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Harvesting Dates Effect

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Abstract - *There are many stages in the crop which effect the crop quality and quantity. The biotic and abiotic stress are also important factor which effect the same. Harvesting is one of the most important parameter consider in the crop cycle. The removal of the economically important part from the plant is termed as harvesting. Harvesting stage varies from crop to crop or it is different for different crops. The harvesting time also a typical aspect which is considered during assuming the yield. The harvesting of any crop should be done at the optimum stage. If the harvesting is delayed or harvested before the optimum stage there are several types of loses which occur both in the quality and quantity of the crop. The yield is mainly consider the quantity while the quality indicator varies from crop to crop. Crop harvested at proper time will give you the best result and it is true for all the crop. If harvesting is not done on optimum stage or time then there are loses issue, the loss which once occurred in the crop at ultimate time cannot be reserved.to avoid the losses various researches have been done defining the optimum time of harvesting of the crop. So to prevent these losses the crop should be harvested at the optimum time because the ultimate person to suffer from the losses is the farmer which is working on the ground zero.*

Key Words: **Harvesting dates, yield, quantity, quality, optimum stage, losses.**

1. INTRODUCTION

There are many type crop in the world which exist in different habitat. The main type of crops are cereals, cash crops, oil-seed crop, fiber crops, horticulture crops, plantation crop etc. All the crop grown in the nature suffer from the environment biotic and abiotic stress. All these factor will effect the crop and its life cycle. As the crop are grown in different agro metrological zone which make there sowing/planting and harvesting time different. The harvesting time or the stage is one of the most important parameter effecting the all the crops grown around the world. There quantity, quality, keeping quality, storage, shelf life all are dependent on the harvesting time. The harvesting time will decide the end result of the hard work done throughout crop season. The harvesting of the crop mainly depend upon the stage required by the human. If any crop is used for table purpose than it is harvested early as compare when it is grown for the seed purpose but in both the cases the quantity and quality are important. To get the bumper yield and hefty profits the crop should be harvested at the optimum time. If the harvesting delayed in some of the crops the yield will decrease on per day basis. So it is important to harvest at the best possible time

1.1 Effect on the Quantity (yield)

Groundnut varieties were selected which were harvested at five different dates. the highest yield was obtained when the harvesting was done at 98 days after planting of the crop for the two varieties why one of the varieties give the best result in yield attributes at 118 days after planting. The result of this experiment was that groundnut crop should be harvested at 98 to 108 days after planting (Sattayarak and Laosuwan, 1997). A study was conducted in 3 varieties of barley and one variety of triticale used for fodder purposes. Both the crops were sown at two different date's two different areas and harvesting was performed at two different stages. The cutting which was done at the stage C. 31 was having yield twice as that of harvesting which was done at C. 30 stage. Both the crops when having the same grain yield. The delay in the harvesting was having a direct correlation with the heading date (Royo *et al*. 1997). 3 dates of sowing were chosen along with two harvesting intervals which were of two and three days. The result from this experiment was that earlier Sowing and increasing the gap between harvesting was having a positive correlation with the yield and weight of the cucumber crop by (Saglam and Yazgan, 1997). The crop of maize was harvested at 6 different stages and the crop of wheat was sown at 6 different dates respectively. The sowing of the wheat crop before 10th October lead to an increase in the yield while there was a decrement in the yield after that. There was an increment in the grains of maize crop with delayed harvesting up to 5th October while there was a decrement in the yield after that because of low temperature. Evening Primrose was harvested at two different stages of the growth season the harvesting was done at 390 days after planting and 427 days after planting of the crops. The crop was observed both in autumn and spring season. In the case of the autumn season, the highest yield was obtained when the crop was harvested late in the season or when the harvesting was delayed. In the case of spring season there was a decrement in the yield at both early and late harvest this was because less number of seeds matured at early harvest and the yield was less in the case of the late harvest because of shattering (Ghasemnezhad, 2007). The impact of spacing harvesting time and different fertilizers level on the growth and yield of coleus crop. The harvesting of the crop was done at three different stages that are 160 days after planting 180 days after planting and 140 days after planting. Number of tubers was obtained at 160 and 180 days after planting put

