

| Kontrola | I [ $\mu\text{mol}$ (fot bez vz. |        | se vz.      | ref - analyz |  |
|----------|----------------------------------|--------|-------------|--------------|--|
|          | PPFD                             | CO2ref | CO2 analys. | dCO2 (ppm)   |  |
|          | 0                                | 340    | 360         | -20          |  |
|          | 20                               | 340    | 355         | -15          |  |
|          | 50                               | 340    | 348         | -8           |  |
|          | 100                              | 340    | 329         | 11           |  |
|          | 300                              | 340    | 319         | 21           |  |
|          | 500                              | 340    | 300         | 40           |  |
|          | 700                              | 340    | 288         | 52           |  |
|          | 1000                             | 340    | 265         | 75           |  |
|          | 1200                             | 340    | 261         | 79           |  |

| bez N | PPFD | CO2ref | CO2 analys. | dCO2 (ppm) |  |
|-------|------|--------|-------------|------------|--|
|       | 0    | 362    | 358         | 4          |  |
|       | 20   | 362    | 354         | 8          |  |
|       | 50   | 362    | 351         | 11         |  |
|       | 100  | 362    | 347         | 15         |  |
|       | 300  | 362    | 341         | 21         |  |
|       | 500  | 362    | 339         | 23         |  |
|       | 700  | 362    | 337         | 25         |  |
|       | 1000 | 362    | 336         | 26         |  |
|       | 1200 | 362    | 335         | 27         |  |

| Helianthus vysoká ozáření        |               |                 | ref - analyz | převod                        |
|----------------------------------|---------------|-----------------|--------------|-------------------------------|
| I [ $\mu\text{mol}$ (foton)/m2s] | CO2-ref [ppm] | CO2-anlys [ppm] | dCO2 (ppm)   | dCO2 ( $\mu\text{mol CO}_2$ ) |
| 1200                             | 568           | 529             | 39           |                               |
| 700                              | 568           | 532             | 36           |                               |
| 300                              | 568           | 544             | 24           |                               |
| 100                              | 568           | 564             | 4            |                               |
| 50                               | 568           | 568             | 0            |                               |
| 20                               | 568           | 577             | -9           |                               |
| 0                                | 568           | 584             | -16          |                               |

| Helianthus - nízká ozáření       |               |                 | ref - analyz | převod                        |
|----------------------------------|---------------|-----------------|--------------|-------------------------------|
| I [ $\mu\text{mol}$ (foton)/m2s] | CO2-ref [ppm] | CO2-anlys [ppm] | dCO2 (ppm)   | dCO2 ( $\mu\text{mol CO}_2$ ) |
| 1200                             | 564           | 546             | 18           |                               |
| 700                              | 564           | 546             | 18           |                               |
| 300                              | 564           | 545             | 19           |                               |
| 100                              | 564           | 549             | 15           |                               |

|    |     |     |    |
|----|-----|-----|----|
| 50 | 564 | 554 | 10 |
| 20 | 564 | 562 | 2  |
| 0  | 564 | 571 | -7 |

převod

| dCO <sub>2</sub> ( umol CO <sub>2</sub> na l) | <b>průtok (l/s)</b> | LA (cm <sup>2</sup> ) | LA (m <sup>2</sup> ) | Pn |
|---|---------------------|-----------------------|----------------------|----|
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |
|   | 0.005               | 6.5                   |                      |    |

převod

| dCO <sub>2</sub> ( umol CO <sub>2</sub> na l) | průtok (l/s) | LA (cm <sup>2</sup> ) | LA (m <sup>2</sup> ) | Pn |
|---|--------------|-----------------------|----------------------|----|
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |
|   | 0.005        | 4.375                 |                      |    |

průtok

| f [l/s] | LA [cm <sup>2</sup> ] | LA [m <sup>2</sup> ] | Pn [umol (CO <sub>2</sub> )/m <sup>2</sup> s] |
|---------|-----------------------|----------------------|---|
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |

průtok

| f [l/s] | LA [cm <sup>2</sup> ] | LA [m <sup>2</sup> ] | Pn [umol (CO <sub>2</sub> )/m <sup>2</sup> s] |
|---------|-----------------------|----------------------|---|
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |
| 0.005   | 9                     |                      |   |

|       |   |
|-------|---|
| 0.005 | 9 |
| 0.005 | 9 |
| 0.005 | 9 |

| bez P | I [umol (foton)/m2s] |        |                       | převod                  |         |   |
|-------|----------------------|--------|-----------------------|-------------------------|---------|---|
|       | PPFD                 | CO2ref | CO2 analys dCO2 (ppm) | dCO2 ( umr průtok (l/s) | LA(cm2) |   |
|       | 0                    | 380    | 365                   | 15                      | 0.005   | 6 |
|       | 20                   | 380    | 359                   | 21                      | 0.005   | 6 |
|       | 50                   | 380    | 349                   | 31                      | 0.005   | 6 |
|       | 100                  | 380    | 342                   | 38                      | 0.005   | 6 |
|       | 300                  | 380    | 324                   | 56                      | 0.005   | 6 |
|       | 500                  | 380    | 317                   | 63                      | 0.005   | 6 |
|       | 700                  | 380    | 310                   | 70                      | 0.005   | 6 |
|       | 1000                 | 380    | 305                   | 75                      | 0.005   | 6 |
|       | 1200                 | 380    | 301                   | 79                      | 0.005   | 6 |

| bez Fe |      |        |                       | převod                  |          |       |
|--------|------|--------|-----------------------|-------------------------|----------|-------|
|        | PPFD | CO2ref | CO2 analys dCO2 (ppm) | dCO2 ( umr průtok (l/s) | LA (cm2) |       |
|        | 0    | 396    | 392                   | 4                       | 0.005    | 4.875 |
|        | 20   | 396    | 389                   | 7                       | 0.005    | 4.875 |
|        | 50   | 396    | 387                   | 9                       | 0.005    | 4.875 |
|        | 100  | 396    | 385                   | 11                      | 0.005    | 4.875 |
|        | 300  | 396    | 383                   | 13                      | 0.005    | 4.875 |
|        | 500  | 396    | 383                   | 13                      | 0.005    | 4.875 |
|        | 700  | 396    | 382                   | 14                      | 0.005    | 4.875 |
|        | 1000 | 396    | 383                   | 13                      | 0.005    | 4.875 |
|        | 1200 | 396    | 383                   | 13                      | 0.005    | 4.875 |

Pozn. Sestrojte 2 grafy: 1) 4 křivky pro kultivační experiment - kontrola, bez N, bez P, bez fe  
2) 2 křivky - slunečnice (Helianthus) vysoká a nízká ozářenost



LA (m2) Pn

graf č.1

Ozářenost  
( $\mu\text{mol m}^{-2} \text{s}^{-1}$ )

0

20

50

100

300

500

700

1000

1200

LA (m2) Pn

