CHAPTER V

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The main objective of any plant breeder is to evolve new varieties the existing ones. In the present investigation an endeavour has been adopted to select a better plant with the help of selection methodology, yield is a complex character in crop because it is related with so many characters but these are some characters which specially affect the yield. We call them yield contributing character's or yield components. We have some statistical and biometrical method to detect these characters upon which the selection can be made.

The genotypic as well as phenotypic variabilities of all the characters except days to maturity were found high which indicated that the selection method can be adopted for the improvement yield in barley crop. On the whole the variability were found satisfactory.

Correlation study :

Height of plant, Days to maturity and 100 seed weight showed negative and significant correlation with yield were as number of tiller per plant, length of ear, No. of spikelet per spike and No. of seed per ear showed positive and significant correlation with yield.

Similar findings has been reported by the following authors.
Tandon et al (1968)

Reported positive and significant correlation of yield with No. of tiller per plant and No. of seed per ear.


Found positive association of yield with No. of tiller per plant.

Sethi and Singh (1971)

Observed that grain yield was positively correlated with No. of seed per ear.

Singh et al. (1979).

Found Negative correlation yield and Day to maturity.

Prasad, C. et al. (1979)

Observed Negative correlation between height of plant.

Path analysis study:

The direct effect of height of plant on yield was found negative with higher magnitude then any other indirect effect which indicated that the negative correlation of this characters with yield was found due to negative high value.

The direct effects No. of tiller per plant on yield was found positive with high magnitude. The indirect effect via any other character's were lower then the direct effect.

The magnitude of direct effect of length of ear on yield was found positive and high. No. of other indirect
effects had higher positive value then the direct effect the positive correlation might had come due to this direct effect.

The correlation of No. of spikelet per ear with yield was found positive and significant but direct effect of this characters on yield was found negative so, positive correlation suddenly has come positive due to the indirect effect. The indirect effect of No. of spikelet on yield Vs No. of seed per ear and height of plant were found positive and high.

The direct effect of days to maturity on yield was found positive but the correlation value negative this negative correlation value might have come due to height of plant which has the negative and high magnitude of indirect effect.

The correlation of No. of seed per ear and yield was found positive and significant. The direct effect of number of seed on yield was also found positive.

100 seed weight was found negatively correlation with yield and direct effect was also found negative but the highest magnitude of negative effect was found via no. of seed per ear.

Residual effect indicated that the about 80% yield was contributed by the characters choosen in the present estimation.
On the basis path analysis there is no characters through which the direct \textit{em} selection can be done. Hence simultaneously procedure will be under which short statured early maturity plant which high number of tiller, long ear's and more seeded ear will be consider.

\textbf{Heritability and Genetic advance}:

Days to flower height of plant, No. of tiller per plant, length of ear, and No. of spikelet per ear exhibited high heritability percentage were as rase of the character were found with medium heritability. The genetic advance of all the characters on low. The high or medium haritability and low genetic advance indicated that the selection through their character's will be faithful for the improvement of the crop through selection breeding programme.

It is therefore suggested that early maturity, short statured long eared, more seeded ear and small seeded plant should be selected or the improvement of yielding ability of barley crop.