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Seasonal dynamics and temporal distribution of Tabanid flies (Diptera: tabanidae) in Warangal district, Telangana state

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Abstract

Tabanids are hematophagous flies of medical and veterinary importance. The study was conducted from August 2023 to July 2025 to know the season wise prevalence of flies in Warangal district. A total of 8488 Tabanid flies collected. The season-wise prevalence revealed highest numbers of species were prevalent during rainy season followed by summer and winter. Total five mandals were selected for this study and sixteen villages from each site at weekly intervals time period these Tabanids were collected with the help Nzi traps method and Sweeping net. The results of this study stated that, the major Tabanids were found in marsh areas, ponds and forest area. Climatic interference and urbanization of city are also affecting the diversity and Tabanids species. This study indicates the seasonal diversity and abundance of Tabanids in the Warangal district of Central Telangana zone.

Keywords: Tabanids, Seasonal prevalence, Warangal district, Nzi traps

Introduction

Telangana is located in the south-central part of India, extending across the Deccan Plateau and the western section of the Eastern Ghats. The state lies between 12°37' and 19°54' North latitude and 76° 46' and 84° 46' East longitude. Covering an area of approximately 1.15 lakh square kilometers, out of the total geographical area, agricultural area consists of 62.4%, forests 22.51%, waste lands 5.81%, water bodies 6.03% and built-up area 3.30%. The state has tiger reserves, 7 wildlife sanctuaries and 3 national parks with diverse flora and fauna. The state has rich biological diversity consisting of over 2800 plant species and 2879 animal species, (Rao *et al.*, 2015) ^[1]. The region exhibits considerable agro-climatic and biogeographic diversity, ranging from flat plains to rocky and hilly landscapes. The major cities in Telangana State include Hyderabad, Warangal, Mahabubnagar, Karimnagar, Nizamabad, and Khammam. It has widely different type of forest which covers around 26,969.48 sq.km of geographical area (Chandra *et al.*, 2015) ^[2] and endowed with numerous perennial and seasonal freshwater bodies, including rivers, lakes, irrigation tanks, and reservoirs. Among all, Warangal District is one of its important semi-arid regions.

The main rivers in the Warangal region include the significant Godavari River, which flows through the district, and its tributaries like the Manair River, while the district also falls within the broader Krishna River basin, with smaller streams like the Munneru originating and flowing towards the Krishna. It provides good habitat for many of the wild, domestic animals and insects. Among the insects, tabanid flies are the most abundant animal pest found in this region. Moist soil and paddy fields (Chainey, 2004) of this region favors the life cycle of tabanids. These flies are hematophagous (telmopaghy or pool-feeding) on wild, domestic animals and sometimes humans living in and around this region. *Tabanids* are proven mechanical and biological vectors for many diseases of animals and human beings (Veer, 2004) ^[3]. The family *Tabanidae* comprises of genus *Tabanus* Linnaeus, 1758 (horseflies); *Chrysops* Meigen, 1803 (deerflies); *Haematopota* Meigen, 1803 (clegs) and *Philoliche* Wiedemann, 1928. They are popularly known as gad flies or gnats in India (Datta, 1985). In Telugu these flies are called as Jorige or Guddie Ega.

Central Telangana Zone

This zone comprises the 187 mandals distributed in 11 districts viz., Sangareddy, Medak, Siddipet, Jangaon, Warangal Urban, Warangal Rural, Mahabubabad, Jayashankar Bhupalpally, Mulugu, Bhadrachalam, Kothagudem and Khammam. The total geographical area of the zone is 38746.57 sq. km with an annual average rainfall of 978 mm. Rainfall range from 779 mm to 1213 mm and major contribution is from southwest monsoon season with 758 mm (77%). Remaining rainfall receives from North East season 121 mm (13%) winter season 24mm (2%) and summer season 75 mm (8%).

Materials and methods:

Study area

The study area included was Deccan plateau, which comprises of semi-arid and red soil as mentioned Table no.1. In this study five mandals of Warangal district were included which consists of sixteen villages (Laknavaram, Chalcwai, Hasanparthi, Geeskonda, Laknepally, Govindraopet, Narsampet, Kazipet, Dharmasagar, Panthini, Singaram, Mamnoon, Bollikunta, Chintagattu,, Mupparam, Pedapendyala of erstwhile district of Warangal, Hanamkonda and Mulugu area.

