

Impacts of Smooth Pigweed (*Amaranthus hybridus*) on Cover Crops in Southern Ontario

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Supplementary Data

Germination Experiment

Table 1. Raw data of cover crop species germination index. Includes data for control (0% of tea solution, i.e. water only) as well as all pigweed tea solution dilution treatments (i.e. 10%, 25%, 50%, 75% and 100%) for all species of cover crops tested. Each replicate represents a Petri dish with 10 seeds.

| SPECIES | % DILUTION OF TEA SOLUTION | REPLICATE | GERMINATION INDEX |
|---------|----------------------------|-----------|-------------------|
| Chicory | Control | 1 | 53 |
| Chicory | Control | 2 | 45 |
| Chicory | Control | 3 | 62 |
| Chicory | Control | 4 | 56 |
| Chicory | Control | 5 | 53 |
| Chicory | Control | 6 | 53 |
| Chicory | Control | 7 | 55 |
| Chicory | Control | 8 | 56 |
| Chicory | Control | 9 | 55 |
| Chicory | Control | 10 | 49 |
| Chicory | 10 | 1 | 57 |
| Chicory | 10 | 2 | 38 |
| Chicory | 10 | 3 | 50 |
| Chicory | 10 | 4 | 48 |
| Chicory | 10 | 5 | 46 |
| Chicory | 10 | 6 | 45 |
| Chicory | 10 | 7 | 51 |
| Chicory | 10 | 8 | 50 |
| Chicory | 10 | 9 | 40 |
| Chicory | 10 | 10 | 39 |
| Chicory | 25 | 1 | 52 |
| Chicory | 25 | 2 | 48 |
| Chicory | 25 | 3 | 47 |
| Chicory | 25 | 4 | 53 |
| Chicory | 25 | 5 | 36 |
| Chicory | 25 | 6 | 45 |
| Chicory | 25 | 7 | 50 |

| | | | |
|---------|---------|----|----|
| Chicory | 25 | 8 | 46 |
| Chicory | 25 | 9 | 45 |
| Chicory | 25 | 10 | 49 |
| Chicory | 50 | 1 | 38 |
| Chicory | 50 | 2 | 41 |
| Chicory | 50 | 3 | 45 |
| Chicory | 50 | 4 | 43 |
| Chicory | 50 | 5 | 50 |
| Chicory | 50 | 6 | 45 |
| Chicory | 50 | 7 | 48 |
| Chicory | 50 | 8 | 41 |
| Chicory | 50 | 9 | 39 |
| Chicory | 50 | 10 | 42 |
| Chicory | 75 | 1 | 47 |
| Chicory | 75 | 2 | 46 |
| Chicory | 75 | 3 | 44 |
| Chicory | 75 | 4 | 43 |
| Chicory | 75 | 5 | 22 |
| Chicory | 75 | 6 | 44 |
| Chicory | 75 | 7 | 45 |
| Chicory | 75 | 8 | 43 |
| Chicory | 75 | 9 | 47 |
| Chicory | 75 | 10 | 48 |
| Chicory | 100 | 1 | 28 |
| Chicory | 100 | 2 | 16 |
| Chicory | 100 | 3 | 40 |
| Chicory | 100 | 4 | 30 |
| Chicory | 100 | 5 | 12 |
| Chicory | 100 | 6 | 28 |
| Chicory | 100 | 7 | 29 |
| Chicory | 100 | 8 | 31 |
| Chicory | 100 | 9 | 35 |
| Chicory | 100 | 10 | 29 |
| Oilseed | | | |
| Radish | Control | 1 | 54 |
| Oilseed | | | |
| Radish | Control | 2 | 51 |
| Oilseed | | | |
| Radish | Control | 3 | 58 |
| Oilseed | | | |
| Radish | Control | 4 | 63 |
| Oilseed | | | |
| Radish | Control | 5 | 56 |

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|---------|---------|----|----|
| Oilseed | | | |
| Radish | Control | 6 | 55 |
| Oilseed | | | |
| Radish | Control | 7 | 59 |
| Oilseed | | | |
| Radish | Control | 8 | 58 |
| Oilseed | | | |
| Radish | Control | 9 | 62 |
| Oilseed | | | |
| Radish | Control | 10 | 60 |
| Oilseed | | | |
| Radish | 10 | 1 | 63 |
| Oilseed | | | |
| Radish | 10 | 2 | 62 |
| Oilseed | | | |
| Radish | 10 | 3 | 53 |
| Oilseed | | | |
| Radish | 10 | 4 | 37 |
| Oilseed | | | |
| Radish | 10 | 5 | 55 |
| Oilseed | | | |
| Radish | 10 | 6 | 60 |
| Oilseed | | | |
| Radish | 10 | 7 | 59 |
| Oilseed | | | |
| Radish | 10 | 8 | 53 |
| Oilseed | | | |
| Radish | 10 | 9 | 60 |
| Oilseed | | | |
| Radish | 10 | 10 | 52 |
| Oilseed | | | |
| Radish | 25 | 1 | 43 |
| Oilseed | | | |
| Radish | 25 | 2 | 48 |
| Oilseed | | | |
| Radish | 25 | 3 | 64 |
| Oilseed | | | |
| Radish | 25 | 4 | 63 |
| Oilseed | | | |
| Radish | 25 | 5 | 55 |
| Oilseed | | | |
| Radish | 25 | 6 | 54 |
| Oilseed | | | |
| Radish | 25 | 7 | 51 |
| Oilseed | | | |
| Radish | 25 | 8 | 60 |
| Oilseed | | | |
| Radish | 25 | 9 | 49 |

| | | | |
|---------|-----|----|----|
| Oilseed | | | |
| Radish | 25 | 10 | 51 |
| Oilseed | | | |
| Radish | 50 | 1 | 50 |
| Oilseed | | | |
| Radish | 50 | 2 | 54 |
| Oilseed | | | |
| Radish | 50 | 3 | 42 |
| Oilseed | | | |
| Radish | 50 | 4 | 49 |
| Oilseed | | | |
| Radish | 50 | 5 | 59 |
| Oilseed | | | |
| Radish | 50 | 6 | 49 |
| Oilseed | | | |
| Radish | 50 | 7 | 54 |
| Oilseed | | | |
| Radish | 50 | 8 | 50 |
| Oilseed | | | |
| Radish | 50 | 9 | 50 |
| Oilseed | | | |
| Radish | 50 | 10 | 53 |
| Oilseed | | | |
| Radish | 75 | 1 | 39 |
| Oilseed | | | |
| Radish | 75 | 2 | 40 |
| Oilseed | | | |
| Radish | 75 | 3 | 54 |
| Oilseed | | | |
| Radish | 75 | 4 | 51 |
| Oilseed | | | |
| Radish | 75 | 5 | 46 |
| Oilseed | | | |
| Radish | 75 | 6 | 44 |
| Oilseed | | | |
| Radish | 75 | 7 | 45 |
| Oilseed | | | |
| Radish | 75 | 8 | 51 |
| Oilseed | | | |
| Radish | 75 | 9 | 47 |
| Oilseed | | | |
| Radish | 75 | 10 | 52 |
| Oilseed | | | |
| Radish | 100 | 1 | 43 |
| Oilseed | | | |
| Radish | 100 | 2 | 36 |
| Oilseed | | | |
| Radish | 100 | 3 | 49 |

| | | | |
|------------|---------|----|----|
| Oilseed | | | |
| Radish | 100 | 4 | 38 |
| Oilseed | | | |
| Radish | 100 | 5 | 44 |
| Oilseed | | | |
| Radish | 100 | 6 | 43 |
| Oilseed | | | |
| Radish | 100 | 7 | 36 |
| Oilseed | | | |
| Radish | 100 | 8 | 37 |
| Oilseed | | | |
| Radish | 100 | 9 | 41 |
| Oilseed | | | |
| Radish | 100 | 10 | 36 |
| Red Clover | Control | 1 | 70 |
| Red Clover | Control | 2 | 70 |
| Red Clover | Control | 3 | 70 |
| Red Clover | Control | 4 | 70 |
| Red Clover | Control | 5 | 66 |
| Red Clover | Control | 6 | 69 |
| Red Clover | Control | 7 | 70 |
| Red Clover | Control | 8 | 70 |
| Red Clover | Control | 9 | 68 |
| Red Clover | Control | 10 | 70 |
| Red Clover | 10 | 1 | 70 |
| Red Clover | 10 | 2 | 67 |
| Red Clover | 10 | 3 | 70 |
| Red Clover | 10 | 4 | 68 |
| Red Clover | 10 | 5 | 69 |
| Red Clover | 10 | 6 | 70 |
| Red Clover | 10 | 7 | 67 |
| Red Clover | 10 | 8 | 67 |
| Red Clover | 10 | 9 | 68 |
| Red Clover | 10 | 10 | 70 |
| Red Clover | 25 | 1 | 69 |
| Red Clover | 25 | 2 | 70 |
| Red Clover | 25 | 3 | 70 |
| Red Clover | 25 | 4 | 65 |
| Red Clover | 25 | 5 | 70 |
| Red Clover | 25 | 6 | 69 |
| Red Clover | 25 | 7 | 70 |
| Red Clover | 25 | 8 | 70 |
| Red Clover | 25 | 9 | 65 |
| Red Clover | 25 | 10 | 68 |

| | | | |
|------------|---------|----|----|
| Red Clover | 50 | 1 | 68 |
| Red Clover | 50 | 2 | 65 |
| Red Clover | 50 | 3 | 66 |
| Red Clover | 50 | 4 | 68 |
| Red Clover | 50 | 5 | 64 |
| Red Clover | 50 | 6 | 65 |
| Red Clover | 50 | 7 | 64 |
| Red Clover | 50 | 8 | 69 |
| Red Clover | 50 | 9 | 68 |
| Red Clover | 50 | 10 | 64 |
| Red Clover | 75 | 1 | 61 |
| Red Clover | 75 | 2 | 62 |
| Red Clover | 75 | 3 | 64 |
| Red Clover | 75 | 4 | 61 |
| Red Clover | 75 | 5 | 65 |
| Red Clover | 75 | 6 | 62 |
| Red Clover | 75 | 7 | 61 |
| Red Clover | 75 | 8 | 62 |
| Red Clover | 75 | 9 | 64 |
| Red Clover | 75 | 10 | 61 |
| Red Clover | 100 | 1 | 62 |
| Red Clover | 100 | 2 | 62 |
| Red Clover | 100 | 3 | 65 |
| Red Clover | 100 | 4 | 64 |
| Red Clover | 100 | 5 | 53 |
| Red Clover | 100 | 6 | 60 |
| Red Clover | 100 | 7 | 61 |
| Red Clover | 100 | 8 | 58 |
| Red Clover | 100 | 9 | 60 |
| Red Clover | 100 | 10 | 59 |
| Alfalfa | Control | 1 | 70 |
| Alfalfa | Control | 2 | 70 |
| Alfalfa | Control | 3 | 70 |
| Alfalfa | Control | 4 | 70 |
| Alfalfa | Control | 5 | 67 |
| Alfalfa | Control | 6 | 70 |
| Alfalfa | Control | 7 | 69 |
| Alfalfa | Control | 8 | 70 |
| Alfalfa | Control | 9 | 70 |
| Alfalfa | Control | 10 | 67 |
| Alfalfa | 10 | 1 | 70 |
| Alfalfa | 10 | 2 | 66 |
| Alfalfa | 10 | 3 | 70 |

