

RESEARCH ARTICLE

Performance of local landraces of foxtail millet {*Setaria italica* (L.)} P. Beauv under Nagaland conditions

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Abstract

During the summer season and *kharif* season of the year 2024 at the Agronomy farm of the School of Agricultural Sciences, Medziphema campus, Nagaland University, this experiment was conducted under a project entitled 'Agronomic evaluation of local landraces of Foxtail millet in Nagaland'. Randomised Block Design was used for this experiment with 18 landraces and replicated thrice to reduce experimental error. Seeds of different local landraces were taken as different treatments. In summer as well as the *kharif* season at 60 DAS, Aslisie (T_7) recorded the tallest plants (87.11, 95.50, respectively), followed by Akonkon (T_8), but at 90 DAS T_7 recorded the tallest plants (108.33, 119.0, respectively), and T_2 recorded the shortest plants (63.03, 69.50, respectively). At 60 DAS, when most of the photosynthetic activity happened, T_9 and T_{10} (17.60, 17.67, respectively) recorded statistically the maximum number of leaves per plant and T_{17} (7.60) recorded the minimum during the summer season. Similarly, maximum panicle weight during the *kharif* season was observed in T_9 (3.70) and T_{10} (3.40), while minimum panicle weight was found in T_3 (1.05), which was statistically at par with T_1 and T_{14} . Similar to the summer season, seed yield was found maximum in T_9 (960) during the *kharif* season, which was at par with T_{10} (920), and minimum in T_3 (405), which was at par with T_1 (453). T_9 recorded maximum seed yield (819.33), which was statistically at par with T_{10} (781.33), while minimum seed yield (337.33) was observed in T_3 during the summer season.

Keywords: Foxtail millet, phenological observation, growth, seed yield, stover yield

Introduction

Millet, as we call them, the Nutri-cereals, are the small-grained cereals which belong to the family Poaceae/Gramineae. They have long been cultivated in India for hundreds of years and are commonly classified as major millets (Sorghum, Pearl Millet, Finger Millet) and minor millets (Foxtail Millet, Proso Millet, Kodo Millet, Barnyard Millet, Little Millet, Brown top millet) based on their grain size. Millets are known to be so hardy that they can be grown even in areas receiving scanty rainfall with low fertility, making them an ideal choice of crops even for small marginal farmers. They are also a powerhouse of nutrients and gluten free which is why they are called Nutri-cereals. Millet grain is packed with minerals, vitamins, protein and a high fibre content (Karuppasamy, 2015). They have more fibre (kodo millet, little millet, foxtail millet and barnyard millet) and protein (foxtail millet, proso millet, and pearl millet) content than rice and wheat. Millets have at least twice the amount of calcium, especially finger millet, which has thirty times more calcium than rice and they also have a very high iron content (Foxtail and little millet) when compared with rice and wheat. Once a staple diet of Indians, their popularity declined with people gearing towards rice and wheat, but millets are making a comeback because of the general awareness about their nutritive value and being gluten-

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free, making them popular among the health-conscious citizens of our country. The year 2023 has been declared the 'International Year of Millets' in order to promote and increase the production and consumption of millets (Jain, 2023).

Millet production is slowly increasing in our country due to the demand from consumers, with farmers having a renewed interest in the cultivation of millet due to their hardy nature. It also provides poor farmers with nutritious meals that would not be possible with rice or heat alone.

The fact that the Indian government is promoting millet production on a massive scale means the future looks very bright for millet producers and consumers in India and it is expected that millet production in the country will continue to show an upward trend in the years to come (APEDA, 2023). Reviews on foxtail millet from Nagaland are very scarce, and so far, there is only one published paper from Mon district. From the international papers, extensive experiments have been conducted on local landraces in Nepal, but most of the reviews of literature available were related to genetics and few on the agronomical aspect. So, these lacunae provide a very good opportunity to conduct a study of agronomical aspects of foxtail millet production with special reference to Nagaland.

This proposed study helped to properly document the local landraces of our State before we lose some of them, since with the renewed interest in millet cultivation, farmers may opt for the cultivation of more improved varieties with high yield potential to get better returns in the market and forgo the cultivation of traditional varieties which has been passed down from generations only because their yield potential is comparatively lower than the improved varieties widely available in the market. In line with the above discussions, the following project entitled "Agronomic evaluation of local landraces of foxtail millet (*Setaria italica* (L.) P. Beauv.) in Nagaland" was proposed.

