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Professional University,  
Phagwara, Punjab, India**Dr. Gurpreet Singh**School of Agriculture, Lovely  
Professional University,  
Phagwara, Punjab, India**Weed flora in wheat (*Triticum aestivum*): A review****Tegbir Singh and Dr. Gurpreet Singh**DOI: <https://doi.org/10.22271/chemi.2020.v8.i6ad.11082>**Abstract**

The different weed flora found in different experimental fields of wheat were *Phalaris minor*, *Melilotus indica*, *Stellaria media*, *Anagallis album*, *Lolium temulentum*, *Avena ludoviciana*, *Salvia anthemifolia*, *Chenopodium album*, *Polypogon fugax*, *Cynodon dactylon* and *Cyperus rotundus*. *Avena ludoviciana*, *Lolium temulentum*, *Polypogon monspeliensis*, *Poa annua*, *Sonchus arvensis* Asteraceae, *Carthamus oxycantha*, *Cichorium intybus*, *Euphorbia simplex*, *Asphodelus tenuifolius*, *Chenopodium murale*, *Chenopodium murale*, *Lathyrus sativus*, *Lathyrus aphaca*, *Vicia sativa*, *Vicia hirsuta*, *Medicago denticulata*, *Trigonella polycerata*, *Melilotus alba*, *Melilotus indica*, *Anagallis arvensis*, *Spergula arvensis*, *Stellaria media*, *Saponaria vaccaria*, *Silene conoidea*, *Fumaria parviflora*, *Argemone mexicana*, *Coronopus didymus*, *Sisymbrium irio*, *Malva parviflora*, *Veronica agrestis*, *Lithospermum arvense*, *Antirrhinum orontinum*, *Gnaphalium purpureum*, *Cannabis sativa*, *Oenothera laciniata*, *Arenaria serpyllifolia* and *Ranunculus sceleratus*.

**Keywords:** Wheat, weed flora, sedges, leaves etc.**Introduction**

Wheat (*Triticum aestivum*) is one of the most important grain crop which is grown in approximately 225 million ha worldwide, about half of which is in the developing countries (Pisal and Sagarka, 2013) [17]. India is the second largest producer of wheat in the world contributing about 94.88 million tons of grains with productivity of 2.98 tonnes per ha from the area of 31.5 million ha (Chhokar *et al.*, 2012) [12].

The high nutrient and water requirements along with less competitive nature of these high yielding dwarf varieties have provided the conducive environment for increased weed infestation. Weeds are regarded as most disdain to crop production and account for about one third of total losses caused by all the pests. Among various wheat based cropping system, rice-wheat is major one, occupying about 10.0 million hectare in India and worldwide this system occupies about 24 million hectare area (Ladha *et al.*, 2000; Timsina and Connor, 2001) [9, 21]. Weeds cause significant annual regional productivity losses in rice-wheat system (Harrington *et al.*, 1992) [6]. Weed infestation is one of the major factors limiting crop productivity. For realizing full genetic yield potential of the crop, the proper weed control is one of the essential ingredients. Weeds not only reduce the yield but also make the harvesting operation difficult. Therefore, for sustaining food grain production to feed ever-increasing population and ensuring food security, effective weed management is very essential.

Weed competition Introduction of high yielding dwarf wheat varieties changed the spectrum of weed flora from dominance of broadleaf weeds in the 1960s to mixed flora of broadleaf and grassy weeds in early 1970s and then the dominance of grass weeds especially, *Phalaris minor* in late 1970s. The chemical weed control, therefore, became a necessity in late 1970s. Herbicides were introduced in 1979-80, weed flora changed in favor of complex weeds species in late 1980s and then again in favor of *Phalaris minor* during the early 1990s with evolution of herbicide resistance (Malik and Singh, 1993) [10]. Weeds have enjoyed dominance over crop basically because of poor agronomic management. To introduce good agronomic practices and the ecology, it is important to understand the competition between weeds and the wheat crop. Weeds compete with crop plants for moisture, nutrients, light and space, thereby depriving the crop of vital inputs. Therefore, weed competition is one of the most important constraints in crop production.

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Weed-crop competition begins when crop plants and weeds grow in close proximity and their root or shoot system overlaps. The competition becomes severe due to more smothering effect, when weeds emerge earlier than the crop. In rice-wheat system, due to enough soil moisture after harvesting of rice, weeds emerge earlier than wheat or along with wheat crop. Losses in wheat yield are primarily due to reduction in tillering. The critical period of weed control in wheat is 30-45 days after sowing and crop should be kept weed free during this period. Majority of the farmers are not adhering to this critical period for the management of weeds and they mostly delay the herbicide application.