| | | | |
|---------|-----|----|----|
| Alfalfa | 10 | 4 | 67 |
| Alfalfa | 10 | 5 | 66 |
| Alfalfa | 10 | 6 | 68 |
| Alfalfa | 10 | 7 | 69 |
| Alfalfa | 10 | 8 | 66 |
| Alfalfa | 10 | 9 | 70 |
| Alfalfa | 10 | 10 | 68 |
| Alfalfa | 25 | 1 | 65 |
| Alfalfa | 25 | 2 | 69 |
| Alfalfa | 25 | 3 | 66 |
| Alfalfa | 25 | 4 | 65 |
| Alfalfa | 25 | 5 | 27 |
| Alfalfa | 25 | 6 | 67 |
| Alfalfa | 25 | 7 | 69 |
| Alfalfa | 25 | 8 | 65 |
| Alfalfa | 25 | 9 | 68 |
| Alfalfa | 25 | 10 | 68 |
| Alfalfa | 50 | 1 | 59 |
| Alfalfa | 50 | 2 | 60 |
| Alfalfa | 50 | 3 | 63 |
| Alfalfa | 50 | 4 | 48 |
| Alfalfa | 50 | 5 | 60 |
| Alfalfa | 50 | 6 | 60 |
| Alfalfa | 50 | 7 | 57 |
| Alfalfa | 50 | 8 | 60 |
| Alfalfa | 50 | 9 | 61 |
| Alfalfa | 50 | 10 | 58 |
| Alfalfa | 75 | 1 | 60 |
| Alfalfa | 75 | 2 | 50 |
| Alfalfa | 75 | 3 | 59 |
| Alfalfa | 75 | 4 | 60 |
| Alfalfa | 75 | 5 | 55 |
| Alfalfa | 75 | 6 | 59 |
| Alfalfa | 75 | 7 | 57 |
| Alfalfa | 75 | 8 | 60 |
| Alfalfa | 75 | 9 | 60 |
| Alfalfa | 75 | 10 | 57 |
| Alfalfa | 100 | 1 | 50 |
| Alfalfa | 100 | 2 | 50 |
| Alfalfa | 100 | 3 | 49 |
| Alfalfa | 100 | 4 | 59 |
| Alfalfa | 100 | 5 | 61 |
| Alfalfa | 100 | 6 | 49 |

| | | | |
|------------|---------|----|----|
| Alfalfa | 100 | 7 | 48 |
| Alfalfa | 100 | 8 | 48 |
| Alfalfa | 100 | 9 | 60 |
| Alfalfa | 100 | 10 | 55 |
| Annual Rye | Control | 1 | 55 |
| Annual Rye | Control | 2 | 56 |
| Annual Rye | Control | 3 | 56 |
| Annual Rye | Control | 4 | 54 |
| Annual Rye | Control | 5 | 54 |
| Annual Rye | Control | 6 | 55 |
| Annual Rye | Control | 7 | 56 |
| Annual Rye | Control | 8 | 56 |
| Annual Rye | Control | 9 | 55 |
| Annual Rye | Control | 10 | 54 |
| Annual Rye | 10 | 1 | 53 |
| Annual Rye | 10 | 2 | 45 |
| Annual Rye | 10 | 3 | 55 |
| Annual Rye | 10 | 4 | 54 |
| Annual Rye | 10 | 5 | 52 |
| Annual Rye | 10 | 6 | 46 |
| Annual Rye | 10 | 7 | 52 |
| Annual Rye | 10 | 8 | 50 |
| Annual Rye | 10 | 9 | 47 |
| Annual Rye | 10 | 10 | 49 |
| Annual Rye | 25 | 1 | 55 |
| Annual Rye | 25 | 2 | 55 |
| Annual Rye | 25 | 3 | 54 |
| Annual Rye | 25 | 4 | 44 |
| Annual Rye | 25 | 5 | 48 |
| Annual Rye | 25 | 6 | 48 |
| Annual Rye | 25 | 7 | 47 |
| Annual Rye | 25 | 8 | 51 |
| Annual Rye | 25 | 9 | 50 |
| Annual Rye | 25 | 10 | 50 |
| Annual Rye | 50 | 1 | 51 |
| Annual Rye | 50 | 2 | 49 |
| Annual Rye | 50 | 3 | 52 |
| Annual Rye | 50 | 4 | 49 |
| Annual Rye | 50 | 5 | 49 |
| Annual Rye | 50 | 6 | 50 |
| Annual Rye | 50 | 7 | 49 |
| Annual Rye | 50 | 8 | 49 |
| Annual Rye | 50 | 9 | 51 |

| | | | |
|------------|-----|----|----|
| Annual Rye | 50 | 10 | 50 |
| Annual Rye | 75 | 1 | 51 |
| Annual Rye | 75 | 2 | 45 |
| Annual Rye | 75 | 3 | 44 |
| Annual Rye | 75 | 4 | 52 |
| Annual Rye | 75 | 5 | 47 |
| Annual Rye | 75 | 6 | 45 |
| Annual Rye | 75 | 7 | 50 |
| Annual Rye | 75 | 8 | 44 |
| Annual Rye | 75 | 9 | 45 |
| Annual Rye | 75 | 10 | 50 |
| Annual Rye | 100 | 1 | 34 |
| Annual Rye | 100 | 2 | 50 |
| Annual Rye | 100 | 3 | 49 |
| Annual Rye | 100 | 4 | 42 |
| Annual Rye | 100 | 5 | 45 |
| Annual Rye | 100 | 6 | 45 |
| Annual Rye | 100 | 7 | 46 |
| Annual Rye | 100 | 8 | 50 |
| Annual Rye | 100 | 9 | 43 |
| Annual Rye | 100 | 10 | 49 |

Plant Growth Experiment (Tea)

Table 2. Raw data of cover crop species shoot and root dry weights. Includes data for control (water only) as well as all pigweed tea solution dilution treatments (i.e. 25%, 50%, 75% and 100%) for all species of cover crop tested.

| Species | Organ | % DILUTION OF TEA SOLUTION | REPLICATE | DRY WEIGHT (g) |
|----------------|--------------|---|------------------|-------------------------------|
| Chicory | Root | Control | 1 | 0.28 |
| Chicory | Root | Control | 2 | 0.18 |
| Chicory | Root | Control | 3 | 0.12 |
| Chicory | Root | Control | 4 | 0.07 |
| Chicory | Root | Control | 5 | 0.21 |
| Chicory | Root | Control | 6 | 0.13 |
| Chicory | Root | Control | 7 | 0.29 |
| Chicory | Root | Control | 8 | 0.13 |
| Chicory | Root | Control | 9 | 0.11 |
| Chicory | Root | Control | 10 | 0.14 |
| Chicory | Root | 25 | 1 | 0.14 |
| Chicory | Root | 25 | 2 | 0.09 |
| Chicory | Root | 25 | 3 | 0.26 |
| Chicory | Root | 25 | 4 | 0.15 |
| Chicory | Root | 25 | 5 | 0.24 |
| Chicory | Root | 25 | 6 | 0.15 |
| Chicory | Root | 25 | 7 | 0.16 |
| Chicory | Root | 25 | 8 | 0.25 |
| Chicory | Root | 25 | 9 | 0.14 |
| Chicory | Root | 25 | 10 | 0.15 |
| Chicory | Root | 50 | 1 | 0.16 |
| Chicory | Root | 50 | 2 | 0.26 |
| Chicory | Root | 50 | 3 | 0.21 |
| Chicory | Root | 50 | 4 | 0.14 |
| Chicory | Root | 50 | 5 | 0.19 |
| Chicory | Root | 50 | 6 | 0.01 |
| Chicory | Root | 50 | 7 | 0.10 |
| Chicory | Root | 50 | 8 | 0.07 |
| Chicory | Root | 50 | 9 | 0.13 |
| Chicory | Root | 50 | 10 | 0.14 |
| Chicory | Root | 75 | 1 | 0.14 |
| Chicory | Root | 75 | 2 | 0.14 |
| Chicory | Root | 75 | 3 | 0.15 |
| Chicory | Root | 75 | 4 | 0.10 |

| | | | | |
|---------|-------|---------|----|------|
| Chicory | Root | 75 | 5 | 0.22 |
| Chicory | Root | 75 | 6 | 0.28 |
| Chicory | Root | 75 | 7 | 0.16 |
| Chicory | Root | 75 | 8 | 0.24 |
| Chicory | Root | 75 | 9 | 0.06 |
| Chicory | Root | 75 | 10 | 0.20 |
| Chicory | Root | 100 | 1 | 0.16 |
| Chicory | Root | 100 | 2 | 0.06 |
| Chicory | Root | 100 | 3 | 0.25 |
| Chicory | Root | 100 | 4 | 0.11 |
| Chicory | Root | 100 | 5 | 0.17 |
| Chicory | Root | 100 | 6 | 0.12 |
| Chicory | Root | 100 | 7 | 0.08 |
| Chicory | Root | 100 | 8 | 0.20 |
| Chicory | Root | 100 | 9 | 0.30 |
| Chicory | Root | 100 | 10 | 0.30 |
| Chicory | Shoot | Control | 1 | 0.60 |
| Chicory | Shoot | Control | 2 | 0.65 |
| Chicory | Shoot | Control | 3 | 0.54 |
| Chicory | Shoot | Control | 4 | 0.39 |
| Chicory | Shoot | Control | 5 | 0.73 |
| Chicory | Shoot | Control | 6 | 0.46 |
| Chicory | Shoot | Control | 7 | 0.81 |
| Chicory | Shoot | Control | 8 | 0.14 |
| Chicory | Shoot | Control | 9 | 0.54 |
| Chicory | Shoot | Control | 10 | 0.55 |
| Chicory | Shoot | 25 | 1 | 0.66 |
| Chicory | Shoot | 25 | 2 | 0.73 |
| Chicory | Shoot | 25 | 3 | 0.83 |
| Chicory | Shoot | 25 | 4 | 0.62 |
| Chicory | Shoot | 25 | 5 | 0.80 |
| Chicory | Shoot | 25 | 6 | 0.61 |
| Chicory | Shoot | 25 | 7 | 0.69 |
| Chicory | Shoot | 25 | 8 | 1.02 |
| Chicory | Shoot | 25 | 9 | 0.26 |
| Chicory | Shoot | 25 | 10 | 0.57 |
| Chicory | Shoot | 50 | 1 | 0.71 |
| Chicory | Shoot | 50 | 2 | 0.86 |
| Chicory | Shoot | 50 | 3 | 0.79 |
| Chicory | Shoot | 50 | 4 | 0.52 |
| Chicory | Shoot | 50 | 5 | 1.14 |
| Chicory | Shoot | 50 | 6 | 0.20 |
| Chicory | Shoot | 50 | 7 | 0.66 |

