1. A total of 21 diseased samples of onion from different places in Maharashtra indicated that *Alternaria alternata*, *Fusarium oxysporum*, *Aspergillus niger*, *Moniella sp.*, *Geotrichum sp.*, *Mortierella sp.*, *Curvularia sp.*, *Colletotrichum dematium*, *Rhizopus oryzae* and *Coleochitae sp.*, cause post harvest diseases on various varieties of onion. Moreover, *Alternaria alternata* is able to cause pre and post harvest disease.

2. *Alternaria alternata* was found on maximum samples. Its sensitivity was studied against carbendazim, mancozeb, and thiophanate methyl. It was noted that there was quite a large variation in the sensitivity among the isolates against all these fungicides. Isolate Al-7 appeared to be highly tolerant to carbendazim while many of the isolates were sensitive. Sensitivity differed among the fungicides also.

3. The wild sensitive isolate Al-27 was selected for knowing the effect of passage on development of resistance. Culturing of the isolate on
carbendazim individually increased the growth of the isolate indicating that it has developed resistance against carbendazim. But when the isolate was cultured alternately or in mixture with mancozeb did not show any difference even at IVth passage. Mixing of carbendazim with thiophanate methyl appeared to be unfavourable.

4. Carbendazim resistance was induced in the sensitive isolate of *A. alternata* by the treatment of UV rays, gamma rays, sodium azide, ethyl methyl sulphonate and nitrose N-Ethyl urea. Highest frequency of mutants was given by EMS treatment. Some mutants were stable while some of them were highly resistant.

5. Nutritional studies of resistant mutant Al-EMS-1 and sensitive wild isolate were carried out. Resistant mutant gave higher growth on all the nutritional sources. There was also some difference in the nutritional pattern of resistant and sensitive isolate. Maltose, Mannose, galactose, ribose, potassium nitrate, magnesium nitrate, sodium phosphate Bo, magnesium chloride, potassium chloride, calcium chloride, tin chloride, barium chloride, ornithin, ascorbic acid and riboflavin were more favourable for the growth of resistant mutant while some other nutrients were favourable for the growth of sensitive isolate.
6. Biochemically both the isolates were different from each other.

7. Requirement of physical factors also appeared to vary for the sensitive and carbendazim resistant mutant. Green colour spectra, 18°C temperature and pH 6 was favourable for the growth of resistant mutant.

8. Use of agrochemicals in mixture with carbendazim was carried out to manage the carbendazim resistant *Alternaria alternata*. Mixing of carbendazim with tilt, stomp, rogor, streptomycin, ammonium sulphute and Zn gave better control efficiency.

9. Now-a-days use plant extracts has been advocated in the integrated management of plant pathogens. Use of *Polyalthia longifolia* extracts with carbendazim could gave better control of both the resistant and sensitive isolates of *A. alternata* on onion.