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| Table 2.1. Stand ratings for living mulches at Fruita, CO in spring 2009. |
| Treatment | Corn Silage | Soybean | Corn Grain | Avg. |
|  | ------------------------------------Rating\*-------------------------------- |
| Alfalfa |  4.1 § | 4.0 | 4.0 |  4.0 b † |
| Birdsfoot trefoil | 2.6 | 3.0 | 3.0 | 2.9 d |
| Birdsfoot trefoil + Red clover | 2.5 | 2.9 | 3.1 | 2.8 d |
| Red clover | 3.1 | 3.3 | 3.9 | 3.4 c |
| White clover | 5.0 | 5.0 | 5.0 | 5.0 a |
| Avg. |  3.5 A ‡ |  3.6 A |  3.8 A |  |
| \* Ratings based on a scale of 1 = poor to 5 = superior. §The interaction of legume treatment by annual crop was not significant at the 0.05 probability level.†Legume treatment means followed by the same lowercase letter are not different at the 0.05 probability level.‡ Annual crop means followed by the same uppercase letter are not different at the 0.05 probability level. |

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| Table 2.2. Yield and quality of living mulches at Fruita, CO in spring 2009. |
| Treatment | Dry matter yield (kg/ha) | NDF (%) | ADF (%) | CP (%) |
| Alfalfa |  1452 ab § |  42.3 ab | 32.4 a | 23.1 a |
| Birdsfoot trefoil |  1170 bc | 46.4 a | 36.9 a | 15.3 c |
| Birdsfoot trefoil + red clover |  916 c | 40.6 b | 32.7 a | 19.5 b |
| Red clover | 1584 a | 40.1 b | 31.9 a | 20.0 b |
| White clover | 1730 a | 37.2 b | 29.5 a | 18.7 b |
| § Within columns, means followed by the same lowercase letter are not different at the 0.05 probability level. |

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| Table 2.3. Effect of living mulch/fertility treatments on yield and quality of corn silage at Fruita, CO in 2009. |
| Treatment | Dry matter yield (Mg/ha) | NDF (%) | ADF (%) | CP (%) |
| Alfalfa |  20.4 bc § |  43.8 bc |  26.2 abc |  5.3 bc |
| Birdsfoot trefoil |  18.7 cd |  44.9 cd |  26.9 bcd | 4.8 c |
| Birdsfoot trefoil + red clover |  17.2 de |  47.1 ef |  28.2 cde | 4.6 c |
| Red clover |  17.9 d |  46.5 def |  28.1 cde | 4.8 c |
| White clover |  18.8 cd |  46.0 de |  28.0 bcde |  5.3 bc |
| 0 kg/ha N | 13.1 f | 48.5 f | 29.4 e | 4.6 c |
| 84 kg/ha N |  15.6 e | 48.3 f |  28.7 de | 4.6 c |
| 168 kg/ha N |  21.5 ab |  42.7 ab |  26.0 ab | 5.6 b |
| 252 kg/ha N |  22.9 a |  40.9 a | 24.6 a | 6.5 a |
| § Within columns, means followed by the same lowercase letter are not different at the 0.05 probability level. |

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| Table 2.4. Effect of living mulch/fertility treatments on corn grain yield and crop residue at Fruita, CO in fall 2009. |
|  |  | Residue |
| Treatment | Grain yield | Leaf | Stem | Cob | Total |
|  | --------------------------------------Mg/ha----------------------------------- |
| Alfalfa |  11.4 b § |  3.2 bc |  5.0 ab | 0.5 a |  8.7 bc |
| Birdsfoot trefoil |  9.8 c |  3.2 bc |  3.9 bc | 1.3 a |  8.4 bc |
| Birdsfoot trefoil + red clover | 10.0 c |  3.3 abc |  4.6 ab | 1.0 a |  9.0 b |
| Red clover |  9.7 c |  3.3 abc |  4.8 ab | 0.8 a |  8.9 b |
| White clover | 12.0 b | 2.9 c |  4.6 ab | 1.3 a |  8.8 b |
| 0 kg/ha N |  6.4 e | 2.1 d | 3.0 c | 0.4 a |  5.5 d |
| 84 kg/ha N |  8.5 d |  2.6 cd | 3.3 c | 0.6 a |  6.6 cd |
| 168 kg/ha N | 14.2 a |  3.9 ab | 5.2 a | 1.2 a |  10.3 ab |
| 252 kg/ha N | 15.1 a | 4.1 a | 5.3 a | 2.0 a | 11.4 a |
| § Within columns, means followed by the same lowercase letter are not different at the 0.05 probability level. |

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| Table 2.5. Legume biomass after corn grain harvest at Fruita, CO in fall 2009. |
| Treatment | Dry matter yield (kg/ha) |
| Alfalfa |  24 b § |
| Birdsfoot trefoil | 293 a |
| Birdsfoot trefoil + red clover |  28 b |
| Red clover |  0 c |
| White clover |  50 b |
| § Means followed by the same lowercase letter are not different at the 0.05 probability level. |

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| Table 2.6. Nitrogen fertilizer equivalencies of living mulch treatments at Fruita, CO in 2009 based on yield response to N fertilization. |
| Living Mulch Treatment | Corn Silage Nitrogen Fertilizer Equivalency |  | Corn Grain Nitrogen Fertilizer Equivalency |
|  | Including N fertilizer\* | Legume Contribution |  | Including N fertilizer | Legume Contribution |
|  | -----------------------------------(kg N/ha)---------------------------------- |
| Alfalfa  | 153 ± 51 | 69 |  | 127 ± 49 | 43 |
| Birdsfoot trefoil | 129 ± 49 | 45 |  | 104 ± 49 | 20 |
| Birdsfoot trefoil + red clover | 107 ± 49 | 23 |  | 107 ± 49 | 23 |
| Red clover | 116 ± 48 | 32 |  | 102 ± 49 | 18 |
| White clover | 130 ± 49 | 46 |  | 136 ± 49 | 52 |
| \* All living mulch treatments included 84 kg N/ha applied at the same time as the fertility treatments. |
| Table 2.7. Legume mortality ratings at Fruita, CO in spring 2010. |
|   | Corn Silage | Soybean | Corn Grain | Avg. |
|  | ------------------------------Rating \*----------------------------- |
| Alfalfa |  3.3 § | 2.0 | 3.0 |  2.8 a † |
| Birdsfoot trefoil | 3.8 | 2.0 | 3.5 | 3.1 a |
| Birdsfoot trefoil + Red clover | 1.5 | 1.0 | 1.3 | 1.3 b |
| Red clover | 0.0 | 0.0 | 0.0 | 0.0 d |
| White clover | 1.0 | 0.3 | 0.8 | 0.7 c |
| Avg. |  1.9 A ‡ |  1.1 B |  1.7 A |  |
| \* Mortality based on a scale of 0 = no legumes to 5 = full ground cover. §The interaction of legume treatment by annual crop was not significant at the 0.05 probability level.†Legume treatment means followed by the same lowercase letter are not different at the 0.05 probability level.‡ Annual crop means followed by the same uppercase letter are not different at the 0.05 probability level. |