| | | | | |
|---------|-------|---------|----|------|
| Chicory | Shoot | 50 | 8 | 0.88 |
| Chicory | Shoot | 50 | 9 | 0.63 |
| Chicory | Shoot | 50 | 10 | 0.76 |
| Chicory | Shoot | 75 | 1 | 0.57 |
| Chicory | Shoot | 75 | 2 | 0.98 |
| Chicory | Shoot | 75 | 3 | 0.62 |
| Chicory | Shoot | 75 | 4 | 0.61 |
| Chicory | Shoot | 75 | 5 | 0.56 |
| Chicory | Shoot | 75 | 6 | 0.80 |
| Chicory | Shoot | 75 | 7 | 0.64 |
| Chicory | Shoot | 75 | 8 | 0.56 |
| Chicory | Shoot | 75 | 9 | 0.74 |
| Chicory | Shoot | 75 | 10 | 0.71 |
| Chicory | Shoot | 100 | 1 | 0.81 |
| Chicory | Shoot | 100 | 2 | 0.50 |
| Chicory | Shoot | 100 | 3 | 0.86 |
| Chicory | Shoot | 100 | 4 | 0.68 |
| Chicory | Shoot | 100 | 5 | 0.52 |
| Chicory | Shoot | 100 | 6 | 0.52 |
| Chicory | Shoot | 100 | 7 | 0.18 |
| Chicory | Shoot | 100 | 8 | 0.62 |
| Chicory | Shoot | 100 | 9 | 0.53 |
| Chicory | Shoot | 100 | 10 | 0.46 |
| Oilseed | | | | |
| Radish | Root | Control | 1 | 0.33 |
| Oilseed | | | | |
| Radish | Root | Control | 2 | 0.14 |
| Oilseed | | | | |
| Radish | Root | Control | 3 | 0.31 |
| Oilseed | | | | |
| Radish | Root | Control | 4 | 0.14 |
| Oilseed | | | | |
| Radish | Root | Control | 5 | 0.21 |
| Oilseed | | | | |
| Radish | Root | Control | 6 | 0.19 |
| Oilseed | | | | |
| Radish | Root | Control | 7 | 0.19 |
| Oilseed | | | | |
| Radish | Root | Control | 8 | 0.09 |
| Oilseed | | | | |
| Radish | Root | Control | 9 | 0.23 |
| Oilseed | | | | |
| Radish | Root | Control | 10 | 0.20 |
| Oilseed | | | | |
| Radish | Root | 25 | 1 | 0.29 |

| | | | | |
|---------|------|----|----|------|
| Oilseed | | | | |
| Radish | Root | 25 | 2 | 0.22 |
| Oilseed | | | | |
| Radish | Root | 25 | 3 | 0.27 |
| Oilseed | | | | |
| Radish | Root | 25 | 4 | 0.19 |
| Oilseed | | | | |
| Radish | Root | 25 | 5 | 0.31 |
| Oilseed | | | | |
| Radish | Root | 25 | 6 | 0.22 |
| Oilseed | | | | |
| Radish | Root | 25 | 7 | 0.23 |
| Oilseed | | | | |
| Radish | Root | 25 | 8 | 0.26 |
| Oilseed | | | | |
| Radish | Root | 25 | 9 | 0.27 |
| Oilseed | | | | |
| Radish | Root | 25 | 10 | 0.18 |
| Oilseed | | | | |
| Radish | Root | 50 | 1 | 0.18 |
| Oilseed | | | | |
| Radish | Root | 50 | 2 | 0.16 |
| Oilseed | | | | |
| Radish | Root | 50 | 3 | 0.29 |
| Oilseed | | | | |
| Radish | Root | 50 | 4 | 0.22 |
| Oilseed | | | | |
| Radish | Root | 50 | 5 | 0.21 |
| Oilseed | | | | |
| Radish | Root | 50 | 6 | 0.20 |
| Oilseed | | | | |
| Radish | Root | 50 | 7 | 0.13 |
| Oilseed | | | | |
| Radish | Root | 50 | 8 | 0.16 |
| Oilseed | | | | |
| Radish | Root | 50 | 9 | 0.26 |
| Oilseed | | | | |
| Radish | Root | 50 | 10 | 0.18 |
| Oilseed | | | | |
| Radish | Root | 75 | 1 | 0.21 |
| Oilseed | | | | |
| Radish | Root | 75 | 2 | 0.29 |
| Oilseed | | | | |
| Radish | Root | 75 | 3 | 0.22 |
| Oilseed | | | | |
| Radish | Root | 75 | 4 | 0.51 |
| Oilseed | | | | |
| Radish | Root | 75 | 5 | 0.20 |

| | | | | |
|---------|-------|---------|----|------|
| Oilseed | | | | |
| Radish | Root | 75 | 6 | 0.29 |
| Oilseed | | | | |
| Radish | Root | 75 | 7 | 0.18 |
| Oilseed | | | | |
| Radish | Root | 75 | 8 | 0.26 |
| Oilseed | | | | |
| Radish | Root | 75 | 9 | 0.15 |
| Oilseed | | | | |
| Radish | Root | 75 | 10 | 0.43 |
| Oilseed | | | | |
| Radish | Root | 100 | 1 | 0.23 |
| Oilseed | | | | |
| Radish | Root | 100 | 2 | 0.12 |
| Oilseed | | | | |
| Radish | Root | 100 | 3 | 0.20 |
| Oilseed | | | | |
| Radish | Root | 100 | 4 | 0.11 |
| Oilseed | | | | |
| Radish | Root | 100 | 5 | 0.22 |
| Oilseed | | | | |
| Radish | Root | 100 | 6 | 0.12 |
| Oilseed | | | | |
| Radish | Root | 100 | 7 | 0.16 |
| Oilseed | | | | |
| Radish | Root | 100 | 8 | 0.18 |
| Oilseed | | | | |
| Radish | Root | 100 | 9 | 0.15 |
| Oilseed | | | | |
| Radish | Root | 100 | 10 | 0.14 |
| Oilseed | | | | |
| Radish | Shoot | Control | 1 | 1.67 |
| Oilseed | | | | |
| Radish | Shoot | Control | 2 | 1.38 |
| Oilseed | | | | |
| Radish | Shoot | Control | 3 | 1.72 |
| Oilseed | | | | |
| Radish | Shoot | Control | 4 | 1.61 |
| Oilseed | | | | |
| Radish | Shoot | Control | 5 | 1.50 |
| Oilseed | | | | |
| Radish | Shoot | Control | 6 | 1.48 |
| Oilseed | | | | |
| Radish | Shoot | Control | 7 | 2.11 |
| Oilseed | | | | |
| Radish | Shoot | Control | 8 | 1.11 |
| Oilseed | | | | |
| Radish | Shoot | Control | 9 | 1.98 |

| | | | | |
|---------|-------|---------|----|------|
| Oilseed | | | | |
| Radish | Shoot | Control | 10 | 1.77 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 1 | 2.32 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 2 | 2.15 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 3 | 2.41 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 4 | 2.02 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 5 | 1.97 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 6 | 1.99 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 7 | 2.26 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 8 | 2.70 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 9 | 2.27 |
| Oilseed | | | | |
| Radish | Shoot | 25 | 10 | 2.08 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 1 | 1.98 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 2 | 2.72 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 3 | 2.29 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 4 | 2.47 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 5 | 2.88 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 6 | 2.31 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 7 | 2.08 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 8 | 2.61 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 9 | 2.44 |
| Oilseed | | | | |
| Radish | Shoot | 50 | 10 | 2.12 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 1 | 2.09 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 2 | 2.81 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 3 | 2.49 |

| | | | | |
|------------|-------|---------|----|------|
| Oilseed | | | | |
| Radish | Shoot | 75 | 4 | 2.20 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 5 | 1.87 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 6 | 2.58 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 7 | 1.77 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 8 | 2.28 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 9 | 1.88 |
| Oilseed | | | | |
| Radish | Shoot | 75 | 10 | 2.09 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 1 | 1.89 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 2 | 2.30 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 3 | 2.30 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 4 | 2.49 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 5 | 2.32 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 6 | 2.01 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 7 | 1.99 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 8 | 1.45 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 9 | 1.48 |
| Oilseed | | | | |
| Radish | Shoot | 100 | 10 | 1.38 |
| Red Clover | Root | Control | 1 | 0.17 |
| Red Clover | Root | Control | 2 | 0.07 |
| Red Clover | Root | Control | 3 | 0.26 |
| Red Clover | Root | Control | 4 | 0.28 |
| Red Clover | Root | Control | 5 | 0.27 |
| Red Clover | Root | Control | 6 | 0.14 |
| Red Clover | Root | Control | 7 | 0.13 |
| Red Clover | Root | Control | 8 | 0.09 |
| Red Clover | Root | Control | 9 | 0.10 |
| Red Clover | Root | Control | 10 | 0.11 |
| Red Clover | Root | 25 | 1 | 0.12 |
| Red Clover | Root | 25 | 2 | 0.04 |

