**Supplementary Table 5.** Morphological characters and character states of *Lophodermella* species, including *Elytroderma* *deformans* and *Chalara* sp. as outgroups.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** |
|  | **Ascomata** | **Ascomata** | **Ascomata** | **Ascospores** | **Asci** | **Host Needles** |
|  | hysterothecia ≥1 mm light 0, hysterothecia short 1 | hysterothecia brown 0, hysterothecia concolorous 1 | hysterothecia not fused 0, hysterothecia fused 1 | short (23-60u) clavate 0, elongate (98-90u) clavate 1, fusiform to oval 2, cylindrical 3, ellipsoid to fusoid 4 | 4 spores 4, 8 spores 8 | 2-needle pine 2, 3-needle pine 3, 5-needle pine 5  |
| *Lophodermella montivaga* | 0 | 0 | 0 | 0 | 8 | 2,3,5 |
| *Lophophacidium dooksii* | 0 | 0 | 0 | 2 | 8 | 5 |
| *Lophodermella arcuata* | 0 | 0,1 | 0 | 0 | 8 | 5 |
| *Lophodermella sp.* | 0 | 0 | 0 | 0 | 8 | 5 |
| *Lophodermella concolor* | 1 | 1 | 0 | 0 | 8 | 2 |
| *Lophodermella sulcigena* | 0 | 0 | 0 | 0 | 4,8 | 2 |
| *Lophodermella conjuncta* | 0 | 0 | 1 | 1 | 8 | 2 |
| *Elytroderma deformans* | 0 | 0 | 0 | 3 | 8 | 2,3 |
| *Chalara sp.* | ? | ? | ? | 4 | ? | ? |