | 40 | 22.00 | 29.39 | 44.56 | 65.44 | 13.89 |
| | 48 | 21.53 | 30.15 | 46.20 | 49.25 | 15.18 |
| | Mean | 21.28 | 30.05 | 44.73 | 56.33 | 14.68 |
| | SE | 0.44 | 1.13 | 1.91 | 5.85 | 1.04 |
| Nt-nonresponder | 22 | 25.22 | 35.44 | 50.93 | 52.67 | 10.58 |
| | 26 | 22.24 | 35.56 | 48.97 | 50.18 | 9.34 |
| | 27 | 23.72 | 36.67 | 45.63 | 51.17 | 10.67 |
| | 44 | 23.88 | 33.19 | 47.13 | 48.22 | 8.45 |
| | 50 | 20.66 | 34.09 | 44.76 | 52.96 | 9.61 |
| | Mean | 23.14 | 34.99 | 47.48 | 51.04 | 9.73 |
| | SE | 1.56 | 1.22 | 2.24 | 1.74 | 0.83 |
| Nt-efficient | 21 | 19.30 | 28.18 | 40.06 | 50.12 | 12.45 |
| | 42 | 20.39 | 29.18 | 40.72 | 54.29 | 11.99 |
| | 45 | 20.05 | 29.05 | 41.64 | 53.67 | 11.34 |
| | 48 | 21.11 | 30.27 | 42.78 | 49.8 | 12.46 |
| | Mean | 20.30 | 30.15 | 41.99 | 52.17 | 11.57 |
| | SE | 0.61 | 2.08 | 1.66 | 1.85 | 1.06 |
| Nt-inefficient | 8 | 22.22 | 31.14 | 42.66 | 47.44 | 8.56 |
| | 18 | 20.91 | 30.33 | 41.88 | 46.98 | 7.89 |
| | 39 | 21.86 | 30.17 | 43.66 | 48.26 | 8.23 |
| | 44 | 22.08 | 29.08 | 42.56 | 48.64 | 8.36 |
| | Mean | 21.55 | 30.96 | 43.10 | 48.86 | 8.53 |
| | SE | 0.64 | 1.70 | 1.00 | 2.13 | 0.58 |