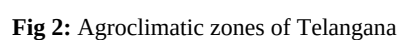
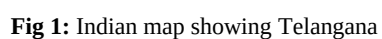
Monthly collections were made during three different seasons, viz., summer season (March, April and May) rainy season (June, July, August and September), and winter season (October, November, December, January, February) during August 2023 to July 2025 from the above-mentioned villages (Table No.1). Fig.1,2,3.

Table 1: Mandal and Village level collection in different seasons

Sr. No.	Mandals (Villages)	Season
1	Khill Warangal (Bollikunta, Singaram Panthani Mamnoon)	Hot Summer (March-June)
		Rainy Monsoon (July-Sept.)
		Winter (Oct.-Feb.)
2	DharmaSagar (Mupparam, Dharmasagar Pedapendyala)	Hot Summer (March-June)
		Rainy Monsoon (July-Sept.)
		Winter (Oct.-Feb.)
3	Hanmakonda (Kazipet Hasanparthy Chintagattu)	Hot Summer (March-June)
		Rainy Monsoon (July-Sept.)
		Winter (Oct.-Feb.)
4	Narsampet (Laknepally, Narsampet Geeskonda)	Hot Summer (March-June)
		Rainy Monsoon (July-Sept.)
		Hot Summer (March-June)
5	Mulugu (Chalcwai, Laknavaram Govindraopet)	Hot Summer (March-June)
		Rainy Monsoon (July-Sept.)
		Hot Summer (March-June)

Table 2: Physical data of 16 sampling sites at Undivided Warangal districts with agro-climatic conditions in Telangana state from August 2023 to July 2025

Sl. No.	Mandals	Sampling Villages	Latitude	Longitude	Altitude (m)	Agro-Climatic conditions of sampling sites	Host
Khill Warangal							
1		Bollikunta	7° 53' 30" N(17.89178)	79° 36' 54" E(79.61514)	280	Tropical, mostly hot and dry, semi	Buffalo Cattle
2		Singaram	17.9689° N	79.5941° E	302	Tropical, mostly hot and dry, semi	Buffalo Cattle
3		Panthani	17.9° N	79.6° E	270	Tropical, mostly hot and dry, semi	Buffalo Cattle
4		Mamnoon	17.93800° N	79.52370° E	285	Tropical, mostly hot and dry, semi	Buffalo Cattle
Dharma Sagar							
5		Mupparam,	18° 00' 17.50"N	79° 23' 32.00" E	353	Semi-arid red soils	Buffalo Cattle Bullocks
6		Dharmasagar	17°59'36"N	79°26'34"E	266	Semi-arid red soils	Buffalo Cattle
7		Pedapendyala	7.9933° N	79.4428° E	292	Semi-arid red soils	Buffalo Cattle
Hanmakonda							
8		Kazipet	7° 58' 0" N (17.9667°)	79° 30' 0" E (79.5000°)	304	Dry soils (shallow gravelly and clayey) and black cotton	Buffalo Cattle
9		Hasanparthy	18°04'05" N	79°31'25" E	262	Dry soils (shallow gravelly and clayey) and black cotton	Buffalo Cattle
10		Chintagattu	18°04'04" N	79°29'39" E	263	Dry soils (shallow gravelly and clayey) and black cotton	Buffalo Cattle Bullocks
Narsampet							
11		Laknepally	17° 56' 33" N	79° 49' 58" E	302	hot and dry, semi red soils	Buffalo Cattle
12		Narsampet	17° 55' 40" N	79° 53' 32" E	243	hot and dry, semi red soils	Buffalo Cattle
13		Geeskonda	17°57'53"N	79°41'50"E	266	hot and dry, semi red soils	Buffalo Cattle
Mulugu							
14		Chalcwai,	18° 12' 32" N	80° 5' 26" E	250	Hot, semi-arid, and sub-humid tropical climate red soils	Buffalo Cattle Bullocks
15		Laknavaram	18.15044° N	80.06960° E	536	Hot, semi-arid, and sub-humid tropical climate red soils	Buffalo Cattle
16		Govindraopet	18.25° N	80.15° E	200	Hot, semi-arid, and sub-humid tropical climate red soils	Buffalo Cattle