Material and Methods

Field work under this proposal was carried out during the summer and kharif season of the year 2024 at the Agronomy farm of the School of Agricultural Sciences, Medziphema campus, Nagaland University and the title of the project was 'Agronomic evaluation of local landraces of Foxtail millet in Nagaland'. This was conducted under a randomised block design with 18 landraces and replicated thrice to reduce experimental error. Seeds of local landraces were collected from different districts of Nagaland before sowing and were tested for germination in pots. After that, seeds of landraces with good germination were selected for carrying out the experiment in the main field during the summer as well as the kharif season of 2024. Due to the different geographical locations of districts of Nagaland and weather conditions from which different landraces were collected, this experiment was conducted during two seasons to see the suitability of these landraces according to season in the Medziphema situation. Recommended dose of fertilizer was applied at the time of sowing and later split application of nitrogen was also made. Different growth parameters were studied according to the proposed plan and their readings were noted and finally data was analysed using the analysis of variance technique (ANOVA) as applied to a randomized block design (Panse and Sukhatme, 1985).

Results and Discussion

Plant height

Data regarding plant height of different landraces of Foxtail millet during summer and kharif season at 30, 60 and 90 DAS is presented in Table 1, and in all landraces, plant height increased up to 90 DAS during both seasons. In summer as well as the kharif season at 60 DAS, Aslisie (T_7) recorded the tallest plants (87.11, 95.50, respectively), followed by Akonkon (T_8), but at 90 DAS, T_7 recorded the tallest plants (108.33, 119.0, respectively), and T_2 recorded the shortest plants (63.03, 69.50, respectively). While comparing summer and kharif seasons, better plant height was observed in all landraces during the kharif season due to better and favourable environment conditions in the kharif season, which helped in better vegetative growth, especially moisture through good rainfall.

Number of leaves per plant

With the advancement of crop age, the number of leaves per plant increased from 30 DAS to 60 DAS during both seasons (summer and kharif) and then decreased up to 90 DAS due to senescence of leaves. At 60 DAS, when most of the photosynthetic activity happened, T_9 and T_{10} (17.60, 17.67, respectively) recorded statistically the maximum number of leaves per plant, and T_{17} (7.60) recorded the minimum during the summer season. A similar trend for the number of leaves per plant was observed during the kharif season at 60 DAS. However, the number of leaves per plant at 60 DAS was more in the kharif season due to better growth of the plant by the availability of sufficient moisture and growing conditions.

Number of tillers per plant

Landraces T_1 , T_2 , T_3 , T_5 , and T_{17} did not show any tillering during the summer or the kharif season (Table 2). During the summer season, the number of tillers per plant increased from 30 to 60 DAS except T_{16} , where it decreased from 0.67 to 0.50. Statistically, T_9 showed the maximum number of tillers per plant (4.80). At 60 DAS, during the kharif season, T_9 showed maximum tillers per plant (5.76), which was even more than during the summer season, where better growing conditions helped in better tillering.

Plant dry weight

With the progress of crop age, dry weight per plant increased from 30 to 90 DAS during both seasons (Table 2). During the summer season, at the initial stage (30 DAS), T_{18} recorded maximum accumulation of dry weight (0.27), which was statistically at par with $T_{6'}$, $T_{7'}$, $T_{8'}$, T_4 , and T_{12} , while $T_{17'}$, $T_{14'}$, T_9 and T_2 recorded minimum accumulation of dry matter (0.08). At 60 DAS, T_1 recorded maximum dry weight (3.29), which was statistically at par with $T_{2'}$, $T_{3'}$, and $T_{7'}$, while minimum (0.76) was recorded in T_{15} , which was statistically at par with

Table 1: Plant height and number of leaves per plant of Foxtail millet landraces during summer and *kharif* season