### Different types of weeds in wheat

Govindra *et al.*, (2002) [4] observed that the dominated weed florain wheat from MP were *Phalaris minor*, *Chenopodium album*, *Melilotus indica*, *Anagallis arvensis*, *Fumaria parviflora*, *Medicago denticulate* and *Lathyrus aphaca*.

Singh *et al.*, (2005) [20] observed the weeds in wheat like, *Chenopodium album*, *Melilotus alba*, *Spergulla arvensis*, *Phalaris minor*, *Cyperus rotundus* and *Cynodon dactylon*.

Rajkhwa *et al.*, (2005) [18] were observed major weed flora in wheat like *Spilanthus paniculata* (11%), *Ageratum houstonianum* (17%), *Oxalis debilis* var. *corymbosa* (15%), *Solanum indicum* (4%), *Chenopodium album* (3%), *Cynodon dactylon* (28%), *Setaria apumila* (6%) and *Paspallum conjugatum* (15%).

Malik *et al.*, (2005) [11] observed infestation weed flora in wheat in their experimental field with grassy (65%) as well as broadleaf weeds (35%). Among grassy weeds, *Artemisia ludoviciana* was the major weed (80%) along with *Phalaris minor* (20%) whereas broadleaf weeds comprised mainly *Chenopodium album* (40%), *Amaranthus retroflexus* (15%), *Coronopus didymus* (20%), *Melilotus alba* (15%) and *miscellaneous weeds* (10%).

Mishra *et al.*, (2005) [12] observed weeds of wheat like, *aegyptium*, *Paspalum distichum*, *Ischaemum rugosum* and *Eragrostis japonica* among the grasses; *Cyperus iria*, *C. rotundus*, *Fimbristylis miliaceae*, *Scirpus lateriflorus*, and *Eriocaulon quinqueangulare*, among the sedges; and *Caesulia axillaris*, *Eclipta alba*, *Ammania baccifera*, *Cynotis axillaris*, *Commelina communis*, *Alternanthera philoxeroides*, *A. sessilis*, *Monochoria vaginalis*, *Linderina crustacean*, *Hydrolea zeylanica*, *Ludwigia octovalvis*, *Oldenlandia dichotoma* and *Spilanthus clava*, among broad leaved weeds.

Pandey *et al.*, (2006) [16] reported that weeds in wheat such as *Melilotus indica*, *Stellaria media*, *Anagallis album*, *Lolium temulentum*, *Avena ludoviciana*, *Salvia anthemifolia*, *Chenopodium album*, *Polypogon fugax*, *Cynodon dactylon* and *Cyperus rotundus*.

Kanogia and Nepalia (2006) [8] observed that flora of wheat like *Phalaris minor*, *Chenopodium album*, *Chenopodium strummurale*, *Convolvulus arvensis*, *Anagallis arvensis*, *Melilotus indica* and *Spergula arvensis*.

Pandey *et al.* (2006) [16] recorded maximum weed density in wheat in *Phalaris minor* (29.3%), *Melilotus indica* (7.8%), *Anagallis arvensis* (11.1%) and *Coronopus didymus* (20.3%).

Pandey and Dwivedi (2007) [15] reported weed flora in wheat that *Chenopodium album* (40%), *Phalaris minor* (2%), nutgrass (22%) and dubgrass (8%).

Ormeno and Diazo (2007) [14] were observed the major grassy weeds infesting in wheat wild oat, rye grass, dogtail and bulbous oat grass.

Mishra and Singh (2007) observed weed flora in wheat *Echinochloa colona* and *Commelina sp.* and *Phalaris minor*, *Cyperus difformis*, *Ammania baccifera* and *Eriocaulon spp.*

Bharat and Kachroo (2007) [1] observed the occurrence of grassy weeds in wheat such as *annua*, *Phalaris minor* and broad leaf such as *Anagallis arvensis*, *Trachyspermum spp* and *Euphorbia helioscopia*.

Gaffer *et al.*, (2008) [3] reported weed flora in wheat *Chenopodium album*, *Melilotus indica*, *Anagallis arvensis*, *Fumaria parviflora*, *Medicago denticulate*.

Tuti and Das (2011) [22] at New Delhi (IARI) observed that major weed flora in wheat at the experimental field are *Chenopodium album*, *Melilotus indica*, *Avena sterilis* ssp, *Indoviciana* (Dur) among grasses and *Cyperus rotundus* among sedges.

