1. Altogether 13 isolates of *Pythium aphanidermatum* (Eds.), Fitz. were tested for their sensitivity to aliette. MIC of aliette against 13 isolates of *Pythium aphanidermatum* on agar plates ranged from 950µg/ml to 10,000µg/ml while that on radish seedling ranged from 200µg/ml to 1500 µg/ml.

2. Exposure of wild sensitive isolate (Pa-3) to aliette, continuously for 8 successive passages increased fungicide resistance, in both *in vitro* and *in vivo*.

3. Treatment of aliette alternately with dhanuka and carbendazim completely inhibited the pathogen at passage IIIrd. While the growth of the pathogen was completely checked at passage IIrd in case of blitox.

4. In *in vitro* studies, when aliette was used in mixture with dhanuka, carbendazim and blitox there was complete inhibition of the pathogen at passage IIrd in case of dhanuka and blitox and at passage IIIrd in case of carbendazim.

5. When aliette was altered with blitox, dhanuka and carbendazim on radish seedlings, there was complete inhibition of the pathogen at IIrd passage in case of blitox, passage Vth in case of dhanuka and VIIth in case carbendazim.

6. There was complete inhibition of the pathogen at IIrd passage when aliette was mixed with dhanuka and blitox and at passage IIIrd when aliette was mixed with carbendazim (*in vivo*).

7. Different treatments of UV, EMS, sodium azide and spontaneous mutation to the mycelium of *Pythium aphanidermatum* yielded 6, 9, 9 and 1 mutant respectively.

8. Among these treatments, the treatment of 0.01% Sodium azide gave highly resistant mutant (SA-Pa-20) having maximum resistant factor 15.
9. Significant increase in the growth of wild sensitive (Pa-3) and highly resistant isolates (SA-Pa-20) of *Pythium aphanidermatum* was observed on dextrose followed by sucrose, maltose, amylose and fructose and lactose. It was observed that growth rate of resistant isolate was always higher than that of sensitive isolate on all carbon sources.

10. All nitrogen sources showed inhibitory action on *Pythium aphanidermatum*. Calcium nitrate showed more inhibitory action followed by sodium nitrate, magnesium nitrate, ammonium nitrate and peptone.

11. Sodium, potassium, calcium and magnesium chloride showed inhibitory action to *Pythium aphanidermatum*. Here resistant isolate always showed higher growth than that of sensitive isolate.

12. Magnesium, ammonium, barium, calcium, and potassium hydrogen sulphate sources were inhibitory to the *Pythium aphanidermatum*.

13. Ammonium phosphate (dibasic) showed more inhibitory action among all phosphate sources (potassium dihydrogen orthophosphates, ammonium dihydrogen orthophosphate, sodium dihydrogen orthophosphate, ammonium phosphate (dibasic) and potassium dihydrogen orthophosphate). But in all cases, resistant isolate always showed higher growth than that of sensitive isolate.

14. Molybdenum, cobalt and manganese stimulated the growth of wild sensitive (Pa-3) and highly resistant (SA-Pa-20) isolates of *Pythium aphanidermatum*. Here resistant isolate always showed higher growth than that of sensitive isolate.

15. Folate, riboflavin, thiamin, pyridoxine, niacin and ascorbic acid showed stimulatory action in case of both resistant and sensitive isolate. But resistant isolate always showed higher growth than that of sensitive isolate.
16. All the amino acids stimulated the mycelial growth of both resistant and sensitive isolate. Resistant isolate always showed higher growth than that of sensitive isolate.

17. Starch, DNA, RNA and iron contents of radish seedlings were decreased due to infection by both resistant and sensitive isolates of *Pythium aphanidermatum*. Reducing sugar, magnesium, zinc, calcium and phenols were increased due to infection by *Pythium aphanidermatum*.

18. Kavach, sharp, dhanuka, blitox, dunet, global 777, phorate, admire, jump, 2-4-d, atrazine, mera-71, sodium chloride, potassium chloride, calcium chloride, manganese chloride, fe, mo, co, mn, streptomycin, aureofungin, griseofulvin, hostacyclin, muriate of potash, urea, 5:10:5, 40:40:20 completely inhibited the growth of the pathogen giving 100% PCE. But datotsu increased the aliette resistance in both *in vitro* and *in vivo* conditions.

19. It was observed under orange light wild sensitive isolate of *Pythium aphanidermatum* showed maximum growth while its highly resistant isolate showed its higher growth under blue light. At every temperature, growth of resistant isolate was always higher than that of sensitive isolate. Temperature below 10°C was lethal to both the isolates while higher growth rate was seen at 30°C. The pH 7.5 was more favorable for the growth of the both isolates.

20. Population of aliette resistant isolate decreased from passage to passage during untreated passage while its population eas increased in aliette treated passage.

21. *Trichoderma koningii* along with aliette found superior in inhibiting the growth of sensitive Pa-3 isolate (91.11%) and resistant SA-Pa-20 isolate (88.88%) of *Pythium aphanidermatum*. 