| | | | | |
|------------|-------|---------|----|------|
| Red Clover | Root | 25 | 3 | 0.13 |
| Red Clover | Root | 25 | 4 | 0.08 |
| Red Clover | Root | 25 | 5 | 0.07 |
| Red Clover | Root | 25 | 6 | 0.13 |
| Red Clover | Root | 25 | 7 | 0.04 |
| Red Clover | Root | 25 | 8 | 0.20 |
| Red Clover | Root | 25 | 9 | 0.04 |
| Red Clover | Root | 25 | 10 | 0.06 |
| Red Clover | Root | 50 | 1 | 0.01 |
| Red Clover | Root | 50 | 2 | 0.10 |
| Red Clover | Root | 50 | 3 | 0.16 |
| Red Clover | Root | 50 | 4 | 0.17 |
| Red Clover | Root | 50 | 5 | 0.10 |
| Red Clover | Root | 50 | 6 | 0.07 |
| Red Clover | Root | 50 | 7 | 0.04 |
| Red Clover | Root | 50 | 8 | 0.06 |
| Red Clover | Root | 50 | 9 | 0.08 |
| Red Clover | Root | 50 | 10 | 0.03 |
| Red Clover | Root | 75 | 1 | 0.06 |
| Red Clover | Root | 75 | 2 | 0.11 |
| Red Clover | Root | 75 | 3 | 0.03 |
| Red Clover | Root | 75 | 4 | 0.07 |
| Red Clover | Root | 75 | 5 | 0.03 |
| Red Clover | Root | 75 | 6 | 0.04 |
| Red Clover | Root | 75 | 7 | 0.05 |
| Red Clover | Root | 75 | 8 | 0.05 |
| Red Clover | Root | 75 | 9 | 0.10 |
| Red Clover | Root | 75 | 10 | 0.18 |
| Red Clover | Root | 100 | 1 | 0.11 |
| Red Clover | Root | 100 | 2 | 0.13 |
| Red Clover | Root | 100 | 3 | 0.07 |
| Red Clover | Root | 100 | 4 | 0.07 |
| Red Clover | Root | 100 | 5 | 0.09 |
| Red Clover | Root | 100 | 6 | 0.04 |
| Red Clover | Root | 100 | 7 | 0.07 |
| Red Clover | Root | 100 | 8 | 0.06 |
| Red Clover | Root | 100 | 9 | 0.10 |
| Red Clover | Root | 100 | 10 | 0.03 |
| Red Clover | Shoot | Control | 1 | 0.16 |
| Red Clover | Shoot | Control | 2 | 0.13 |
| Red Clover | Shoot | Control | 3 | 0.23 |
| Red Clover | Shoot | Control | 4 | 0.15 |
| Red Clover | Shoot | Control | 5 | 0.20 |

| | | | | |
|------------|-------|---------|----|------|
| Red Clover | Shoot | Control | 6 | 0.18 |
| Red Clover | Shoot | Control | 7 | 0.18 |
| Red Clover | Shoot | Control | 8 | 0.14 |
| Red Clover | Shoot | Control | 9 | 0.50 |
| Red Clover | Shoot | Control | 10 | 0.10 |
| Red Clover | Shoot | 25 | 1 | 0.15 |
| Red Clover | Shoot | 25 | 2 | 0.08 |
| Red Clover | Shoot | 25 | 3 | 0.16 |
| Red Clover | Shoot | 25 | 4 | 0.15 |
| Red Clover | Shoot | 25 | 5 | 0.27 |
| Red Clover | Shoot | 25 | 6 | 0.28 |
| Red Clover | Shoot | 25 | 7 | 0.19 |
| Red Clover | Shoot | 25 | 8 | 0.09 |
| Red Clover | Shoot | 25 | 9 | 0.13 |
| Red Clover | Shoot | 25 | 10 | 0.15 |
| Red Clover | Shoot | 50 | 1 | 0.22 |
| Red Clover | Shoot | 50 | 2 | 0.25 |
| Red Clover | Shoot | 50 | 3 | 0.33 |
| Red Clover | Shoot | 50 | 4 | 0.24 |
| Red Clover | Shoot | 50 | 5 | 0.25 |
| Red Clover | Shoot | 50 | 6 | 0.24 |
| Red Clover | Shoot | 50 | 7 | 0.17 |
| Red Clover | Shoot | 50 | 8 | 0.27 |
| Red Clover | Shoot | 50 | 9 | 0.19 |
| Red Clover | Shoot | 50 | 10 | 0.19 |
| Red Clover | Shoot | 75 | 1 | 0.32 |
| Red Clover | Shoot | 75 | 2 | 0.19 |
| Red Clover | Shoot | 75 | 3 | 0.13 |
| Red Clover | Shoot | 75 | 4 | 0.19 |
| Red Clover | Shoot | 75 | 5 | 0.17 |
| Red Clover | Shoot | 75 | 6 | 0.22 |
| Red Clover | Shoot | 75 | 7 | 0.25 |
| Red Clover | Shoot | 75 | 8 | 0.13 |
| Red Clover | Shoot | 75 | 9 | 0.20 |
| Red Clover | Shoot | 75 | 10 | 0.19 |
| Red Clover | Shoot | 100 | 1 | 0.18 |
| Red Clover | Shoot | 100 | 2 | 0.15 |
| Red Clover | Shoot | 100 | 3 | 0.21 |
| Red Clover | Shoot | 100 | 4 | 0.16 |
| Red Clover | Shoot | 100 | 5 | 0.17 |
| Red Clover | Shoot | 100 | 6 | 0.15 |
| Red Clover | Shoot | 100 | 7 | 0.23 |
| Red Clover | Shoot | 100 | 8 | 0.26 |

| | | | | |
|------------|-------|---------|----|------|
| Red Clover | Shoot | 100 | 9 | 0.26 |
| Red Clover | Shoot | 100 | 10 | 0.17 |
| Alfalfa | Root | Control | 1 | 0.08 |
| Alfalfa | Root | Control | 2 | 0.02 |
| Alfalfa | Root | Control | 3 | 0.07 |
| Alfalfa | Root | Control | 4 | 0.14 |
| Alfalfa | Root | Control | 5 | 0.11 |
| Alfalfa | Root | Control | 6 | 0.06 |
| Alfalfa | Root | Control | 7 | 0.04 |
| Alfalfa | Root | Control | 8 | 0.26 |
| Alfalfa | Root | Control | 9 | 0.14 |
| Alfalfa | Root | Control | 10 | 0.06 |
| Alfalfa | Root | 25 | 1 | 0.09 |
| Alfalfa | Root | 25 | 2 | 0.05 |
| Alfalfa | Root | 25 | 3 | 0.10 |
| Alfalfa | Root | 25 | 4 | 0.07 |
| Alfalfa | Root | 25 | 5 | 0.04 |
| Alfalfa | Root | 25 | 6 | 0.05 |
| Alfalfa | Root | 25 | 7 | 0.11 |
| Alfalfa | Root | 25 | 8 | 0.06 |
| Alfalfa | Root | 25 | 9 | 0.12 |
| Alfalfa | Root | 25 | 10 | 0.12 |
| Alfalfa | Root | 50 | 1 | 0.03 |
| Alfalfa | Root | 50 | 2 | 0.07 |
| Alfalfa | Root | 50 | 3 | 0.07 |
| Alfalfa | Root | 50 | 4 | 0.09 |
| Alfalfa | Root | 50 | 5 | 0.07 |
| Alfalfa | Root | 50 | 6 | 0.02 |
| Alfalfa | Root | 50 | 7 | 0.01 |
| Alfalfa | Root | 50 | 8 | 0.03 |
| Alfalfa | Root | 50 | 9 | 0.04 |
| Alfalfa | Root | 50 | 10 | 0.04 |
| Alfalfa | Root | 75 | 1 | 0.06 |
| Alfalfa | Root | 75 | 2 | 0.08 |
| Alfalfa | Root | 75 | 3 | 0.05 |
| Alfalfa | Root | 75 | 4 | 0.03 |
| Alfalfa | Root | 75 | 5 | 0.02 |
| Alfalfa | Root | 75 | 6 | 0.05 |
| Alfalfa | Root | 75 | 7 | 0.03 |
| Alfalfa | Root | 75 | 8 | 0.01 |
| Alfalfa | Root | 75 | 9 | 0.07 |
| Alfalfa | Root | 75 | 10 | 0.05 |
| Alfalfa | Root | 100 | 1 | 0.07 |

| | | | | |
|---------|-------|---------|----|------|
| Alfalfa | Root | 100 | 2 | 0.06 |
| Alfalfa | Root | 100 | 3 | 0.04 |
| Alfalfa | Root | 100 | 4 | 0.03 |
| Alfalfa | Root | 100 | 5 | 0.05 |
| Alfalfa | Root | 100 | 6 | 0.05 |
| Alfalfa | Root | 100 | 7 | 0.05 |
| Alfalfa | Root | 100 | 8 | 0.03 |
| Alfalfa | Root | 100 | 9 | 0.02 |
| Alfalfa | Root | 100 | 10 | 0.04 |
| Alfalfa | Shoot | Control | 1 | 0.11 |
| Alfalfa | Shoot | Control | 2 | 0.14 |
| Alfalfa | Shoot | Control | 3 | 0.12 |
| Alfalfa | Shoot | Control | 4 | 0.14 |
| Alfalfa | Shoot | Control | 5 | 0.18 |
| Alfalfa | Shoot | Control | 6 | 0.26 |
| Alfalfa | Shoot | Control | 7 | 0.15 |
| Alfalfa | Shoot | Control | 8 | 0.24 |
| Alfalfa | Shoot | Control | 9 | 0.11 |
| Alfalfa | Shoot | Control | 10 | 0.21 |
| Alfalfa | Shoot | 25 | 1 | 0.31 |
| Alfalfa | Shoot | 25 | 2 | 0.27 |
| Alfalfa | Shoot | 25 | 3 | 0.35 |
| Alfalfa | Shoot | 25 | 4 | 0.16 |
| Alfalfa | Shoot | 25 | 5 | 0.27 |
| Alfalfa | Shoot | 25 | 6 | 0.21 |
| Alfalfa | Shoot | 25 | 7 | 0.27 |
| Alfalfa | Shoot | 25 | 8 | 0.20 |
| Alfalfa | Shoot | 25 | 9 | 0.39 |
| Alfalfa | Shoot | 25 | 10 | 0.27 |
| Alfalfa | Shoot | 50 | 1 | 0.31 |
| Alfalfa | Shoot | 50 | 2 | 0.34 |
| Alfalfa | Shoot | 50 | 3 | 0.22 |
| Alfalfa | Shoot | 50 | 4 | 0.25 |
| Alfalfa | Shoot | 50 | 5 | 0.64 |
| Alfalfa | Shoot | 50 | 6 | 0.14 |
| Alfalfa | Shoot | 50 | 7 | 0.24 |
| Alfalfa | Shoot | 50 | 8 | 0.20 |
| Alfalfa | Shoot | 50 | 9 | 0.23 |
| Alfalfa | Shoot | 50 | 10 | 0.22 |
| Alfalfa | Shoot | 75 | 1 | 0.23 |
| Alfalfa | Shoot | 75 | 2 | 0.28 |
| Alfalfa | Shoot | 75 | 3 | 0.19 |
| Alfalfa | Shoot | 75 | 4 | 0.24 |