Landraces	Plant height(cm)						Number of leaves per plant					
	Summer season			Kharif season			Summer season			Kharif season		
	30 DAS	60 DAS	90 DAS	30 DAS	60 DAS	90 DAS	30 DAS	60 DAS	90 DAS	30 DAS	60 DAS	90 DAS
T ₁ (Sührü)	23.53	67.22	77.30	25.90	74.33	86.00	6.30	9.20	7.04	8.21	11.96	9.16
T ₂ (Ketha Suthü)	17.45	62.50	63.03	19.23	67.50	69.50	6.30	8.60	6.90	8.18	11.18	8.97
T ₃ (Ngopirhü Suthü)	16.65	71.02	81.29	18.30	78.00	90.00	6.80	8.90	7.03	8.84	11.57	9.14
T ₄ (Vorebu)	23.35	68.03	80.76	25.73	74.50	89.00	6.50	10.30	7.93	8.47	13.39	10.31
T ₅ (Süti)	22.89	78.39	84.27	25.27	85.50	92.50	6.70	10.00	7.00	8.71	12.97	9.10
T ₆ (Mürasü)	22.25	77.77	96.99	24.50	85.00	106.50	7.00	10.90	9.10	9.10	14.17	11.83
T ₇ (Asiisie)	25.25	87.11	108.33	27.77	95.50	119.00	6.70	10.00	9.23	8.73	13.00	11.99
T ₈ (Akonkon)	26.88	85.38	97.56	29.60	94.00	107.50	7.00	10.10	8.60	9.10	13.04	11.18
T ₉ (Sheko)	19.02	60.68	90.20	20.90	66.00	99.50	6.80	17.60	22.93	8.84	29.81	22.85
T ₁₀ (Hyei Nyak)	24.95	54.14	83.64	27.43	58.50	92.00	6.60	17.67	19.33	8.58	25.13	22.97
T ₁₁ (She)	26.76	80.29	95.99	29.47	88.00	105.50	6.80	10.20	10.57	8.84	13.74	13.26
T ₁₂ (Khaipu She)	26.97	73.06	101.26	29.77	79.50	111.50	7.10	11.07	10.63	9.23	14.39	13.82
T ₁₃ (Nyakshou)	21.86	80.24	84.36	24.00	88.00	92.50	6.20	8.17	9.53	8.06	12.39	10.62
T ₁₄ (China)	19.63	62.02	85.67	21.60	68.00	93.50	6.00	10.73	10.33	7.80	13.95	13.43
T ₁₅ (Longtong Jei)	19.57	66.11	73.00	21.50	72.00	79.50	5.80	12.10	11.97	7.54	15.73	15.56
T ₁₆ (Photpu)	18.41	64.02	83.34	20.23	70.00	91.00	5.40	9.20	8.60	7.02	11.96	11.01
T ₁₇ (Jeinu)	18.53	63.64	95.15	20.57	69.50	104.50	5.50	7.60	7.23	7.28	11.35	10.40
T ₁₈ (SiA3156)	18.44	61.08	90.23	20.43	66.50	99.00	5.60	13.20	9.70	7.15	13.39	12.61
SEm±	2.53	3.27	4.41	2.78	3.60	4.83	0.24	0.98	0.69	0.30	0.86	0.85
CD (p=0.05)	NS	9.39	12.58	8.00	10.36	13.88	0.69	2.80	2.00	0.86	2.47	2.43

all treatments except T₁₃, T₁₂, T₁₁, T₈, T₇, T₃, T₂, and T₁. While at 90 DAS, T₉ recorded maximum plant dry weight (15.93), which was statistically at par with T₁₀ (14.29) and T₂ recorded minimum plant dry weight (4.70), which was statistically at par with T₁, T₃, T₅, and T₁₆.

During the Kharif season, at 30 DAS, T₁₈ recorded maximum plant dry weight (0.39), which was statistically at par with T₈, T₇, and T₄, while T₉, T₁₄, and T₁₇ recorded minimum (0.11). At 60 DAS, T₄ recorded maximum dry weight (4.94), which was at par with T₅ and T₆, while T₃ recorded minimum (1.36). At 90 DAS, T₉ recorded maximum dry weight (23.90), which was statistically at par with T₁₀.

Phenological Observations

All phenological stages in all landraces of Foxtail millet were observed late during the kharif season as compared to the summer season (Table 3). Plants took more days to reach 50 % flowering and 50 % maturity due to better growing conditions in the kharif season. In contrast, there were early 50 % flowering and 50 % maturity during the summer season due to harsh weather conditions, suggesting better growth of Foxtail millet can be observed during the kharif season in this region.

During the summer season, T₁₀ took the maximum days to reach 50 % flowering (74), followed by T₉ (73) and T₃ took the minimum days (60) to reach 50 % flowering, which was statistically at par with T₆ (61.50) and T₈ (62). In all landraces, 50 % flowering was achieved from 60 to 74 day interval. While in the kharif season, T₁₀ took more days to reach 50 % flowering (76), followed by T₉ (75), while 50 % flowering was observed earliest in T₃ (62.5), followed by T₆ (63). During the summer season, T₉ and T₁₀ took the maximum number of days to reach 50 % maturity (91) while T₈ took the minimum days to reach 50 % maturity (81), which was statistically at par with T₁, T₁₁, T₁₂ and T₁₃. Similarly, maximum days to 50 % maturity were taken by T₉ and T₁₀ during the kharif season (94.94) and minimum days by T₈ (84.93), which was statistically at par with T₁, T₅, T₈, T₁₁, T₁₂, T₁₃, and T₁₇.

