

## Choosing the Right Turf for Low Maintenance

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### Introduction

Proper turf maintenance is essential to achieve a quality lawn. The common maintenance practices include fertilizing, mowing, aerating, weeding and dethatching. Among these practices, mowing incurs the most cost due to its frequency of application, fuel consumption and manpower requirement. The level of maintenance varies, depending on the utility of the lawn. Sports fields and golf courses require higher maintenance compared to parks as they need to withstand intensive traffic during sporting activities and events. The final maintenance cost depends on the level of maintenance.

In terms of landscape productivity, it is useful to plan the maintenance schedule based on the planting site and utility. One has to ensure that any cost reduction will not affect the final quality of the turf cover, as turfgrasses are primarily installed for aesthetic reasons. For example: a low maintenance regime for sites with high utility, may result in bare patches.



**Fig 1.** (A) Streetscape turf, (B) Mowing operation

## Turf Species for Low Maintenance

Low turf maintenance, in practical sense, means reduction in mowing frequency. Other low maintenance practices are only secondary. Selection of turf species suited for low maintenance should be considered before going for longer mowing frequencies. Turf species for low maintenance should preferably have a very slow growth rate, i.e. slow vertical growth. The common turf species with low vertical growth rate are pearlgrass (*Axonopus compressus*), Manilagrass (*Zoysia matrella*), Serangoongrass (*Digitaria didactyla*) and St. Augustinegrass (*Stenotaphrum secundatum*).

## Research on Turfgrass Species for Low Maintenance

CUGE Research has identified some turfgrass species suitable for low maintenance in the project facilitated through its CUGE Research Attachment program with the Tamil Nadu Agricultural University, India (TNAU). Five warm season turfgrass species were evaluated under different conditions: (i) pot cultures in PVC columns and (ii) open field conditions, using ASM (NParks' approved soil mix) as the soil medium. Turf quality was evaluated under three different frequencies of mowing: once in two weeks, once in four weeks and once in six weeks. The turfgrasses were mowed at 20 mm height. The performance of the turfgrasses were evaluated by observing the turf quality, shoot density, root length (growth parameters) as well as the root volume, total non-structural carbohydrates and relative water content (physiological parameters). The study was carried out for a period of six months.



**Fig 2.** Low maintenance study at the CUGE Research plot in Hort Park using five warm season turfgrass species in pots.



**Fig 3.** Low maintenance study in open field condition at a state land in Lorong Chencharu using five warm season turfgrass species.

**Table 1.** List of Warm Season Turfgrass Species used in the study

<i>Axonopus compressus</i> (cowgrass)
<i>Axonopus</i> sp. (pearlgrass)
<i>Eremochloa ophiuroides</i> (centipedegrass)
<i>Stenotaphrum secundatum</i> (St. Augustinegrass)
<i>Zoysia matrella</i> (Manila/Carpetgrass)



**Table 2.** Based on the study the following results were obtained

Turf sp.	Performance under Different Mowing Frequencies		
	Once in 2 weeks (High Maintenance)	Once in 4 weeks	Once in 6 weeks (Low Maintenance)
Cowgrass	Good	Poor	Poor
Pearlgrass	Poor	Good	Good
Centipedegrass	Good	Poor	Poor
St. Augustinegrass	Poor	Good	Poor
Manilagrass	Good	Good	Good

## Application:

As described in the earlier text, low maintenance starts from the selection of right turf species. Slow growing turf species which exhibit good turf quality even under very low frequency of mowing are best suited. The selected turf species must be accompanied by special management practices (low inputs).

Based on the study, it was found that Manila/carpetgrass and pearlgrass are best suited for low maintenance. St. Augustinegrass can be used when the mowing frequency is once in four weeks but not when it's once in six weeks or the turf quality will be affected. Fast growing grasses such as cowgrass and centipedegrass have to be mowed more frequently at once in two weeks intervals. Hence they are not recommended for low maintenance sites. Fast growing grasses cannot take low mowing height as it can result in scalping. Among the two slow growing grasses (pearlgrass and Manilagrass), Manilagrass is superior to pearlgrass in terms of lateral growth, pest tolerance and wear tolerance.

Secondary to species selection, site construction is the next most important factor. A properly constructed site should have a nutrient rich, well drained soil medium to sustain the turf quality under low input levels. Some of the earlier studies have also shown that the application of Plant Growth Regulators (PGR) helps to restrict vertical growth and hence reducing mowing frequency. On-going studies are being carried out at CUGE Research to test the efficacy of PGR on turf under Singapore conditions.

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