| | | | | |
|------------|-------|---------|----|------|
| Alfalfa | Shoot | 75 | 5 | 0.14 |
| Alfalfa | Shoot | 75 | 6 | 0.24 |
| Alfalfa | Shoot | 75 | 7 | 0.21 |
| Alfalfa | Shoot | 75 | 8 | 0.15 |
| Alfalfa | Shoot | 75 | 9 | 0.19 |
| Alfalfa | Shoot | 75 | 10 | 0.21 |
| Alfalfa | Shoot | 100 | 1 | 0.22 |
| Alfalfa | Shoot | 100 | 2 | 0.19 |
| Alfalfa | Shoot | 100 | 3 | 0.16 |
| Alfalfa | Shoot | 100 | 4 | 0.12 |
| Alfalfa | Shoot | 100 | 5 | 0.10 |
| Alfalfa | Shoot | 100 | 6 | 0.31 |
| Alfalfa | Shoot | 100 | 7 | 0.28 |
| Alfalfa | Shoot | 100 | 8 | 0.15 |
| Alfalfa | Shoot | 100 | 9 | 0.02 |
| Alfalfa | Shoot | 100 | 10 | 0.24 |
| Annual Rye | Root | Control | 1 | 0.47 |
| Annual Rye | Root | Control | 2 | 0.10 |
| Annual Rye | Root | Control | 3 | 0.16 |
| Annual Rye | Root | Control | 4 | 0.22 |
| Annual Rye | Root | Control | 5 | 0.45 |
| Annual Rye | Root | Control | 6 | 0.60 |
| Annual Rye | Root | Control | 7 | 0.25 |
| Annual Rye | Root | Control | 8 | 0.18 |
| Annual Rye | Root | Control | 9 | 0.34 |
| Annual Rye | Root | Control | 10 | 0.11 |
| Annual Rye | Root | 25 | 1 | 0.58 |
| Annual Rye | Root | 25 | 2 | 0.47 |
| Annual Rye | Root | 25 | 3 | 0.38 |
| Annual Rye | Root | 25 | 4 | 0.07 |
| Annual Rye | Root | 25 | 5 | 0.70 |
| Annual Rye | Root | 25 | 6 | 0.09 |
| Annual Rye | Root | 25 | 7 | 0.33 |
| Annual Rye | Root | 25 | 8 | 0.25 |
| Annual Rye | Root | 25 | 9 | 0.27 |
| Annual Rye | Root | 25 | 10 | 0.25 |
| Annual Rye | Root | 50 | 1 | 0.08 |
| Annual Rye | Root | 50 | 2 | 0.40 |
| Annual Rye | Root | 50 | 3 | 0.04 |
| Annual Rye | Root | 50 | 4 | 0.32 |
| Annual Rye | Root | 50 | 5 | 0.48 |
| Annual Rye | Root | 50 | 6 | 1.18 |
| Annual Rye | Root | 50 | 7 | 0.30 |

| | | | | |
|------------|-------|---------|----|------|
| Annual Rye | Root | 50 | 8 | 0.40 |
| Annual Rye | Root | 50 | 9 | 0.22 |
| Annual Rye | Root | 50 | 10 | 0.33 |
| Annual Rye | Root | 75 | 1 | 0.32 |
| Annual Rye | Root | 75 | 2 | 0.33 |
| Annual Rye | Root | 75 | 3 | 0.22 |
| Annual Rye | Root | 75 | 4 | 0.25 |
| Annual Rye | Root | 75 | 5 | 0.17 |
| Annual Rye | Root | 75 | 6 | 0.14 |
| Annual Rye | Root | 75 | 7 | 0.26 |
| Annual Rye | Root | 75 | 8 | 0.29 |
| Annual Rye | Root | 75 | 9 | 0.12 |
| Annual Rye | Root | 75 | 10 | 0.37 |
| Annual Rye | Root | 100 | 1 | 0.20 |
| Annual Rye | Root | 100 | 2 | 0.27 |
| Annual Rye | Root | 100 | 3 | 0.16 |
| Annual Rye | Root | 100 | 4 | 0.33 |
| Annual Rye | Root | 100 | 5 | 0.34 |
| Annual Rye | Root | 100 | 6 | 0.25 |
| Annual Rye | Root | 100 | 7 | 0.15 |
| Annual Rye | Root | 100 | 8 | 0.33 |
| Annual Rye | Root | 100 | 9 | 0.36 |
| Annual Rye | Root | 100 | 10 | 0.11 |
| Annual Rye | Shoot | Control | 1 | 0.30 |
| Annual Rye | Shoot | Control | 2 | 0.23 |
| Annual Rye | Shoot | Control | 3 | 0.18 |
| Annual Rye | Shoot | Control | 4 | 0.27 |
| Annual Rye | Shoot | Control | 5 | 0.32 |
| Annual Rye | Shoot | Control | 6 | 0.36 |
| Annual Rye | Shoot | Control | 7 | 0.23 |
| Annual Rye | Shoot | Control | 8 | 0.32 |
| Annual Rye | Shoot | Control | 9 | 0.25 |
| Annual Rye | Shoot | Control | 10 | 0.16 |
| Annual Rye | Shoot | 25 | 1 | 0.44 |
| Annual Rye | Shoot | 25 | 2 | 0.47 |
| Annual Rye | Shoot | 25 | 3 | 0.23 |
| Annual Rye | Shoot | 25 | 4 | 0.23 |
| Annual Rye | Shoot | 25 | 5 | 0.58 |
| Annual Rye | Shoot | 25 | 6 | 0.27 |
| Annual Rye | Shoot | 25 | 7 | 0.42 |
| Annual Rye | Shoot | 25 | 8 | 0.25 |
| Annual Rye | Shoot | 25 | 9 | 0.39 |
| Annual Rye | Shoot | 25 | 10 | 0.44 |

| | | | | |
|------------|-------|-----|----|------|
| Annual Rye | Shoot | 50 | 1 | 0.16 |
| Annual Rye | Shoot | 50 | 2 | 0.33 |
| Annual Rye | Shoot | 50 | 3 | 0.24 |
| Annual Rye | Shoot | 50 | 4 | 0.36 |
| Annual Rye | Shoot | 50 | 5 | 0.52 |
| Annual Rye | Shoot | 50 | 6 | 0.55 |
| Annual Rye | Shoot | 50 | 7 | 0.45 |
| Annual Rye | Shoot | 50 | 8 | 0.46 |
| Annual Rye | Shoot | 50 | 9 | 0.33 |
| Annual Rye | Shoot | 50 | 10 | 0.32 |
| Annual Rye | Shoot | 75 | 1 | 0.48 |
| Annual Rye | Shoot | 75 | 2 | 0.30 |
| Annual Rye | Shoot | 75 | 3 | 0.49 |
| Annual Rye | Shoot | 75 | 4 | 0.47 |
| Annual Rye | Shoot | 75 | 5 | 0.43 |
| Annual Rye | Shoot | 75 | 6 | 0.43 |
| Annual Rye | Shoot | 75 | 7 | 0.54 |
| Annual Rye | Shoot | 75 | 8 | 0.40 |
| Annual Rye | Shoot | 75 | 9 | 0.35 |
| Annual Rye | Shoot | 75 | 10 | 0.55 |
| Annual Rye | Shoot | 100 | 1 | 0.44 |
| Annual Rye | Shoot | 100 | 2 | 0.25 |
| Annual Rye | Shoot | 100 | 3 | 0.22 |
| Annual Rye | Shoot | 100 | 4 | 0.39 |
| Annual Rye | Shoot | 100 | 5 | 0.53 |
| Annual Rye | Shoot | 100 | 6 | 0.41 |
| Annual Rye | Shoot | 100 | 7 | 0.47 |
| Annual Rye | Shoot | 100 | 8 | 0.46 |
| Annual Rye | Shoot | 100 | 9 | 0.35 |
| Annual Rye | Shoot | 100 | 10 | 0.45 |

Plant Growth Experiment (Dried ground)

Table 3. Raw data of cover crop species shoot and root dry weight including control and soil containing 1.5g of dried ground pigweed for all species of cover crop tested.

| Species | Organ | % DILUTION OF TEA SOLUTION | REPLICATE | DRY WEIGHT (g) |
|----------------|--------------|---|------------------|---------------------------|
| Chicory | Root | Control | 1 | 0.28 |
| Chicory | Root | Control | 2 | 0.18 |
| Chicory | Root | Control | 3 | 0.12 |
| Chicory | Root | Control | 4 | 0.07 |
| Chicory | Root | Control | 5 | 0.21 |
| Chicory | Root | Control | 6 | 0.13 |
| Chicory | Root | Control | 7 | 0.29 |
| Chicory | Root | Control | 8 | 0.13 |
| Chicory | Root | Control | 9 | 0.11 |
| Chicory | Root | Control | 10 | 0.14 |
| Chicory | Root | Ground Tissue | 1 | 0.30 |
| Chicory | Root | Ground Tissue | 2 | 0.11 |
| Chicory | Root | Ground Tissue | 3 | 0.16 |
| Chicory | Root | Ground Tissue | 4 | 0.04 |
| Chicory | Root | Ground Tissue | 5 | 0.26 |
| Chicory | Root | Ground Tissue | 6 | 0.10 |
| Chicory | Root | Ground Tissue | 7 | 0.15 |
| Chicory | Root | Ground Tissue | 8 | 0.21 |
| Chicory | Root | Ground Tissue | 9 | 0.13 |
| Chicory | Root | Ground Tissue | 10 | 0.26 |
| Chicory | Shoot | Control | 1 | 0.60 |
| Chicory | Shoot | Control | 2 | 0.65 |
| Chicory | Shoot | Control | 3 | 0.54 |
| Chicory | Shoot | Control | 4 | 0.39 |
| Chicory | Shoot | Control | 5 | 0.73 |
| Chicory | Shoot | Control | 6 | 0.46 |
| Chicory | Shoot | Control | 7 | 0.81 |
| Chicory | Shoot | Control | 8 | 0.14 |
| Chicory | Shoot | Control | 9 | 0.54 |
| Chicory | Shoot | Control | 10 | 0.55 |
| Chicory | Shoot | Ground Tissue | 1 | 0.79 |
| Chicory | Shoot | Ground Tissue | 2 | 0.54 |
| Chicory | Shoot | Ground Tissue | 3 | 0.80 |
| Chicory | Shoot | Ground Tissue | 4 | 0.29 |
| Chicory | Shoot | Ground Tissue | 5 | 0.91 |