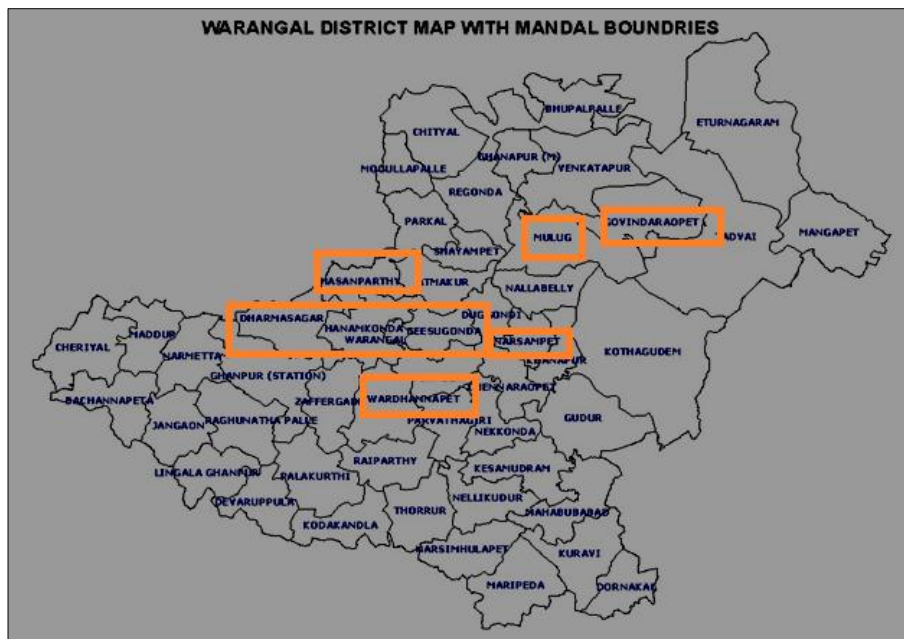


Fig 3: Images showing the study area in Warangal district of Telangana

Methods of fly collection:

Flies feeding on domestic cattle, bullocks and buffalos were collected by handpicking. During peak season, flies were

also collected at dusk using sweep net. Nzi fly traps were installed in Goshalas, Dairy farms and near water bodies.



Fig 4: Images showing Different types of method used during collection of Tabanids

Results and discussion:

The seasonal prevalence of different flies was studied in Warangal district of Telangana from August 2023 to July 2025. The flies were collected from 16 Villages of Warangal district division during the study period (Table 2). The flies especially females were collected by handpicking method while feeding on cattle and buffalo during rainy, winter and summer seasons. The flies were also collected by using traps viz., Nzi trap, with fermented (aged) cow urine as olfactory attractant. The data mentioned in the study deals with seasonal dynamics pertaining to female flies which were collected when they were feeding on the host. No male tabanid flies were collected during the study.

A total of Eight thousand and thirteen flies (8013) were obtained from traps during the study period in the Livestock Research Cattle farms at Mamnoor, Goshalas Chitagattu, Mupparam, Private dairy farms - Remaining four hundred and seventy five (475) flies were collected by sweep net and handpicking methods. An overall 8488 flies were collected during the study period.

Tabanids were found resting on branches of trees, bushes of Lantana (*Lantana camara*) and Eupatorium (*Eupatorium cannabinum*) as their major resting places. Tree trunks of Terminalia (*Terminalia catappa* (*Tectona grandis*)) species were also used by adults.

Seasonal abundance of fly species:

The flies were collected and the prevalence was recorded in all the three seasons of the year. During the study, season wise observation was made, and it was found that, during summer 4 species were recorded in May month, 3 during April month and only one species was recorded in March.

It was observed that *Tabanus indianus* species were prevalent during summer season and disappeared as soon as monsoon began. *Tabanus brunnipenis* emerged just before monsoon and was present in rainy season. All *Tabanus* spp., *Haematopota montana* and *Chrysops dispar* were prevalent during rainy season. In the late monsoon (September) all flies disappeared except *T.rubidus* and *T.dorsiger*. In winter season none of the flies were recorded except *T.rubidus* and *T.dorsiger* during December and late winter. Among all the flies *T.rubidus* and *T.dorsiger* were recorded throughout the year except October and November.

