

A Study of the Relationship Between Rooftop Planting and Plant Type[®]

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Rooftop planting is recognized as a new business field today with keen interest. In April 2000, the metropolitan assembly of Tokyo established a new prefecture ordinance for rooftop planting as a measure against the "heat island problem". Rooftop planting is expected to be a big business opportunity in the planting and construction industries. Therefore, Oji Company has initiated a project for rooftop planting (Fig.1).

Rooftop planting garden styles include: traditional Japanese, private home, European style, and the new garden against the heat island problem.

Currently, use of a garden to reduce heat islands is receiving the major attention, and many companies compete in this field in construction methods and designs. For this type of garden, sedums (such as, *Sedum mexicanum* (Fig.2), *S. sarmentosum* (Fig. 3), *S. makinoi* (Fig. 4), and *S. oryzifolium* (syn. *S. uniflorum* subsp. *oryzifolium*) (Fig. 5) are considered as useful plants because they are expected to resist dry-weather.

I chose *S. mexicanum* as my test plant (Figs. 6 and 7), however, I have faced many difficulties. Dry weather durable *S. mexicanum* often suffers from Japanese high temperature and humidity conditions. It also exhibits some damage if it grows

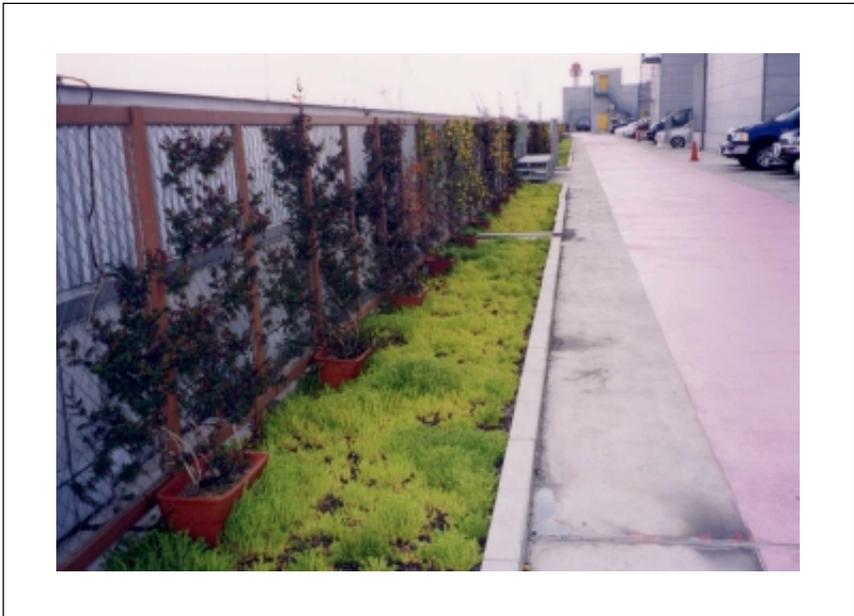


Figure 1. Oji Company initiated project for rooftop planting.



Figure 2. *Sedum mexicanum*.



Figure 3. *Sedum sarmentosum*.

quickly in fertile and moist soil. Currently, I am trying to develop growing methods that draw on their extensive adaptability and dry-weather durability. However, I am beginning to realize that the construction industry may have to change their construction methods from a business-orientated one to a plant-orientated one. Today the construction industry leads roof-top planting but the plant industry, such as Oji Forestry & Landscaping Co., Ltd., have proposed that plant-orientated construction would be better for growing plants on the roof environment; I believe it is also our duty.

On the other hand, I believe that the "European style garden" has great potential in the future. Currently sedums are receiving the main attention in Japan. However, considering the need for gardening materials to respond to the various needs, such as colorful and three-dimensional rooftop planting, another theme will be necessary in our future business. I feel that keeping a global perspective would be valuable and indispensable when it comes to rooftop gardens. I expect rooftop-planting style will shift from the current sedum-style garden to one of a more European garden style. Ornamental plants, such as, *Phyla nodiflora* (syn. *Lippia nodiflora*) (Fig. 8), *Phormium*, and rosemary, are examples of comparatively durable plants with enjoyable color, beautiful flowers, and fragrance. I believe they are examples of promising plants. I am planning to initiate a new study looking for other plant materials by seeking and exchanging information with other industries and universities in near future.