| | | | | |
|---------|-------|---------------|----|------|
| Chicory | Shoot | Ground Tissue | 6 | 0.77 |
| Chicory | Shoot | Ground Tissue | 7 | 0.66 |
| Chicory | Shoot | Ground Tissue | 8 | 0.86 |
| Chicory | Shoot | Ground Tissue | 9 | 0.49 |
| Chicory | Shoot | Ground Tissue | 10 | 1.19 |
| Oilseed | | | | |
| Radish | Root | Control | 1 | 0.33 |
| Oilseed | | | | |
| Radish | Root | Control | 2 | 0.14 |
| Oilseed | | | | |
| Radish | Root | Control | 3 | 0.31 |
| Oilseed | | | | |
| Radish | Root | Control | 4 | 0.14 |
| Oilseed | | | | |
| Radish | Root | Control | 5 | 0.21 |
| Oilseed | | | | |
| Radish | Root | Control | 6 | 0.19 |
| Oilseed | | | | |
| Radish | Root | Control | 7 | 0.19 |
| Oilseed | | | | |
| Radish | Root | Control | 8 | 0.09 |
| Oilseed | | | | |
| Radish | Root | Control | 9 | 0.23 |
| Oilseed | | | | |
| Radish | Root | Control | 10 | 0.20 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 1 | 0.53 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 2 | 0.47 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 3 | 0.26 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 4 | 0.22 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 5 | 0.36 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 6 | 0.24 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 7 | 0.24 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 8 | 0.16 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 9 | 0.28 |
| Oilseed | | | | |
| Radish | Root | Ground Tissue | 10 | 0.25 |
| Oilseed | | | | |
| Radish | Shoot | Control | 1 | 1.67 |

| | | | | |
|---------|-------|---------------|----|------|
| Oilseed | | | | |
| Radish | Shoot | Control | 2 | 1.38 |
| Oilseed | | | | |
| Radish | Shoot | Control | 3 | 1.72 |
| Oilseed | | | | |
| Radish | Shoot | Control | 4 | 1.61 |
| Oilseed | | | | |
| Radish | Shoot | Control | 5 | 1.50 |
| Oilseed | | | | |
| Radish | Shoot | Control | 6 | 1.48 |
| Oilseed | | | | |
| Radish | Shoot | Control | 7 | 2.11 |
| Oilseed | | | | |
| Radish | Shoot | Control | 8 | 1.11 |
| Oilseed | | | | |
| Radish | Shoot | Control | 9 | 1.98 |
| Oilseed | | | | |
| Radish | Shoot | Control | 10 | 1.77 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 1 | 1.77 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 2 | 2.11 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 3 | 1.94 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 4 | 2.21 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 5 | 1.91 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 6 | 2.18 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 7 | 2.35 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 8 | 1.16 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 9 | 1.37 |
| Oilseed | | | | |
| Radish | Shoot | Ground Tissue | 10 | 1.98 |
| Alfalfa | Root | Control | 1 | 0.08 |
| Alfalfa | Root | Control | 2 | 0.02 |
| Alfalfa | Root | Control | 3 | 0.07 |
| Alfalfa | Root | Control | 4 | 0.14 |
| Alfalfa | Root | Control | 5 | 0.11 |
| Alfalfa | Root | Control | 6 | 0.06 |
| Alfalfa | Root | Control | 7 | 0.04 |
| Alfalfa | Root | Control | 8 | 0.26 |
| Alfalfa | Root | Control | 9 | 0.14 |

| | | | | |
|------------|-------|---------------|----|------|
| Alfalfa | Root | Control | 10 | 0.06 |
| Alfalfa | Root | Ground Tissue | 1 | 0.07 |
| Alfalfa | Root | Ground Tissue | 2 | 0.04 |
| Alfalfa | Root | Ground Tissue | 3 | 0.00 |
| Alfalfa | Root | Ground Tissue | 4 | 0.07 |
| Alfalfa | Root | Ground Tissue | 5 | 0.02 |
| Alfalfa | Root | Ground Tissue | 6 | 0.05 |
| Alfalfa | Root | Ground Tissue | 7 | 0.00 |
| Alfalfa | Root | Ground Tissue | 8 | 0.04 |
| Alfalfa | Root | Ground Tissue | 9 | 0.02 |
| Alfalfa | Root | Ground Tissue | 10 | 0.06 |
| Alfalfa | Shoot | Control | 1 | 0.11 |
| Alfalfa | Shoot | Control | 2 | 0.14 |
| Alfalfa | Shoot | Control | 3 | 0.12 |
| Alfalfa | Shoot | Control | 4 | 0.14 |
| Alfalfa | Shoot | Control | 5 | 0.18 |
| Alfalfa | Shoot | Control | 6 | 0.26 |
| Alfalfa | Shoot | Control | 7 | 0.15 |
| Alfalfa | Shoot | Control | 8 | 0.24 |
| Alfalfa | Shoot | Control | 9 | 0.11 |
| Alfalfa | Shoot | Control | 10 | 0.21 |
| Alfalfa | Shoot | Ground Tissue | 1 | 0.36 |
| Alfalfa | Shoot | Ground Tissue | 2 | 0.17 |
| Alfalfa | Shoot | Ground Tissue | 3 | 0.00 |
| Alfalfa | Shoot | Ground Tissue | 4 | 0.24 |
| Alfalfa | Shoot | Ground Tissue | 5 | 0.18 |
| Alfalfa | Shoot | Ground Tissue | 6 | 0.12 |
| Alfalfa | Shoot | Ground Tissue | 7 | 0.00 |
| Alfalfa | Shoot | Ground Tissue | 8 | 0.24 |
| Alfalfa | Shoot | Ground Tissue | 9 | 0.06 |
| Alfalfa | Shoot | Ground Tissue | 10 | 0.25 |
| Red Clover | Root | Control | 1 | 0.17 |
| Red Clover | Root | Control | 2 | 0.07 |
| Red Clover | Root | Control | 3 | 0.26 |
| Red Clover | Root | Control | 4 | 0.28 |
| Red Clover | Root | Control | 5 | 0.27 |
| Red Clover | Root | Control | 6 | 0.14 |
| Red Clover | Root | Control | 7 | 0.13 |
| Red Clover | Root | Control | 8 | 0.09 |
| Red Clover | Root | Control | 9 | 0.10 |
| Red Clover | Root | Control | 10 | 0.11 |
| Red Clover | Root | Ground Tissue | 1 | 0.04 |
| Red Clover | Root | Ground Tissue | 2 | 0.01 |

| | | | | |
|------------|-------|---------------|----|------|
| Red Clover | Root | Ground Tissue | 3 | 0.02 |
| Red Clover | Root | Ground Tissue | 4 | 0.07 |
| Red Clover | Root | Ground Tissue | 5 | 0.04 |
| Red Clover | Root | Ground Tissue | 6 | 0.02 |
| Red Clover | Root | Ground Tissue | 7 | 0.05 |
| Red Clover | Root | Ground Tissue | 8 | 0.01 |
| Red Clover | Root | Ground Tissue | 9 | 0.06 |
| Red Clover | Root | Ground Tissue | 10 | 0.05 |
| Red Clover | Shoot | Control | 1 | 0.16 |
| Red Clover | Shoot | Control | 2 | 0.13 |
| Red Clover | Shoot | Control | 3 | 0.23 |
| Red Clover | Shoot | Control | 4 | 0.15 |
| Red Clover | Shoot | Control | 5 | 0.20 |
| Red Clover | Shoot | Control | 6 | 0.18 |
| Red Clover | Shoot | Control | 7 | 0.18 |
| Red Clover | Shoot | Control | 8 | 0.14 |
| Red Clover | Shoot | Control | 9 | 0.50 |
| Red Clover | Shoot | Control | 10 | 0.10 |
| Red Clover | Shoot | Ground Tissue | 1 | 0.13 |
| Red Clover | Shoot | Ground Tissue | 2 | 0.06 |
| Red Clover | Shoot | Ground Tissue | 3 | 0.05 |
| Red Clover | Shoot | Ground Tissue | 4 | 0.12 |
| Red Clover | Shoot | Ground Tissue | 5 | 0.05 |
| Red Clover | Shoot | Ground Tissue | 6 | 0.07 |
| Red Clover | Shoot | Ground Tissue | 7 | 0.07 |
| Red Clover | Shoot | Ground Tissue | 8 | 0.12 |
| Red Clover | Shoot | Ground Tissue | 9 | 0.22 |
| Red Clover | Shoot | Ground Tissue | 10 | 0.14 |
| Annual Rye | Root | Control | 1 | 0.47 |
| Annual Rye | Root | Control | 2 | 0.10 |
| Annual Rye | Root | Control | 3 | 0.16 |
| Annual Rye | Root | Control | 4 | 0.22 |
| Annual Rye | Root | Control | 5 | 0.45 |
| Annual Rye | Root | Control | 6 | 0.60 |
| Annual Rye | Root | Control | 7 | 0.25 |
| Annual Rye | Root | Control | 8 | 0.18 |
| Annual Rye | Root | Control | 9 | 0.34 |
| Annual Rye | Root | Control | 10 | 0.11 |
| Annual Rye | Root | Ground Tissue | 1 | 0.44 |
| Annual Rye | Root | Ground Tissue | 2 | 0.36 |
| Annual Rye | Root | Ground Tissue | 3 | 0.47 |
| Annual Rye | Root | Ground Tissue | 4 | 0.29 |
| Annual Rye | Root | Ground Tissue | 5 | 0.44 |