Yield-attributing characters

Panicle length

During the summer season, the shortest panicle length (9.01) was observed in T₃, which was statistically at par with T₁ (10.53) and T₂ (10.75). In contrast, the longest panicle length (21.47) was observed in T₈, which was statistically at par with

Table 2: Tillers per plant, plant dry weight of Foxtail millet landraces

Landraces	Tillers per plant				Plant dry weight (g plant ⁻¹)					
	Summer season		Kharif season		Summer season			Kharif season		
	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	90 DAS	30 DAS	60 DAS	90 DAS
T ₁ (Sührü)	0.00	0.00	0.00	0.00	0.11	3.29	5.83	0.15	1.42	8.74
T ₂ (Ketha Suthü)	0.00	0.00	0.00	0.00	0.08	2.43	4.70	0.12	1.47	7.05
T ₃ (Ngopirhü Suthü)	0.00	0.00	0.00	0.00	0.09	2.50	6.44	0.13	1.36	9.65
T ₄ (Vorebu)	0.89	1.33	0.80	1.60	0.17	1.63	8.28	0.25	4.94	12.42
T ₅ (Süti)	0.00	0.00	0.00	0.00	0.16	1.63	6.25	0.24	3.65	9.38
T ₆ (Mürasü)	0.22	0.50	0.20	0.60	0.23	1.44	8.30	0.33	3.75	12.45
T ₇ (Asiisie)	0.44	0.50	0.40	0.60	0.20	2.40	9.63	0.29	3.60	14.45
T ₈ (Akonkon)	0.22	0.50	0.20	0.60	0.19	1.91	8.82	0.26	2.86	13.24
T ₉ (Sheko)	1.33	4.80	1.20	5.76	0.08	1.37	15.93	0.11	2.06	23.90
T ₁₀ (Hyei Nyak)	1.11	3.50	1.00	4.20	0.14	1.17	14.29	0.20	1.75	21.44
T ₁₁ (She)	0.89	1.00	0.80	1.20	0.12	1.86	8.73	0.18	2.79	13.09
T ₁₂ (Khaipu She)	0.89	1.00	0.80	1.20	0.17	1.91	9.48	0.24	2.87	14.23
T ₁₃ (Nyakshou)	0.67	0.75	0.60	0.90	0.10	2.33	7.95	0.14	3.49	11.92
T ₁₄ (China)	1.33	1.00	1.20	1.20	0.08	1.40	7.73	0.11	2.10	11.60
T ₁₅ (Longtong Jei)	1.02	1.30	0.92	1.56	0.09	0.76	9.67	0.13	2.45	14.50
T ₁₆ (Photpu)	0.67	0.50	0.60	0.60	0.10	0.95	6.87	0.15	2.45	10.31
T ₁₇ (Jeinu)	0.00	0.00	0.00	0.00	0.08	0.94	7.83	0.11	2.16	11.75
T ₁₈ (SiA3156)	1.11	1.50	1.00	1.80	0.27	1.41	9.47	0.39	2.12	14.20
SEm±	0.00	0.30	0.31	0.36	0.04	0.31	0.87	0.05	0.46	1.31
CD (p=0.05)	0.00	0.85	0.90	1.02	0.10	0.90	2.51	0.14	1.33	3.76

T₁₀ and T₇ (Table 3). Panicle length among all landraces varied from 9.01 to 21.47 cm. During the kharif season, similar to the summer season, T₈ recorded the longest panicle (22.80), which was statistically at par with T₇ (20.90) and T₁₀ (20.90) and the shortest panicle in T₃ (10.63), which was statistically at par with T₁ and T₂. Although panicle length is a genetic character of landraces, growing conditions also determine the length of the panicle.

Number of Panicles

During the summer season, T₉ recorded the maximum number of panicles per plant (2.83) as it was having maximum number of tillers per plant, which was statistically at par with T₁₀ and T₁₈. T₁, T₂, T₃, T₅, and T₁₇ were having minimum number of panicles per plant (1), which was statistically at par with all landraces except T₉, T₁₀, and T₁₇ (Table 3). During the kharif season, just like the summer season, T₉ recorded the maximum number of tillers per plant (3.50), which was statistically at par with T₁₀ (2.83) and the minimum in T₁, T₂, T₃, T₅ and T₇ (1), which was at par with all landraces except T₉, T₁₀, T₁₁ and T₁₈.

