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Use of antibiotics to control mosaic type bean yellowing complex

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Bean is an important crop in Sri Lanka. A mosaic type bean yellowing complex (BYC) was observed in 1999 in the Balangoda area. At present BYC is spreading all over bean growing areas and is a highly devastating problem. Several studies have been carried out to identify the causal agent and a control method but still no solution has been found. Therefore, the objective of this study was to determine the effect of antibiotics on controlling BYC and to identify if there is any relationship between bacteria/phytoplasma and the complex.

Two antibiotic solutions (streptomycin sulphate and oxytetracycline) were injected to potted plants of two bean varieties ("Sanjaya" and "Wade") and two controls without antibiotics (outside and inside insect proof net cage) were used in RCBD. A volume of 0.5 ml of 1% antibiotic solution was injected into the stem below the first leaf node of two week old bean seedlings in two leaf stage using a surgical syringe. Injections of antibiotics were continued weekly up to four weeks. The number of plants with yellowing symptoms was counted at fourth and seventh week after seeding.

The results showed that antibiotics have no effect in controlling BYC in both varieties. Only the plants kept inside the net cage were not infected with the complex. Bacteria or phytoplasma have no relationship with BYC and there should be an insect involvement with the dissemination of this complex.