| | | | | |
|------------|-------|---------------|----|------|
| Annual Rye | Root | Ground Tissue | 6 | 0.38 |
| Annual Rye | Root | Ground Tissue | 7 | 0.31 |
| Annual Rye | Root | Ground Tissue | 8 | 0.27 |
| Annual Rye | Root | Ground Tissue | 9 | 0.16 |
| Annual Rye | Root | Ground Tissue | 10 | 0.19 |
| Annual Rye | Shoot | Control | 1 | 0.30 |
| Annual Rye | Shoot | Control | 2 | 0.23 |
| Annual Rye | Shoot | Control | 3 | 0.18 |
| Annual Rye | Shoot | Control | 4 | 0.27 |
| Annual Rye | Shoot | Control | 5 | 0.32 |
| Annual Rye | Shoot | Control | 6 | 0.36 |
| Annual Rye | Shoot | Control | 7 | 0.23 |
| Annual Rye | Shoot | Control | 8 | 0.32 |
| Annual Rye | Shoot | Control | 9 | 0.25 |
| Annual Rye | Shoot | Control | 10 | 0.16 |
| Annual Rye | Shoot | Ground Tissue | 1 | 0.70 |
| Annual Rye | Shoot | Ground Tissue | 2 | 0.76 |
| Annual Rye | Shoot | Ground Tissue | 3 | 0.77 |
| Annual Rye | Shoot | Ground Tissue | 4 | 0.63 |
| Annual Rye | Shoot | Ground Tissue | 5 | 0.69 |
| Annual Rye | Shoot | Ground Tissue | 6 | 0.77 |
| Annual Rye | Shoot | Ground Tissue | 7 | 0.43 |
| Annual Rye | Shoot | Ground Tissue | 8 | 0.53 |
| Annual Rye | Shoot | Ground Tissue | 9 | 0.23 |
| Annual Rye | Shoot | Ground Tissue | 10 | 0.33 |

Plant Growth Experiment (Fresh trimmed)

Table 4. Raw data of cover crop species shoot and root dry weight including control and soil containing 10g or 20g of fresh trimmed pigweed for all species of cover crop tested.

| Species | Organ | % DILUTION OF TEA SOLUTION | REPLICATE | DRY WEIGHT (g) |
|----------------|--------------|---------------------------------------|------------------|---------------------------|
| chicory | root | control | 1 | 0.61 |
| chicory | root | control | 2 | 0.59 |
| chicory | root | control | 3 | 0.54 |
| chicory | root | control | 4 | 0.37 |
| chicory | root | control | 5 | 0.82 |
| chicory | root | control | 6 | 0.61 |
| chicory | root | control | 7 | 0.54 |
| chicory | root | control | 8 | 0.63 |
| chicory | root | control | 9 | 0.49 |
| chicory | root | control | 10 | 0.44 |
| chicory | root | 10 g | 1 | 0.25 |
| chicory | root | 10 g | 2 | 0.59 |
| chicory | root | 10 g | 3 | 0.16 |
| chicory | root | 10 g | 4 | 0.15 |
| chicory | root | 10 g | 5 | 0.51 |
| chicory | root | 10 g | 6 | 0.22 |
| chicory | root | 10 g | 7 | 0.29 |
| chicory | root | 10 g | 8 | 0.27 |
| chicory | root | 10 g | 9 | 0.31 |
| chicory | root | 10 g | 10 | 0.18 |
| chicory | root | 20 g | 1 | 0.38 |
| chicory | root | 20 g | 2 | 0.00 |
| chicory | root | 20 g | 3 | 0.00 |
| chicory | root | 20 g | 4 | 0.00 |
| chicory | root | 20 g | 5 | 0.00 |
| chicory | root | 20 g | 6 | 0.00 |
| chicory | root | 20 g | 7 | 0.00 |
| chicory | root | 20 g | 8 | 0.60 |
| chicory | root | 20 g | 9 | 0.68 |
| chicory | root | 20 g | 10 | 0.16 |
| chicory | shoot | control | 1 | 1.29 |
| chicory | shoot | control | 2 | 1.45 |
| chicory | shoot | control | 3 | 1.21 |
| chicory | shoot | control | 4 | 1.03 |
| chicory | shoot | control | 5 | 1.51 |

| | | | | |
|----------------|-------|---------|----|------|
| chicory | shoot | control | 6 | 1.21 |
| chicory | shoot | control | 7 | 1.19 |
| chicory | shoot | control | 8 | 1.23 |
| chicory | shoot | control | 9 | 0.99 |
| chicory | shoot | control | 10 | 0.86 |
| chicory | shoot | 10 g | 1 | 0.65 |
| chicory | shoot | 10 g | 2 | 1.14 |
| chicory | shoot | 10 g | 3 | 0.18 |
| chicory | shoot | 10 g | 4 | 0.83 |
| chicory | shoot | 10 g | 5 | 1.09 |
| chicory | shoot | 10 g | 6 | 0.70 |
| chicory | shoot | 10 g | 7 | 0.51 |
| chicory | shoot | 10 g | 8 | 0.48 |
| chicory | shoot | 10 g | 9 | 0.69 |
| chicory | shoot | 10 g | 10 | 0.55 |
| chicory | shoot | 20 g | 1 | 0.72 |
| chicory | shoot | 20 g | 2 | 0.00 |
| chicory | shoot | 20 g | 3 | 0.00 |
| chicory | shoot | 20 g | 4 | 0.00 |
| chicory | shoot | 20 g | 5 | 0.00 |
| chicory | shoot | 20 g | 6 | 0.00 |
| chicory | shoot | 20 g | 7 | 0.00 |
| chicory | shoot | 20 g | 8 | 1.01 |
| chicory | shoot | 20 g | 9 | 0.13 |
| chicory | shoot | 20 g | 10 | 0.18 |
| oilseed radish | root | control | 1 | 0.75 |
| oilseed radish | root | control | 2 | 0.78 |
| oilseed radish | root | control | 3 | 0.79 |
| oilseed radish | root | control | 4 | 0.76 |
| oilseed radish | root | control | 5 | 0.59 |
| oilseed radish | root | control | 6 | 0.87 |
| oilseed radish | root | control | 7 | 1.37 |
| oilseed radish | root | control | 8 | 0.67 |
| oilseed radish | root | control | 9 | 1.23 |
| oilseed radish | root | control | 10 | 0.96 |
| oilseed radish | root | 10 g | 1 | 0.44 |
| oilseed radish | root | 10 g | 2 | 0.41 |
| oilseed radish | root | 10 g | 3 | 0.85 |
| oilseed radish | root | 10 g | 4 | 0.89 |
| oilseed radish | root | 10 g | 5 | 0.82 |
| oilseed radish | root | 10 g | 6 | 0.75 |
| oilseed radish | root | 10 g | 7 | 0.78 |
| oilseed radish | root | 10 g | 8 | 0.72 |

| | | | | |
|----------------|-------|---------|----|------|
| oilseed radish | root | 10 g | 9 | 0.56 |
| oilseed radish | root | 10 g | 10 | 0.95 |
| oilseed radish | root | 20 g | 1 | 0.56 |
| oilseed radish | root | 20 g | 2 | 0.67 |
| oilseed radish | root | 20 g | 3 | 0.58 |
| oilseed radish | root | 20 g | 4 | 0.33 |
| oilseed radish | root | 20 g | 5 | 0.37 |
| oilseed radish | root | 20 g | 6 | 0.42 |
| oilseed radish | root | 20 g | 7 | 0.48 |
| oilseed radish | root | 20 g | 8 | 0.53 |
| oilseed radish | root | 20 g | 9 | 0.65 |
| oilseed radish | root | 20 g | 10 | 0.61 |
| oilseed radish | shoot | control | 1 | 3.10 |
| oilseed radish | shoot | control | 2 | 3.16 |
| oilseed radish | shoot | control | 3 | 2.88 |
| oilseed radish | shoot | control | 4 | 2.97 |
| oilseed radish | shoot | control | 5 | 2.52 |
| oilseed radish | shoot | control | 6 | 2.59 |
| oilseed radish | shoot | control | 7 | 3.21 |
| oilseed radish | shoot | control | 8 | 3.51 |
| oilseed radish | shoot | control | 9 | 2.85 |
| oilseed radish | shoot | control | 10 | 3.09 |
| oilseed radish | shoot | 10 g | 1 | 0.65 |
| oilseed radish | shoot | 10 g | 2 | 2.28 |
| oilseed radish | shoot | 10 g | 3 | 2.08 |
| oilseed radish | shoot | 10 g | 4 | 1.72 |
| oilseed radish | shoot | 10 g | 5 | 2.12 |
| oilseed radish | shoot | 10 g | 6 | 2.52 |
| oilseed radish | shoot | 10 g | 7 | 2.55 |
| oilseed radish | shoot | 10 g | 8 | 1.93 |
| oilseed radish | shoot | 10 g | 9 | 1.87 |
| oilseed radish | shoot | 10 g | 10 | 2.42 |
| oilseed radish | shoot | 20 g | 1 | 1.65 |
| oilseed radish | shoot | 20 g | 2 | 1.64 |
| oilseed radish | shoot | 20 g | 3 | 1.56 |
| oilseed radish | shoot | 20 g | 4 | 1.61 |
| oilseed radish | shoot | 20 g | 5 | 1.88 |
| oilseed radish | shoot | 20 g | 6 | 1.58 |
| oilseed radish | shoot | 20 g | 7 | 1.72 |
| oilseed radish | shoot | 20 g | 8 | 1.27 |
| oilseed radish | shoot | 20 g | 9 | 1.41 |
| oilseed radish | shoot | 20 g | 10 | 1.36 |
| red clover | root | control | 1 | 0.29 |