I recognize that the leading figures in rooftop planting are plants. Our duty is growing and developing them to be adaptable and dry-weather durable against the harsh environment of the roof. That is a very important task for plant propagators.

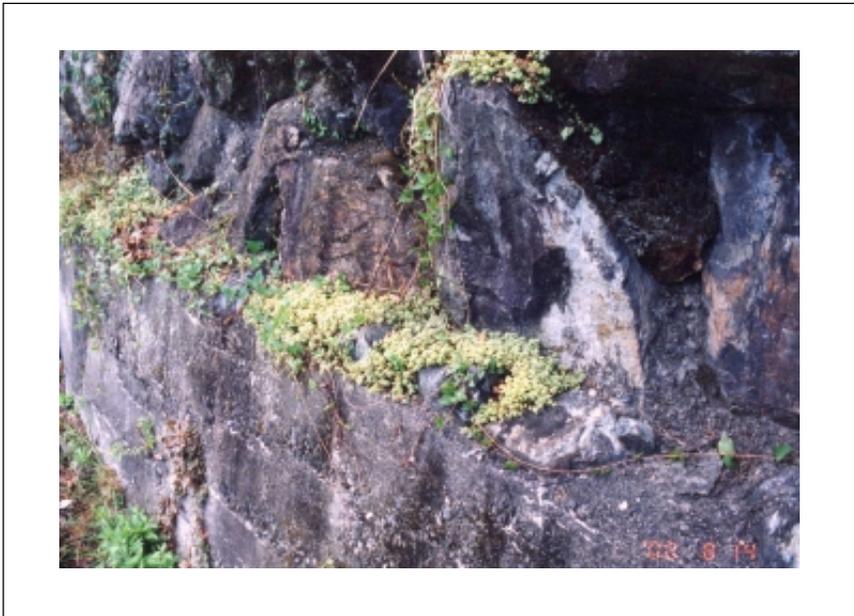


Figure 4. *Sedum makinoi*.



Figure 5. *Sedum oryzifolium*.



Figure 6. *Sedum mexicanum* used as a test plant.



Figure 7. *Sedum mexicanum*.

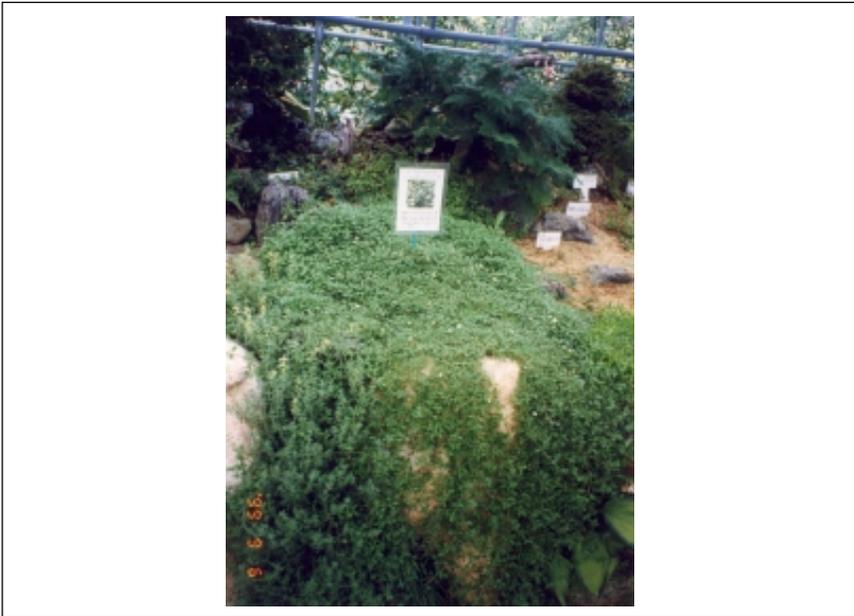


Figure 8. *Phyla nodiflora* is an example of a promising plant useful as rooftop gardens shift from the current sedum-style garden.