# Organic matter additions including mulch, manure, and compost (omad.100)

These omad.100 parameters apply to OMAD events in the schedule file. Note: OMADTYP does not exist in versions earlier than Century 4.7; in earlier versions of monthly Century all organic matter additions are partitioned into the surface litter pools (metabc(1) and strucc(1)) and ASTLBL is a concentration. With Century 4.7, organic matter can be added to the surface slow pool as well as the surface litter pools, and ASTBL can specify a fraction (by weight) of labeled carbon. Labeling organic matter additions allows one to trace the labeled C added as it cycles through the different soil organic matter pools and is respired. Century 4.7 also adds the parameters FRMNLE(\*) to specify the fraction of total N, P, S, and K that is in mineral form. See addomad.f for the code that implements organic matter additions.

**omad.100 parameters**

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| OMADTYP | Organic matter addition type.  1.0 ≤ OMAPTYP ≤ 2.0: The fraction that goes to surface slow pool (SOM2) is OMADTYP – 1.0. The remaining goes to the surface litter pools. ASTLBL is a **concentration**. The partitioning of surface litter into structural and metabolic is determined by its lignin:N ratio.  3.0 ≤ OMAPTYP ≤ 4.0: The fraction that goes to surface slow pool (SOM2) is OMADTYP – 3.0. The remaining goes to the surface litter pools. ASTLBL is a **fraction**. The partitioning of surface litter into structural and metabolic is determined by its lignin:N ratio.  5.0 ≤ OMAPTYP ≤ 6.0: The fraction that goes to surface slow pool (SOM2) is OMADTYP – 5.0. The remaining goes to the surface **structural** litter pools. There is no metabolic litter added. ASTLBL is a fraction. This is similar to 3.0 ≤ OMAPTYP ≤ 4.0, however, any surface litter is added as 100% structural to simulate cellulose; there is no partitioning of litter based on the lignin:N ratio.  = 1.0, 3.0, 5.0 add 100% organic matter to surface litter pool.  = 2.0, 4.0, 6.0 add 100% organic matter to surface slow pool (SOM2) because it is partially decomposed, like compost. | index + fraction | [1.0 – 2.0]  or  [3.0 – 4.0]  or  [5.0 – 6.0] |
| ASTGC | amount of C in the organic matter addition | g C m-2 | 0.0 - 9999 |
| ASTLBL | When omadtyp= [1.0–2.0], ASTLBL is a **concentration** of the added organic matter C which is labeled  When omadtyp=[3.0–4.0] or [5.0–6.0], ASTLBL is a **fraction** of the added organic matter C which is labeled | fraction | 0.0 – 1.0 |
| ASTLIG | lignin fraction content of the litter fraction of the organic matter addition | g lignin C / g C | 0.0 – 1.0 |
| ASTREC(1) | C/N ratio of the organic matter addition (total C/ total N) | gC/gN | 1.0 - 500 |
| ASTREC(2) | C/P ratio of the organic matter addition (total C/ total P) | gC/gP | 1.0 - 9999 |
| ASTREC(3) | C/S or C/K ratio of the organic matter addition (total C/ total S, or total C/ total K) | gC/gS or gC/gK | 1.0 - 9999 |
| FRMNLE(1) | fraction of total N that is inorganic | fraction | 0.0 – 1.0 |
| FRMNLE(2) | fraction of total P that is inorganic | fraction | 0.0 – 1.0 |
| FRMNLE(3) | fraction of total S that is inorganic | fraction | 0.0 – 1.0 |

metabc(**1**) – total C in metabolic **surface** litter (g C m-2)

metcis(**1**,1) – unlabeled C in metabolic **surface** litter (g C m-2)

metcis(**1,**2) – labeled C in metabolic **surface** litter (g C m-2)

metabc(**2**) – total C in metabolic **soil** litter (g C m-2)

metcis(**2**,1) – unlabeled C in metabolic **soil** litter (g C m-2)

metcis(**2**,2) – labeled C in metabolic **soil** litter (g C m-2)

strucc(**1**) – total C in structural **surface** litter (g C m-2)

strcis(**1**,1) – unlabeled C in structural **surface** litter (g C m-2)

strcis(**1**,2) – labeled C in structural **surface** litter (g C m-2)

strucc(**2**) – total C in structural **soil** litter (g C m-2)

strcis(**2**,1) – unlabeled C in structural **soil** litter (g C m-2)

strcis(**2**,2) – labeled C in structural **soil** litter (g C m-2)

som2c(**1**) – total C in slow **surface** organic matter pool (g C m-2)

som2ci(**1**,1) – unlabeled C in slow **surface** organic matter pool (g C m-2)

som2ci(**1**,2) – labeled C in slow **surface** organic matter pool (g C m-2)

som2c(**2**) – total C in slow **soil** organic matter pool (g C m-2)

som2ci(**2**,1) – unlabeled C in slow **soil** organic matter pool (g C m-2)

som2ci(**2**,2) – labeled C in slow **soil** organic matter pool (g C m-2)