The prevalence percentage of *Tabanus* flies was 71.42 %, followed by 14.28 % in case of *Haematopota* and *Chrysops* spp. As per the records *T.rubidus* and *T.dorsiger* were the most prevalent species (83.33 %) throughout the year followed by *Tabanus brunnipenis* (33.33 %). Other were found only during 3 months out of 12 months.

Seasonal abundance of Tabanid flies:

A total of 8488 flies were collected during all the three seasons among that 8013 by traps and 475 by sweep net and hand-picking method. It was observed that highest number of flies were collected during rainy season with 72.04 % (6115 flies out of 8488 flies from June to September 2023 to 2025), followed by summer season with 17.54 % (1489 flies out of 8488 flies from March to May 2023 to 2025) and late

winter 6.5 %. The least number of flies were observed during winter season with 3.8 % (330 flies out of 8488 flies from October and December 2023 to 2025).

It was observed that the highest number of flies were prevalent during rainy season followed by summer season, and winter season. This indicates that the tabanid flies were more prevalent during rainy season than the other seasons.

Table 3: Overall seasonal prevalence of species wise Tabanid flies in the Warangal district of Telangana state

Seasons	Summer			Monsoon				Winter			Late Winter	
Months	March	April	May	June	July	August	September	October	November	December	January	February
<i>T. indianus</i>		+	+	+	+							
<i>T. rubidus</i>	+	+	+	+	+	+	+			+	+	+
<i>T.dorsiger</i>	+	+	+	+	+	+	+			+	+	+
<i>T.brunnipemis</i>			+	+	+	+						
<i>T.occidetalis</i>				+	+	+						
<i>H.montana</i>				+	+	+						
<i>C.dispar</i>				+	+	+						
Month Total	2	3	4	7	6	6	2			2	2	2

+Prevalent, - Not prevalent

Table 4: Number of Tabanid flies collected during different seasons in Warangal district of Telangana state

Seasons	Hot Summer			Rainy				Winter			Late Winter		Total	R A (%)
Species	March	April	May	June	July	August	September	October	November	December	January	February		
<i>T. indianus</i>			62	140	97								299	3.5
<i>T. rubidus</i>	105	188	425	957	1135	325	232			189	175	145	3876	45.6
<i>T.dorsiger</i>	98	168	321	751	906	232	170			141	124	110	3021	35.5
<i>T.brunnipemis</i>			122	243	341	139							845	10.0
<i>T.occidetalis</i>				112	180	106							398	4.6
<i>H.montana</i>				4	8	5							17	0.2
<i>C.dispar</i>				8	14	10							32	0.3
Total	203	356	930	2215	2681	817	402			330	299	255	8488	
Grand Total	1489			6115				330			554			

Month-wise abundance of tabanid flies:

Month wise abundance and percentage prevalence of tabanid flies was studied and tabulated in Table 4 and Fig.5A. The highest number of tabanid flies were collected in the month of July 31.5 % (2681 out of 8488) followed by month of June with 26.09 % (2215 out of 8488 flies)

followed by May 10.95 % (930 out of 8488) and August with 9.6 % (817 out of 8488 flies), In September with 4.7 % (402 out of 8488 flies), December collection was 3.8 % (330 out of 8488). The least was recorded during January, February and March as 3.5 %, 3.0% and 2.3% respectively.

Table 5: Village wise prevalence of Tabanid flies in Warangal district of Telangana

Sr. No.	Villages	Hot Summer (March-June)	Rainy Monsoon (July Sept.)	Winter (Oct. Feb.)	Total	Prevalence %	Total flies collected
1	Bollikunta	159	415	261	835	9.8	3003
2	Singaram	175	460	280	915	10.7	
3	Panthani	95	234	145	472	5.5	
4	Mamnoor	166	374	241	781	9.2	
5	Mupparam	101	315	202	618	7.2	1725
6	Dharmasagar	91	252	166	509	6.0	
7	Pedapendyala	105	297	196	598	7.0	
8	Kazipet	78	198	119	395	4.6	1151
9	Hasanparthy	89	250	164	503	5.9	
10	Chintagattu	39	131	83	253	3.0	
11	Laknepally	109	241	162	512	6.0	1075
12	Narsampet	61	142	98	301	3.5	
13	Geeskonda	56	123	83	262	3.0	
14	Chalwai,	101	318	196	615	7.2	1534
15	Lakanavaram	102	291	164	557	6.5	
16	Govindraopet	75	178	109	362	4.2	Total 8488