the highest yield was obtained at 180 days after planting of the crop by (Mastiholi 2008). The research was conducted to find the impact of harvesting time blanching and location on the yield of turmeric crop. The rhizomes of the crop for subject to different blanching temperature and they were harvested during different stages of the crop. It was concluded that 15-minute blanching of the rhizomes harvested at an earlier period gives the best result (Green and Mitchell, 2014). The potato crop is harvested at three different stages along with which different types of covers were used. First harvesting was at 60 days after planting, second was at 75 days and the last one was done at when the tuber reached full physiological maturity. The cover helps in the increment of tuber size as well as to yield when harvesting was done at 60 days after the planting of the seed the conclusion of this study was that highest yield was obtained on the 60 and 75 days after planting of the crop (Rebarz *et al*., 2015). A study was carried out by Tansiy *et a*l., (2017) on the stevia crop. The study focused on the effect of various planting spacing along with the different time of cutting on the yield of stevia crop. The harvesting was done on two stages that were pre-flowering and flowering stage. The result stated that maximum yield was obtained from plant spacing of 30×60 cm when harvesting was done at blooming stage with the yield of 515.96 kg ha^{-1}dry leaf. A field experiment was done in which the effect of harvesting dates on the yield attributes of the wheat crop for analysed. The crop was harvested at four different dates and observations on the yield were made. It was found that the yield of the crop decreased as the harvesting was delayed. The highest yield was obtained on 19th July as compared to 29th July 5th August and 12 August. As the harvesting was delayed there was a decrement in the moisture percentage of the seeds (Darby, 2011). The crop was teosinte and the main aim of the work was to check the effect of different harvesting dates on the yield attributes along with germination. The crop was harvested on 5 different times at the interval of 7 days; the first harvesting was done 159 days after harvesting and then the next harvesting was done 166,173,180,187 days after sowing. The design which was followed was a randomized block design. The parameter which was recorded were the height of the plant, number of tillers $plant^{-1}$, number of fruiting clusters, fresh weight of the plant, grain weight per plant, percent weight and grain yield in kg. the parameter which was determined in the laboratory were percent germination, moisture in the seeds, radical length, shoot length, seedling fresh and dry weight along with the vigor index. The result stated that the harvesting done at 173 days of sowing was the best with the germination percentage of 79%, the moisture content in the seed was 13.80%,11.17% was the protein content. The grain yield and the percent weight also showed an increment at this stage of harvest.). Salla and Hoda (2014). In the case of the maize crop to check the impact of late harvest on the yield. Four different varieties of maize for used. The harvesting was done in the month of September on the dates 20th September, 23rd September, 26th September and 30th September. The results revealed that harvesting the crop late in the season leads to an increase in the test weight of the grains and the yield of Summer Maize crop. Liu *et al.,* (2018). The harvesting was done on four stages of growth which are milk stage cut, boot stage cut and re-growth cut, grazing stage cut and the re-growth cut and three grazing stage cut and the re-growth cut. The sowing date includes the normal sowing done on 12 November and early sowing commenced on 15 October, whilst the optimum supply of irrigation for better establishment. In the case of early sowing the time for the appearance of the first node was reduced by 20days, whilst there was an increment of 36 days to reach the milking stage from the first nodal appearance stage. There was an increment in the yield in regard to early sowing when the first cut was done at the grazing stage while there was a decrease in the yield when the cut was done at the milk or boot stage. At the stage of grazing, the crop recovery was good either cut once or thrice but there was a decrement noticed in the number of tillers. Droushiotis and Wilman (1987). The soya bean variety IAc-8 which investigated characteristics related to the physiological aspect on different harvesting times. Storage of seed was for a period of 6 months at two moisture percentage 12 and 15 percent. Various parameter was analysed namely germination, vigour, oil, iodine percent, and peroxide. The result was that the seed performing capability is affected by the harvesting time and amount of moisture present inside the seed**.** Marcos *et al*., (1994)

