SUMMARY: Two rice varieties viz., RNR 15048 (Telanganasona) and JGL 18047 (Bathukamma) were treated with three fungicides viz., thiram @ 0.3%, carbendazim @ 0.2% and mancozeb @ 0.25% and three biocontrol agents viz., T. harzianum, T. viride and P. fluorescens and stored in gunny bag and polythene bag were assessed for seed health and seed discolouration at monthly intervals. In rice cv. RNR 15048, seeds treated with thiram and stored in polythene bag recorded lesser number of fungal colonies (6.7%) and less seed discolouration (22.5%) at the end of eight months storage period as against the seeds stored in gunny bag which recorded more number of fungal colonies (8.25%) and high seed discolouration of 26%, respectively. In rice cv. JGL 18047, seeds treated with thiram and stored in polythene bag recorded lesser number of fungal colonies (6.5%) and less discolouration percentage (23.5%) at the end of eight months storage period as against the seeds stored in gunny bag which recorded more fungal colonies (9.5%) and seed discolouration percentage of 24%, respectively. The other seed treatments viz., carbendazim, P. fluorescens, T. harzianum and T. viride were also found effective in reduction of seed mycoflora and seed discolouration as compared with untreated seeds of two rice cultivars in polythene bag storage.