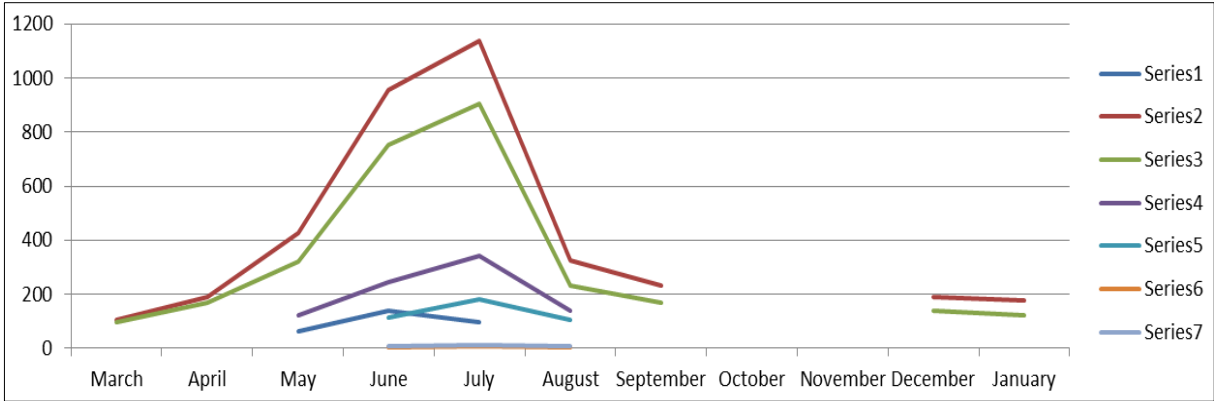


Fig 5: Graph showing month wise prevalence of Tabanids

Table 6: Anova

Source	df	SS	MS	F-value
Villages	15	474,263	31,617	5.21
Seasons	2	1,309,962	654,981	107.9
Error	30	182,097	6,070	—
Total	47	1,966,322	—	—

Tabanid population is strongly influenced by season

Village Effect

- F = 5.21
- Significant (P < 0.01)

Indicates spatial variation among villages

Season Effect

- F = 107.9 (very high)
- Highly significant (P < 0.01)

Tabanid population is strongly influenced by season, peak in Rainy season

Two-way ANNOVA revealed a highly significant effect of seasons (P < 0.01) and villages (P < 0.01) on tabanid population. The rainy season recorded significantly higher abundance compared to summer and winter, indicating strong seasonal influence. Significant inter-village variation suggests the role of local ecological and environmental factors.