Jha and Kewat (2011) [7] reported that the dominating weed species in wheat were identified as *Echinochloa colona*, *Echinochloa glabrescens*, *Echinochloa acrusgalli*, *Eleusine indica*, *Panicum repens*, *Digitaria sanguinalis*, *Dactyloctenium aegyptium*, *Paspalum distichum*, *Ischaemum rugosum* and *Eragrostis japonica* among the grasses; *Cyperus iria*, *Cyperus difformis*, *Cyperus rotundus*, *Fimbristylis Miliaceae*, *Scirpus lateriflorus*, and *Eriocaulon quinqueangulare*, among the sedges; and *Caesulia axillaris*, *Eclipta alba*, *Ammania baccifera*, *Cynotis axillaris*, *Commelina communis*, *Alternanthera philoxeroides*, *A. sessilis*, *Monochoria vaginalis*, *Linderina crustacean*, *Hydrolea zeylanica*, *Ludwigia octovalvis*, *Oldenlandia dichotoma* and *Spilanthus clava*, among broad leaved weeds.

Singh and Singh (2012) observed weed flora in wheat that *aegyptium*, *Paspalum distichum*, *Ischaemum rugosum* and *Eragrostis japonica* among the grasses; *Cyperus iria*, *Cyperus difformis*, *Cyperus rotundus*, *Fimbristylis miliaceae*, *Scirpus lateriflorus*, and *Eriocaulon quinqueangulare*, among the sedges; and *Caesulia axillaris*, *Eclipta alba*, *Ammania baccifera*, *Cynotis axillaris*, *Commelina communis*, *Alternanthera philoxeroides*, *A. monochoria vaginalis*, *Linderina crustacean*, *Hydrolea zeylanica*, *Ludwigia octovalvis*, *Oldenlandia dichotoma* and *Spilanthus clava*, among broad leaved weeds.

Pisal and Sagarka (2013) [17] observed monocot weeds in wheat such as, *Brachiaria serrate*, *Echinochloa colonum* and dicot weeds viz *Amaranthus viridis*, *Digera arvensis*, *Chenopodium album*, *Euphorbia hirta* and sedges viz *Cyperus rotundus*.

Singh *et al.*, (2013) [19] reported that the weeds in wheat like, *Echinochloa colona*, *Echinochloa glabrescens*, *Echinochloa crusgalli*, *Eleusine indica*, *Panicum repens*, *Digitaria sanguinalis*, *Dactyloctenium aegyptium*, *Paspalum distichum*, *Ischaemum rugosum* and *Eragrostis japonica* among the grasses; *Cyperus iria*, *Cyperus difformis*, *Cyperus rotundus*, *Fimbristylis Miliaceae*, *Scirpus lateriflorus*, and *Eriocaulon quinqueangulare*, among the sedges; and *Caesulia axillaris*, *Eclipta alba*, *Ammania baccifera*, *Cynotis axillaris*, *Commelina communis*, *Alternanthera philoxeroides*, *Monochoria vaginalis*.

Singh and Saxena (2013) [19] reported that weed flora in wheat such as *Melilotus indica*, *Stellaria media*, *Anagallis album*, *Lolium temulentum*, *Avena ludoviciana*, *Salvia anthemifolia*, *Chenopodium album*, *Polypogon fugax*, *Cynodon dactylon* and *Cyperus rotundus*.

## Conclusion

The size of misfortunes generally relies on the piece of weed venture, time of harvest, weed rivalry and their capacity to compete for the essential components with crop plants. Different weeds that are commonly in wheat crop are *Phalaris minor*, *Melilotus indica*, *Stellaria media*, *Anagallis album*, *Lolium temulentum*, *Avena ludoviciana*, *Salvia anthemifolia*, *Chenopodium album*, *Polypogon fugax*, *Cynodon dactylon* and *Cyperus rotundus*. *Avena ludoviciana*, *Lolium temulentum*, *Polypogon monspeliensis*, *Poa annua*, *Sonchus arvensis* Asteraceae, *Carthamusoxycantha*, *Cichorium intybus*, *Euphorbia simplex*, *Asphodelus tenuifolius*, *Chenopodium murale*, *Chenopodium murale*, *Lathyrus sativus*, *Lathyrus aphaca*, *Vicia sativa*, *Vicia hirsuta*, *Medicago denticulata*, *Trigonella polycerata*, *Melilotus alba*, *Melilotus indica*, *Anagallis arvensis*, *Spergula arvensis*, *Stellaria media*, *Saponaria vaccaria*, *Silene conoidea*, *Fumaria parviflora*, *Argemone mexicana*, *Coronopus didymus*, *Sisymbrium irio*, *Malva parviflora*, *Veronica agrestis*, *Lithospermum arvense*, *Antirrhinum orontinum*, *Gnaphalium purpureum*, *Cannabis sativa*, *Oenothera laciniata*, *Arenaria serpyllifolia* and *Ranunculus sceleratus*.

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