| | | | | |
|------------|-------|---------|----|------|
| red clover | root | control | 2 | 0.20 |
| red clover | root | control | 3 | 0.21 |
| red clover | root | control | 4 | 0.29 |
| red clover | root | control | 5 | 0.18 |
| red clover | root | control | 6 | 0.25 |
| red clover | root | control | 7 | 0.48 |
| red clover | root | control | 8 | 0.31 |
| red clover | root | control | 9 | 0.53 |
| red clover | root | control | 10 | 0.19 |
| red clover | root | 10 g | 1 | 0.15 |
| red clover | root | 10 g | 2 | 0.25 |
| red clover | root | 10 g | 3 | 0.15 |
| red clover | root | 10 g | 4 | 0.25 |
| red clover | root | 10 g | 5 | 0.23 |
| red clover | root | 10 g | 6 | 0.23 |
| red clover | root | 10 g | 7 | 0.26 |
| red clover | root | 10 g | 8 | 0.22 |
| red clover | root | 10 g | 9 | 0.28 |
| red clover | root | 10 g | 10 | 0.32 |
| red clover | root | 20 g | 1 | 0.00 |
| red clover | root | 20 g | 2 | 0.14 |
| red clover | root | 20 g | 3 | 0.00 |
| red clover | root | 20 g | 4 | 0.00 |
| red clover | root | 20 g | 5 | 0.13 |
| red clover | root | 20 g | 6 | 0.24 |
| red clover | root | 20 g | 7 | 0.09 |
| red clover | root | 20 g | 8 | 0.25 |
| red clover | root | 20 g | 9 | 0.00 |
| red clover | root | 20 g | 10 | 0.22 |
| red clover | shoot | control | 1 | 0.10 |
| red clover | shoot | control | 2 | 0.59 |
| red clover | shoot | control | 3 | 0.32 |
| red clover | shoot | control | 4 | 0.60 |
| red clover | shoot | control | 5 | 0.46 |
| red clover | shoot | control | 6 | 0.44 |
| red clover | shoot | control | 7 | 0.41 |
| red clover | shoot | control | 8 | 0.57 |
| red clover | shoot | control | 9 | 0.43 |
| red clover | shoot | control | 10 | 0.42 |
| red clover | shoot | 10 g | 1 | 0.09 |
| red clover | shoot | 10 g | 2 | 0.26 |
| red clover | shoot | 10 g | 3 | 0.49 |
| red clover | shoot | 10 g | 4 | 0.30 |

| | | | | |
|------------|-------|---------|----|------|
| red clover | shoot | 10 g | 5 | 0.39 |
| red clover | shoot | 10 g | 6 | 0.37 |
| red clover | shoot | 10 g | 7 | 0.31 |
| red clover | shoot | 10 g | 8 | 0.31 |
| red clover | shoot | 10 g | 9 | 0.24 |
| red clover | shoot | 10 g | 10 | 0.46 |
| red clover | shoot | 20 g | 1 | 0.00 |
| red clover | shoot | 20 g | 2 | 0.17 |
| red clover | shoot | 20 g | 3 | 0.00 |
| red clover | shoot | 20 g | 4 | 0.00 |
| red clover | shoot | 20 g | 5 | 0.33 |
| red clover | shoot | 20 g | 6 | 0.38 |
| red clover | shoot | 20 g | 7 | 0.37 |
| red clover | shoot | 20 g | 8 | 0.50 |
| red clover | shoot | 20 g | 9 | 0.00 |
| red clover | shoot | 20 g | 10 | 0.32 |
| alfalfa | root | control | 1 | 0.20 |
| alfalfa | root | control | 2 | 0.59 |
| alfalfa | root | control | 3 | 0.29 |
| alfalfa | root | control | 4 | 0.25 |
| alfalfa | root | control | 5 | 0.34 |
| alfalfa | root | control | 6 | 0.25 |
| alfalfa | root | control | 7 | 0.18 |
| alfalfa | root | control | 8 | 0.12 |
| alfalfa | root | control | 9 | 0.32 |
| alfalfa | root | control | 10 | 0.17 |
| alfalfa | root | 10 g | 1 | 0.31 |
| alfalfa | root | 10 g | 2 | 0.31 |
| alfalfa | root | 10 g | 3 | 0.37 |
| alfalfa | root | 10 g | 4 | 0.20 |
| alfalfa | root | 10 g | 5 | 0.22 |
| alfalfa | root | 10 g | 6 | 0.24 |
| alfalfa | root | 10 g | 7 | 0.21 |
| alfalfa | root | 10 g | 8 | 0.19 |
| alfalfa | root | 10 g | 9 | 0.18 |
| alfalfa | root | 10 g | 10 | 0.15 |
| alfalfa | root | 20 g | 1 | 0.19 |
| alfalfa | root | 20 g | 2 | 0.26 |
| alfalfa | root | 20 g | 3 | 0.22 |
| alfalfa | root | 20 g | 4 | 0.00 |
| alfalfa | root | 20 g | 5 | 0.00 |
| alfalfa | root | 20 g | 6 | 0.00 |
| alfalfa | root | 20 g | 7 | 0.23 |

| | | | | |
|----------|-------|---------|----|------|
| alfalfa | root | 20 g | 8 | 0.18 |
| alfalfa | root | 20 g | 9 | 0.20 |
| alfalfa | root | 20 g | 10 | 0.12 |
| alfalfa | shoot | control | 1 | 0.50 |
| alfalfa | shoot | control | 2 | 0.62 |
| alfalfa | shoot | control | 3 | 0.74 |
| alfalfa | shoot | control | 4 | 0.64 |
| alfalfa | shoot | control | 5 | 0.72 |
| alfalfa | shoot | control | 6 | 0.49 |
| alfalfa | shoot | control | 7 | 0.50 |
| alfalfa | shoot | control | 8 | 0.58 |
| alfalfa | shoot | control | 9 | 0.65 |
| alfalfa | shoot | control | 10 | 0.47 |
| alfalfa | shoot | 10 g | 1 | 0.64 |
| alfalfa | shoot | 10 g | 2 | 0.02 |
| alfalfa | shoot | 10 g | 3 | 0.59 |
| alfalfa | shoot | 10 g | 4 | 0.27 |
| alfalfa | shoot | 10 g | 5 | 0.46 |
| alfalfa | shoot | 10 g | 6 | 0.36 |
| alfalfa | shoot | 10 g | 7 | 0.42 |
| alfalfa | shoot | 10 g | 8 | 0.51 |
| alfalfa | shoot | 10 g | 9 | 0.29 |
| alfalfa | shoot | 10 g | 10 | 0.21 |
| alfalfa | shoot | 20 g | 1 | 0.22 |
| alfalfa | shoot | 20 g | 2 | 0.42 |
| alfalfa | shoot | 20 g | 3 | 0.31 |
| alfalfa | shoot | 20 g | 4 | 0.00 |
| alfalfa | shoot | 20 g | 5 | 0.00 |
| alfalfa | shoot | 20 g | 6 | 0.00 |
| alfalfa | shoot | 20 g | 7 | 0.39 |
| alfalfa | shoot | 20 g | 8 | 0.30 |
| alfalfa | shoot | 20 g | 9 | 0.46 |
| alfalfa | shoot | 20 g | 10 | 0.39 |
| annual | | | | |
| ryegrass | root | control | 1 | 0.71 |
| annual | | | | |
| ryegrass | root | control | 2 | 0.73 |
| annual | | | | |
| ryegrass | root | control | 3 | 0.56 |
| annual | | | | |
| ryegrass | root | control | 4 | 0.83 |
| annual | | | | |
| ryegrass | root | control | 5 | 0.40 |

| | | | | |
|-----------------|------|---------|----|------|
| annual ryegrass | root | control | 6 | 0.35 |
| annual ryegrass | root | control | 7 | 0.11 |
| annual ryegrass | root | control | 8 | 0.65 |
| annual ryegrass | root | control | 9 | 0.26 |
| annual ryegrass | root | control | 10 | 0.38 |
| annual ryegrass | root | 10 g | 1 | 0.19 |
| annual ryegrass | root | 10 g | 2 | 0.33 |
| annual ryegrass | root | 10 g | 3 | 0.82 |
| annual ryegrass | root | 10 g | 4 | 0.71 |
| annual ryegrass | root | 10 g | 5 | 0.35 |
| annual ryegrass | root | 10 g | 6 | 0.86 |
| annual ryegrass | root | 10 g | 7 | 0.62 |
| annual ryegrass | root | 10 g | 8 | 0.46 |
| annual ryegrass | root | 10 g | 9 | 0.53 |
| annual ryegrass | root | 10 g | 10 | 0.27 |
| annual ryegrass | root | 20 g | 1 | 0.64 |
| annual ryegrass | root | 20 g | 2 | 0.23 |
| annual ryegrass | root | 20 g | 3 | 0.31 |
| annual ryegrass | root | 20 g | 4 | 0.23 |
| annual ryegrass | root | 20 g | 5 | 0.34 |
| annual ryegrass | root | 20 g | 6 | 0.14 |
| annual ryegrass | root | 20 g | 7 | 0.74 |
| annual ryegrass | root | 20 g | 8 | 0.50 |
| annual ryegrass | root | 20 g | 9 | 0.31 |

| | | | | |
|-----------------|-------|---------|----|------|
| annual ryegrass | root | 20 g | 10 | 0.34 |
| annual ryegrass | shoot | control | 1 | 0.86 |
| annual ryegrass | shoot | control | 2 | 1.03 |
| annual ryegrass | shoot | control | 3 | 0.59 |
| annual ryegrass | shoot | control | 4 | 1.19 |
| annual ryegrass | shoot | control | 5 | 0.62 |
| annual ryegrass | shoot | control | 6 | 0.76 |
| annual ryegrass | shoot | control | 7 | 0.57 |
| annual ryegrass | shoot | control | 8 | 0.83 |
| annual ryegrass | shoot | control | 9 | 0.68 |
| annual ryegrass | shoot | control | 10 | 0.97 |
| annual ryegrass | shoot | 10 g | 1 | 0.51 |
| annual ryegrass | shoot | 10 g | 2 | 0.65 |
| annual ryegrass | shoot | 10 g | 3 | 1.02 |
| annual ryegrass | shoot | 10 g | 4 | 0.54 |
| annual ryegrass | shoot | 10 g | 5 | 0.11 |
| annual ryegrass | shoot | 10 g | 6 | 1.06 |
| annual ryegrass | shoot | 10 g | 7 | 0.33 |
| annual ryegrass | shoot | 10 g | 8 | 0.72 |
| annual ryegrass | shoot | 10 g | 9 | 0.68 |
| annual ryegrass | shoot | 10 g | 10 | 0.54 |
| annual ryegrass | shoot | 20 g | 1 | 0.83 |
| annual ryegrass | shoot | 20 g | 2 | 0.44 |
| annual ryegrass | shoot | 20 g | 3 | 0.58 |

| | | | | |
|--------------------|-------|------|----|------|
| annual ryegrass | shoot | 20 g | 4 | 0.35 |
| annual ryegrass | shoot | 20 g | 5 | 0.54 |
| annual ryegrass | shoot | 20 g | 6 | 0.49 |
| annual ryegrass | shoot | 20 g | 7 | 0.68 |
| annual ryegrass | shoot | 20 g | 8 | 0.57 |
| annual ryegrass | shoot | 20 g | 9 | 0.65 |
| annual ryegrass | shoot | 20 g | 10 | 0.60 |
