Basidiospore Ornamentation Study of the Red Russula Mushrooms

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The red russula mushrooms are classified as belonging to the genus *Russula*, which is the large mushroom genus comprising more than 80 species, of the family *Russulaceae*. Morphological criteria are mainly used for the russula identification and classification. Many species of *Russula* are harvested worldwide for human consumption. Also their important as ectomycorrhizal symbionts with forest tree species is well documented. Since the number of species in this genus is large and many are notorious for the high morphological variation as well as color variation of their fruiting bodies, it is often difficult for those doing studies of forestry, ectomycorrhizal communities, and fungal biodiversity study to identify species of *Russula* in most areas with any certainty. From our previous fungal biodiversity study, there were several varieties of red russula mushrooms found to grow and be harvested as the edible mushrooms in the North-eastern Thailand. The problem of high morphological variation was also encountered. There were more than 50% of the collected mushroom specimens which could not be identified into species according to literatures. In this study, the basidiospore ornamentation of the red russula mushrooms was investigated using scanning electron microscope (SEM). The SEM technique was first introduced to study the mushroom basidiospores into details. From the total of 29 red russula specimens collected from the North-east region of Thailand in 2002 and 2003, SEM photomicrographs illustrated 11 patterns of basidiospore ornamentations. The results will be further applied for consideration as another criterion for the identification of the red russula mushrooms.

References

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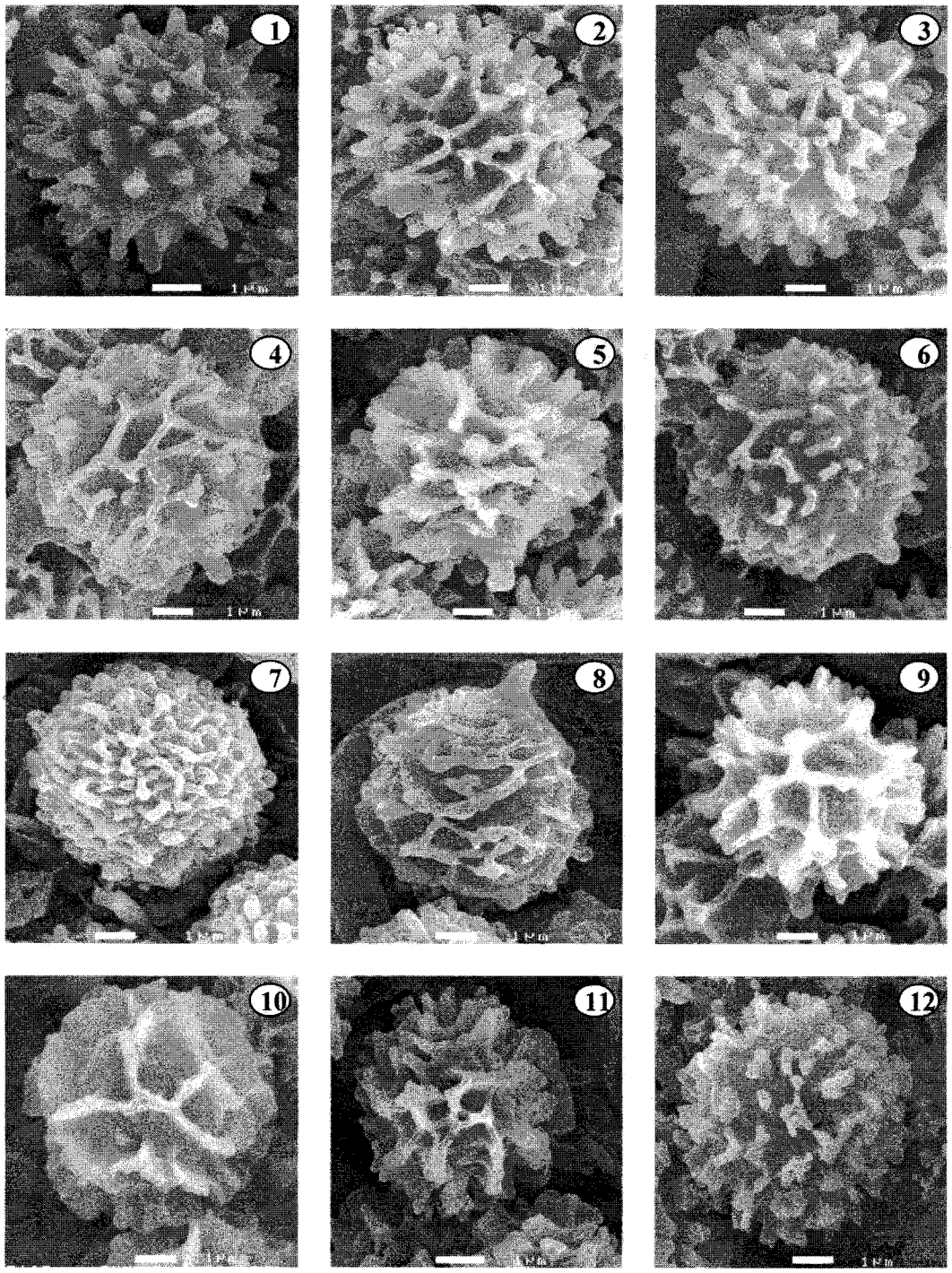

Figure 1. SEM micrographs illustrate 11 basidiospore ornamentation patterns (1 to 4, 5 and 9, 6 to 8, and 10 to 12) of 12 red russula mushroom varieties collected from natural habitats in the North-eastern Thailand. Bars equal 1 μm.