1.2 Effect on the quality

The effect of different harvesting dates on the yield attributes and seed quality. The crop was harvested on 5 different dates with an interval of five days between them. The first harvesting was done at 65 days after emergence followed by 70, 75, 80 and 85 days after emergence. The design for the study was a Randomized Block Design with four replications. The parameter affecting the quality of the seed which is germination percentage, root length and vigour index were also having a relation with the date of harvesting. In both the years, the topmost germination was obtained at harvesting the crop at 75 days after emergence that is 91.33 and 91.56 respectively. Along with this, the highest vigour index was also obtained at the same harvesting time that is 75 days after emergence in 2008-9 and 2009-10. The result obtained was due to late harvesting as more amount of food and dry matter accumulated due to late harvest. The seed yield and quality that was obtained at 80 and 85 days after emergence was also good (Shahebet *et al*., 2015). The impact of a number of the harvest was considered on the yield and composition of various chemicals in the Cichorium spinosum crop. Peat and vermiculite Vatican in 1 ratio 1 and seeds were planted in the pots. Plants harvesting for 2 to 3 times during the growth season and the same harvesting was done in the control plots. The result was that the amount of sugar and other organic acids decreases with the increase in the harvesting dates while the result of yield it was contrary to the above statement the increasing harvesting stage was having a

direct correlation with the yield. Petropouloet *et al*., (2017). A study was done to find out the impact of harvesting date on the quality of asparagus. The harvesting was done on four different stages of the crop. The harvesting was done on 1st July, 15th July, 1st May, 15th May and 1st June. The outcome was that harvesting of asparagus 1 July 1 showed the maximum profit as compared to all the other dates of harvesting (Haber, 2017). In the case of sugar beet crop to find the impact of harvesting stage on the sugar accumulation. To carry out the work to different cultivars were taken one out of which was nematode tolerant and other was not. The experiment was performed on two different fields with a different level of infestation of the pest. The result revealed that harvesting of the crop at an early stage had more yield and less impact on the best of the crop. There was a decrement in the yield from 0.7 to 0.8% with each day delay in the harvesting of the sugar beet crop (Pavlu, *et al*., 2017). The harvesting of the peanut crop was done at the gap of seven days and was harvested at 149,156, 163, 170 days after sowing. The parameters which were assessed during the study were pod yield ha^{-1}, shelling%, percent weight, pod number $plant^{-1}$, pod weight $plant^{-1}$, maturity index, fatty acid composition, and protein and oil percentage. There was an increment in the all the parameter when the harvesting was delayed but there was a decrement in the protein content, linoleic acid, and palmitic acid. There was an increment in the yield of pods ha^{-1} from 4185 to 5682 in the crop harvested at 149 days and at 170 days after sowing. A research was done on different wheat varieties with different times of harvesting the main aim of the experiment was to find out the effect of harvesting dates on the germination and on the seed quality parameters like seedling dry weight and vigor. The result of this experiment stated that harvest time was directly proportional to the germination percentage. The harvesting time also effects the dry weight of the seedling and vigor was also effected. (Gharineh *et al*., 2004). The purpose of this research was to analysis the effect of maturation of seed on the seed dry matter, percentage seed weight and a varying amount of Seed dry matter in the wheat crop. Four different harvesting stages were chosen the milking stage, early dough stage, the final dough stage, and the physiological maturity stage. The analysis of the experiment shows that the Seed from early and late dough stage has a higher amount of dry matter when compared to others the maximum amount of dry matter was present in the seeds which were collected at Full dough stage. The experiment shows that the weight of seeds was the highest in the case of milking stage and there was a continuous decrement till the physiological harvesting stage (Zecevic *et al*., 2006).

3. CONCLUSION

Harvesting dates play a momentous role in the agriculture. It is one of the parameter which will effect the end product in all the crop which are present in the nature specifically those which are economically important for the humans. Harvesting of the crop is a science ad as well as an art to maximize the profits. Harvesting of the crop varies from crop to crop and by the purpose for which it is going to be utilized. The crop should be harvested at the time which gives us the best result in both the terms of the quantity and quality. The harvesting dates are whole and sole important for the end result of any crop. A crop harvested before or after the optimum time will reduce the yield and other quality attributes. To get the maximum profit from a crop a farmer should do the harvest at the best time possible.

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