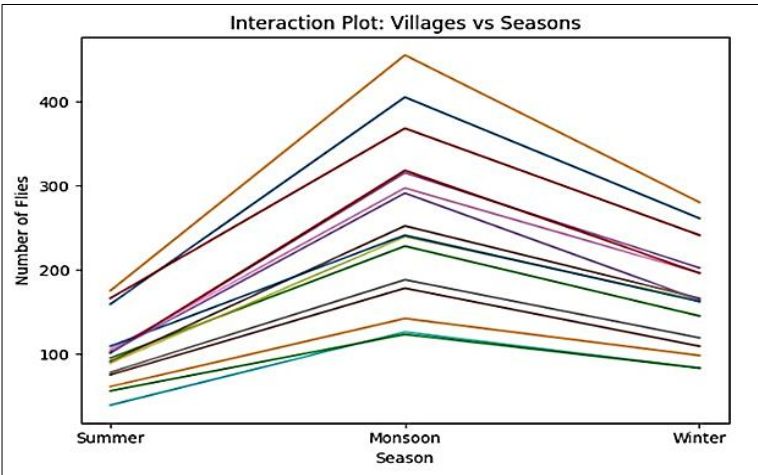


Fig 6: Graph showing Villages Vs Seasons of Tabanids

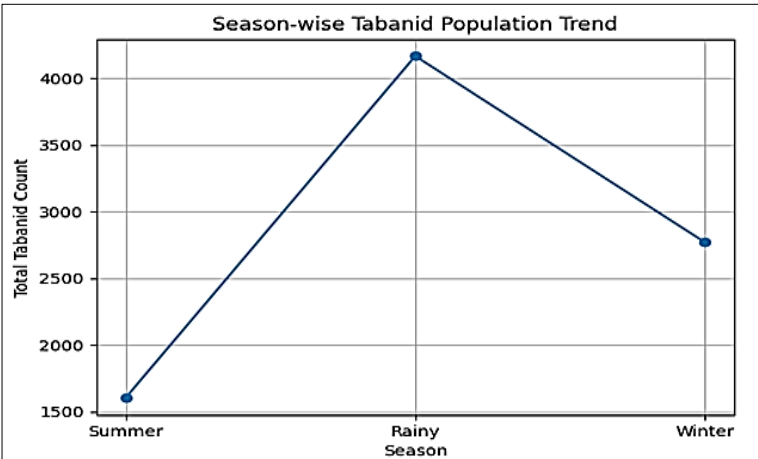


Fig 7: Graph showing season wise Tabanid population trend

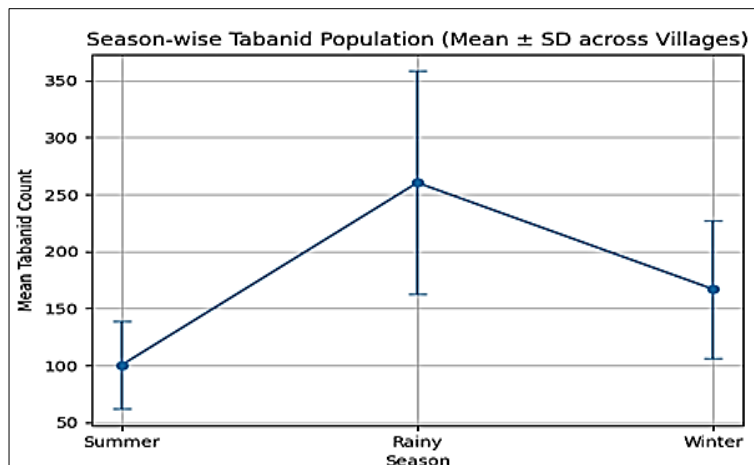


Fig 8: Graph showing season wise Tabanid population trend across villages

Discussion

Warangal district of Telangana has rich diversity of flora and fauna with mammals and birds. These provide good habitat for the development of different stages of tabanid flies. Egg laying requires grass and fallen bamboo nearby water source and moist soil underneath of biomass in forest and paddy field (Chainey, 2004) that help in the larval development and pupation. Further bushes of *Lantana*, *Eupatorium*, and tree trunks act as adult resting places as per Leprince *et al.* (1983) [73]. Flowering plants in forests are the primary source of nectar for both male and female flies. Added to these the cattle and buffalo reared in villages of Warangal district near forest areas also serve as the source of blood meal for adult female tabanid flies. Consequently, the local flora and fauna provide suitable support for every stage of the tabanid life cycle. Along with favorable temperature and rainfall conditions and the factors discussed above, these environmental characteristics facilitate the survival and establishment of tabanid flies in the Warangal district.

Prevalence and seasonal diversity of tabanid flies

It is evident from the present study that there are large numbers of such hematophagous flies inhabiting the Warangal district. Seven species of tabanids belonging to sub families viz., Tabaninae, Chrysopsinae, were found in the present study. Although there were no reports of such survey from the Warangal district and Telangana state, the scrutiny of literature shows that this is the first study on seasonal survey of Tabanid flies from Telangana. The present investigation on the seasonal prevalence and diversity of tabanid flies in the Warangal district of Telangana revealed marked seasonal fluctuations.

