SUMMARY

1. Sensitivity of 5 isolates of *Alternaria ricini* to carbendazim showed variation during *in vitro* and *in vivo* conditions.

2. *In vitro* sensitivity of *Alternaria ricini* isolates to carbendazim ranged from 15 to 20%. While it's *in vivo* value ranged from 1 to 4%. Isolate AR-5 was sensitive and AR-4 was resistant in both *in vitro* and *in vivo.*

3. Exposure of wild sensitive isolate of *Alternaria ricini* i. e.AR-5 to carbendazim, continuously for 8 successive passages increased fungicide resistance, in both *in vitro* and *in vivo.*

4. Treatment of carbendazim alternately with captan and mancozeb completely inhibited the growth of the pathogen at third and second passage respectively during *in vitro* and *in vivo* studies.

5. When carbendazim was altered with roko, there was increase in resistance in pathogen during 8 successive passages, in both conditions, *in vitro* and *in vivo.*

6. Use of carbendazim in mixture with captan, mancozeb and roko, completely inhibited the growth of the pathogen from second passage during *in vitro* studies.

7. When treatment of carbendazim in mixture with captan, mancozeb, and roko was given, the growth of the pathogen was inhibited from third, second and forth passage respectively during *in vivo* studies.

8. Treatment of UV and Sodium azide to wild sensitive isolate AR-5 gave 10 and 14 carbendazim resistant mutants respectively. Their resistant factor ranges from 2 to 4.

9. Synergistic effects of agrochemicals were observed on mutant resistant isolate (SA-AR-5) in both, *in vitro* and *in vivo* conditions.

10. Among the agrochemicals, captan, phorate at 10µg/ml and Sodium chloride at 0.1µg/ml showed complete inhibition of the pathogen at along with

Carbendazim (60%) having 100%PCE during *in vitro* studies. While some other agrochemicals showed inhibition of the growth of the pathogen at 25, 50, 100µg/ml with Carbendazim (60%). But aureofungin, griseofulvin, streptimycin, potassium chloride, urea, 18:18:10, muriate of potash, iron, zinc and magnesium showed stimulation of the growth of the pathogen even at 100µg/ml with carbendazim (60%) during *in vitro* conditions.

11. During *in vivo* conditions, captan showed complete inhibition of the pathogen at 10µg/ml with carbendazim (5%) having100%PCE. While some other agrochemicals showed inhibition of the growth of the pathogen at 25, 50, 100µg/ml with carbendazim (5%). Among the agrochemicals zineb, dimethoate, endosulphan, 2-4-D, aureofungin, griseofulvin, streptimycin, potassium chloride, sodium chloride, muriate of potash, urea, 18:18:10, iron, zinc and magnesium showed stimulatory action on the growth of the pathogen even at 100µg/ml with carbendazim (5%).