Life on earth is exposed to highly predictable daily rhythm’s of light and temperature availability of food and activity of predators are also affected by such periodic changes. It is therefore not surprising that many of our behavior follows a daily periodicity (Sharma 2003).

The discovery of biological clock in giving organism was made in the late 1920s dark light cycle is one of the strongest synchronizers available in natural environment, and most of the organism exhibit rhythms with 24h. (Maheshwari, R. 1998).

Biological rhythms comprise a process of adaptation to the environment. Their importance resides in refracting the changes of the environment in the internal media, and they can be synchronized by external parameters. (Hoar, et al., 1979). The synchrony the animal with the external and internal is fundamental to maintaining its comfort and survival, because an environment dysfunction can cause severe stress, illness or death (Boeuf and Bail1999). Fishes show a recurrent pattern in their daily activity. The response of the fish to light includes changes in swimming activity, feeding rhythms and growth. Consequently, photoperiod has been manipulated for improving the performance, profitability and sustainability of the aquacultural activity, e.g. by regulating daily endogenous rhythms of fish, advancing or delaying gonadal maturation, manipulating the spawning period or increasing somatic growth (Mc Cleave and Kleckner 1982; Bromage, et al., 1993; Imsland, et al., 1995; Sugeha, et al., 2001).

Light is essential to life for most plant and animals, light intensity quality and photoperiod is extremely variable and can change over a tremendous range often very rapidly. Light can be a very limiting factor in water depending on turbidity and depth.

Light is one of the rearing conditions that can be easily manipulated in recalculating water system and most of the research work focused on the photoperiodism and intensity of light (Bouef and Bail,1999).

The total light duration falling on pond as well as its biota is called photoperiod. Sunlight is the main natural source of light on earth although other secondary sources must taken in to account in certain cases such as moon light, starlight and other light forms. The behavior of both higher and lower organisms strongly influenced by strength of underwater light field. Sun’s radiation energy is selectively absorbed and its penetration on upper layer of aquatic environment. Light which penetrate in water is first refracted then absorbed, scattered or transmitted. Absorbed light is converted into heat which is responsible for water temperature (Bouef and Bail, 1999).

Fishes are sensitive to light, both direct and indirect is of great importance in the lives of fishes. The behavior of fish, particularly their diurnal activities
and many other aspects of their life significantly related to the degree of illumination. Photoperiod affects fish growth rate to different extents in different species. Reactions to changes in light conditions are often species-specific (Marchesana et. al., 2005).

Dou and Tsukamoto (2003) and Maheshwari, R., (1998) said that light could induce compositional changes during growth. Physiological and biological data are of importance to understanding of light influence on fish growth through better food conversion efficiency and not just stimulated food intake. Fishes are generally sensitive to their environment and are thus consider to be valuable bioindicator species Photoperiod not only affects feeding activity but also play a decisive role in growth survival and social behavior.

Photoperiod is one of the most important factors for the regulation of the fish physiology and metabolism. It can also be use for improving the welfare of fish kept in captivity (Biswas et al., 2008).

Night compares a complex of external and ecological factors, including colour spectrum, intensity and photoperiod. Its characteristics are very specific in an aquatic environment and its extremely variable in nature. In fish, like in most vertebrate species, behavioural and physiological processes are rhythmic and the phasing of the rhythm is generally species-dependent. There is an increasing body of evidence that a number of fish species can change their circadian rhythm of behavioural or feeding activity on a seasonal basis (Eriksson L., 1978, Eriksson et al., 1980, Freser et al., 1995 Landless, P.J., 1976, Sanchez-Vazquez, et al., 1998).

In some case the organism has evolve in an ever changing environment and its activities are closely regulated by environmental conditions. Fish as ectotherms are highly dependent on temperature but other factors are also involved in control of physiological function. It is possible that this puzzling behavior has evolved over a long period in association with marked cyclical fluctuations in endocrine activities. In general it is evident that the seasonal changes in light and temperature may induce marked activity in the pituitary with as resulting surge of endocrine (Bouef and Bail,1999).

Photoperiodic manipulation is emerging as an acceptable approach of practical application for regulating physiological functions in fish farming. Photoperiod techniques have been found to be influential on many physiological functions in fish species such as growth, reproduction and gonadal maturation, and are now widely used in aquaculture to alter spawning season, manipulate maturation and stimulate growth (Bromage, 1993; Boeuf and Bail, 1999; Bromage et al., 2001; Randall et al.,1998; Rodriguez et al., 2001; Biswas and Takeuchi, 2003; Gines et al., 2004).
Environmental disturbances are generally regarded as a potential source of stress, and this can theoretically be detected by changes in hormone or substrate concentrations in plasma, photoperiod changes reportedly influence hormone levels and dial activity (Pickering and Pottinger, 1983; Audet et al., 1986; Biswas et al., 2004) or by changes in erythrocytes parameters (Donaldson, 1981; Barton, 1997). Fish are sensitive to acute and chronic environmental changes and show a stress response (Pickering and Duston, 1983; Barton and Iwama, 1991; Wendelaar Bonga, 1997; Barton, 1997, 2000).

The photoperiod is generally accepted as the most important factor synchronizing sexual maturation and reproduction in fish (Bromage et al., 2001). Photoperiod manipulation to alter the incidence of sexual maturation and the time of spawning has been for a number of species (Duston and Bromage, 1988; Randall et al., 1998; Bromage et al., 2001; Duston et al., 2003; Imsland et al., 1995).

The knowledge of the optimal environmental condition for fish growth is necessary to enhance the yields and reduce costs in culture condition among them the photoperiod is one of the most important factors that control a wide variety of biological and physiological processes affecting the development and growth of fish (Gwinner 1986, Bouef and Bail Le, 1999. Taylor et al., 2006).