The present study demonstrated a clear seasonal trend in tabanid abundance. The rainy season recorded the highest fly population (72.04%), followed by summer (17.54%), while the least abundance was observed during winter (3.8%). Peak activity was recorded during July (31.5%) followed by June (26.09%). The increased abundance during the monsoon season may be attributed to favorable environmental factors such as high humidity, moderate temperature, abundant vegetation, and the availability of breeding habitats created by stagnant water and moist soil conditions. Similar observations were also reported by Foil and Hogsette (1994), who stated that temperature and rainfall strongly influence the breeding and survival of

tabanid flies. High humidity and rainfall provide suitable larval developmental sites and enhance adult fly emergence. The disappearance of several species during late monsoon and winter indicates the influence of climatic factors on seasonal activity. *T. indianus* was observed mainly during summer and early monsoon, while *T. brunnipennis*, *T. occidentalis*, *Haematopota montana*, and *Chrysops dispar* were largely restricted to rainy months. Such seasonal specificity could be related to species-specific ecological requirements and breeding biology. Earlier studies have shown that tabanid species exhibit synchronized emergence patterns depending upon rainfall, temperature, and host availability.

The statistical analysis through two-way ANNOVA further confirmed that both season and village significantly influenced tabanid abundance. The highly significant seasonal effect ($F = 107.9$; $P < 0.01$) emphasizes the strong dependence of tabanid populations on climatic conditions, particularly rainfall and humidity. Similarly, the significant village effect ($F = 5.21$; $P < 0.01$) indicates the importance of local ecological factors in determining fly distribution and abundance. These findings are consistent with earlier ecological studies on tabanids, which identified climate, vegetation, and host density as major determinants of tabanid population dynamics.

H. montana was reported by Stone and Philip (1974) [4]; Kapoor *et al.*, (1990) [5]; Veer (2004) [3]; Vasudeva *et al.*, (2007a) [6], Metri *et al.*, (2021) [7] from diverse locations in India viz., Karnataka, Manipur, Meghalaya and TamilNadu. *C. dispar* was reported by Chandra *et al.*, (2015) [2] and Halder *et al.*, (2019) [8] from Chhattisgarh; Maity *et al.*, (2017a,c) [9, 10] from West Bengal and Veer *et al.*, (2002) from Nandan Kanan Biological Park, Bhubaneswar, Orissa, Metri *et al.*, (2021) [7] from Karnataka.

In the present study the most abundant genus of the Tabanid flies of Warangal district was *Tabanus*, represented by 5 species followed by *Haematopota* with one species, *Chrysops* represented by one species. The same findings have been reported by Chandra *et al.*, (2015) [2] with seven species of genus *Tabanus*, six species of genus *Haematopota*, one species each of genus *Philoliche*, *Chrysops* and *Silvius* from Chhattisgarh.

In different parts of world many researchers reported the prevalence of tabanid flies with variable climatic conditions and geographical areas. Viz., Al-Talafha *et al.*, (2016) stated that *Tabanus* was the most diversified genus in the family Tabanidae and reported six species of genus *Tabanus* from

Malaysia. Furthermore, Al-Talafha *et al.*, (2016) reported eight species of genus *Tabanus* and one species of genus *Chrysops* from Malaysia. Al-Talafha *et al.*, (2018) ^[11] described new species *Tabanus zuhairsi* sp. Nov. from Malaysia.

The variation in findings of different workers for recording number of species under different genera may be attributed to availability of climatic conditions in different geographical area Krcmar (2005a) ^[12]; Suh *et al.* (2015) ^[13]. The seasonal activities of horsefly species also could be varying in different altitude or different places as observed by Altunsoy and Kilic (2012) ^[14].

The genus *Tabanus* with the most diverse species was *Tabanus rubidus* 45.6 percent, followed by *Tabanus dorsiger* 35.5 percent comprising *Tabanus brunnipennis* 10, *Tabanus occidentalis* 4.6, *Tabanus indianus* 3.5 with *Haematopota Montana* with 0.2 percent, *Chrysops dispar* with 0.3 percent and least percent of prevalence was observed in *Haematopota Montana* and *Chrysops dispar*.

Seasonal abundance

Tabanid fly populations are largely shaped by weather conditions, particularly temperature, relative humidity, and the onset of the rainy season. Their numbers generally increase during warm periods and peak in the rainy season, when environmental conditions are most favorable for their development and activity. However, instead of all species reaching peak abundance at the same time, different tabanid species tend to dominate at different periods of the year. This results in a seasonal succession, where one species peaks and then declines as another becomes more abundant later in the season.

