1-INTRODUCTION

Japanese quail is the smallest avian species raised for meat and egg production (Panda and singh, 1990) and it has also assumed worldwide importance as a laboratory animal Bauagartner, (1990). Distinct characteristics include rapid growth, enabling quail to be marketed for consumption at 5-6 wks of age, early sexual maturity-resulting in a short generation interval, high rate of lay and much lower feed and space requirements than the domestic fowl.

The term "Probiotic" was first introduced by Lilly and Stillwell, (1965) to describe growth promoting factors produced by micro-organisms, Probiotic is derived from Greek which means "pro life", Parker, (1974) used term "probiotic" for micro-organisms or substances which contribute to intestinal microbial balance. Fuller, (1989) redefined "probiotic" as a live microbial feed supplement which beneficially affects the host animal by improving its microbial balance, Havenaar et al., (1992) pointed out that the definition of probiotic by Fuller, (1989) was restricted to feed supplements, animals and the intestinal tract. They broadened Fuller definition of probiotic as a mono or mixed culture of living micro-organisms which (applied to animal or man) beneficially affects the host by improving the properties of the indigenous micro flora.The addition of probiotic to the diet has been found to improve growth performance and feed conversion in broilers Jin et al., (1997),

Probiotic, which means "for life" in Greek Gibson and Fuller, (2000), has been defined as "a live microbial feed supplement, which beneficially affects the host animal by improving

its intestinal balance" Crawford, (1979) and Fuller, (1989). These specific living micro-organisms that implants in animals and ensure the effective establishments of intestinal populations of both beneficial and pathogenic organisms. These organisms also contribute to intestinal flora and prevent diarrhea (Marionnet and Lebas, 1990).

Rasic, (1983) reported that acidophilus and bifid bacteria might manufacture B vitamins, including niacin, folic acid, biotin, and vitamin B6. Probiotics also benefit the animals stimulating appetite, improving intestinal microbial balance and stimulating the immune system. Furthermore, probiotics has potential mechanisms of action that include competitive bacterial interactions, production of ant microbial metabolites, mucous conditioning, and immune modulation Fuller, (1989);Conway and Kjelleberg, (1989) and Nahashon et al., 1993).

Many additives from the second category are derived from fermentation processes using micro-organisms such as bacteria, or fungi. Fermacto is manufactured from *Aspergillus SP*. The manufacturer stated that Fermacto enhances the digestive capacity of the monogastric animal by providing nutrients and mycelia fiber for the proliferation of the intestinal bacteria. Published Literature regarding the use of Fermacto has been demonstrated for swine, poultry and fish.

The beneficial effects of probiotic may be mediated by a direct antagonistic effect against specific group of organisms, resulting in a decrease in number Hentges, (1983) or by an effect on their metabolism Goldin and Gorbach, (1984) or by stimulation of

immunity Umesb, (1999).

The present work was aimed to study the effect of Biovet-Yc, Bio Yeast and Osy with Vit E as feed additives on productive performance, immune and physiological responses of Japanese quail

2-Review of literature

2-1-Effect of using Probiotics on some growth traits:-