In the present study adult fly abundance was greatest during the rainy season, followed by the summer season, and was lowest during the winter season. Likewise, both the number of flies captured, and the diversity of species identified were higher in the rainy season than in the other seasons. A similar report has been given by Vasudeva (2007a) ^[6], who observed maximum tabanid activity during monsoon period from Rajiv Gandhi National Park, Karnataka, India, Maity *et al.*, (2017a) ^[9], Phasuk *et al.*, (2011) ^[15], Croof *et al.* (2017a) and Metri *et al.*, (2021) ^[7] from Karnataka. According to Suh *et al.*, (2015) ^[13] fly abundance during rainy season is more influenced by previous winter temperature when compared to the spring or summer season temperature.

On contrary Maity *et al.* (2015 & 2016 a, b, c, d) ^[16, 42, 43, 44] from West Bengal reported abundant fly population throughout the year with a little decline during winter from West Bengal. This may be attributed to the fact that meteorological conditions of West Bengal are different from that of Warangal, Telangana.

According to Al-Talafha *et al.*, (2005) ^[17] Seasonal abundance and emergence patterns in a particular tabanid species indicate its breeding schedule and how it adapts to the surrounding physical and biological environment. According to Kruger and Krolow (2015), the richness and abundance may be increased more than two and half times if there is an increase of 2 °C in MT and of 8 per cent in mean RH. The occurrence of adult populations in hot and dry climates may be related to the larvae's requirement for warmer temperatures and higher humidity for development, as most larvae live in aquatic environments. The study however, observed a sharp increase in fly population in May

month following the first rainfall. This rise would be due to the collection of many fly species of *T. rubidus* and *T. dorsiger*. Also, it was observed that the decline in number of tabanids from October to February which is probably related to the drier conditions and lower temperatures during the winter months.

According to Altunsoy and Kilic (2012) ^[14] and Koller *et al.*, (2019) ^[18] The time between May to July could be considered as the potentially higher-risk period of mechanical transmission of pathogens by tabanids in Turkey. A similar inference also drawn from the present study as there was high tabanid population during May to July 2023, 2024, 2025. Similarly, Sudhakar *et al.*, (2014) and Muraleedharan (2015) reported high infection rates of cattle and buffalo by *T. evansi* during the rainy season in Karnataka. Among the 7 species recorded in the present study, all are proven vectors for surra, anthrax, blackleg and *Haemorrhagic septicaemia* in domestic and other animals.

According to Singh, (1926), Burton, (1978), Maity *et al.*, (2017) ^[9, 10], Banerjee *et al.*, (2023) ^[19], Basu *et al.*, (1952) ^[20] *Tabanus rubidus* and *Tabanus dorsiger* act as potential mechanical vectors of Surra. In India *T. indianus* were collected during summer season and beginning of monsoon season and *T. brunnipennis*, *T. occidentalis*, *Haematopota montana* and *chrysops dispar* were collected in rainy season. These flies have role in mechanical transmission of anthrax disease and Surra (Rao and Mohiyudeen, 1958), in wild and domestic animals Paulraj *et al.*, (2025) ^[21]. These findings indicate that, tabanid flies which were potential vectors for fatal diseases were prevalent longer duration and might have a behavioral role in transmission of diseases in wild and domestic animals.

Conclusion

The present study was conducted to know the seasonal prevalence and diversity of tabanid flies in Warangal district of Telangana, during August 2023 to July 2025. A total of 5 Mandals (16 villages) were covered. The greatest number of tabanid flies was observed during the rainy season, followed by summer and winter, showing that these flies are most abundant in the rainy season compared with other seasons. The present study helps us identify the tabanid species and their associated pathogens, study report will serve as tool for further planning and integrated fly control measures for infectious diseases transmitted by tabanid flies for livestock in this region. Overall, the present study provides valuable baseline information on the diversity, seasonal abundance, and ecological distribution of Tabanid flies in the Warangal district of Telangana. The data generated may serve as a foundation for developing integrated vector management strategies and for further epidemiological studies on Tabanid-borne diseases in livestock.

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