Weight of Panicles per plant

During summer season, weight of panicle per plant was observed maximum in T₉ (3.30) which was statistically at par with T₁₀ (3.07) as number of leaves per plant were also found maximum in these landraces which might helped them in good photosynthesis and better translocation of photosynthates from source to sink in these landraces and lowest panicle weight was found in T₃ (0.92) which was statistically at par with T₁, T₅ and T₁₄ (Table 3). Similarly, maximum panicle weight during the kharif season was observed in T₉ (3.70) and T₁₀ (3.40), while minimum panicle weight was found in T₃ (1.05), which was statistically at par with T₁ and T₁₄.

Test weight

During the summer season, maximum test weight (2.78) was found in T₉ and minimum in T₃ (2.36), which was statistically at par with T₁, T₆, and T₁₄ (Table 4). During the kharif season, maximum test weight (2.97) was found in T₉, which was at par with T₁₀ (2.92) and T₁₈, while minimum test weight was found in T₃ and T₁₄ (2.57), which was at par with T₁, T₅, T₆, T₁₂ and T₁₄.

Table 3: Phenological observation and yield-contributing characters of Foxtail millet landraces

Landraces	Days to 50% flowering		Days to 50% maturity		Length of panicle (cm)		Panicles per plant		Weight of panicle Plant ⁻¹ (g)	
	Summer season	Kharif season	Summer season	Kharif season	Summer season	Kharif season	Summer season	Kharif season	Summer season	Kharif season
T ₁ (Sührü)	64.50	68.00	81.50	85.43	10.53	12.03	1.00	1.00	0.97	1.18
T ₂ (Ketha Suthü)	64.00	69.00	84.50	88.44	10.75	12.43	1.00	1.00	1.37	1.57
T ₃ (Ngopirhü Suthü)	60.00	62.50	86.50	90.44	9.01	10.63	1.00	1.00	0.92	1.05
T ₄ (Vorebu)	62.50	66.00	84.50	88.44	12.57	14.17	1.67	2.03	1.52	1.85
T ₅ (Süti)	63.50	65.00	82.50	86.38	12.23	13.57	1.00	1.00	1.23	1.55
T ₆ (Mürasü)	61.50	63.00	84.00	88.03	16.66	18.00	1.33	1.63	1.37	1.75
T ₇ (Asiisie)	65.00	67.50	84.00	87.94	19.53	20.90	1.33	1.67	2.39	2.70
T ₈ (Akonkon)	62.00	64.00	81.00	84.93	21.47	22.80	1.33	1.70	2.35	2.73
T ₉ (Sheko)	73.00	75.00	91.00	94.94	19.07	20.40	2.83	3.50	3.30	3.70
T ₁₀ (Hyei Nyak)	74.00	76.00	91.00	94.94	19.57	20.90	2.33	2.83	3.07	3.40
T ₁₁ (She)	68.00	69.50	82.50	86.44	14.41	15.77	1.83	2.27	2.42	2.77
T ₁₂ (Khaipu She)	67.00	68.00	82.00	85.89	17.70	19.10	1.67	2.03	1.56	1.93
T ₁₃ (Nyakshou)	66.50	69.00	81.50	85.44	14.64	16.00	1.50	1.87	1.31	1.63
T ₁₄ (China)	66.50	69.00	84.50	88.39	13.30	14.70	1.67	2.07	1.01	1.33
T ₁₅ (Longtong Jei)	67.00	69.50	84.50	88.44	12.72	14.03	1.50	1.83	2.04	2.40
T ₁₆ (Photpu)	64.50	65.50	84.50	88.37	11.69	13.07	1.33	1.67	1.67	2.00
T ₁₇ (Jeinu)	64.50	65.50	84.00	87.56	14.08	15.30	1.00	1.00	1.70	2.10
T ₁₈ (SiA3156)	67.50	69.50	84.50	88.44	18.32	19.70	2.00	2.40	2.74	3.10
SEm±	0.75	0.48	1.01	0.98	0.79	0.80	0.32	0.38	0.12	0.11
CD (p=0.05)	2.16	1.37	2.89	2.83	2.26	2.30	0.91	1.09	0.34	0.32

Although test weight is a genetic character of a particular landrace but growing season also helps in different results, resulting in more test weight being observed in all landraces during the kharif season.

Seed Yield

T₉ recorded maximum seed yield (819.33), which was statistically at par with T₁₀ (781.33), while minimum seed yield (337.33) was observed in T₃ during the summer season (Table 4).

Similar to the summer season, seed yield was found maximum in T₉ (960) during the kharif season, which was at par with T₁₀ (920), and minimum in T₃ (405), which was at par with T₁ (453), as final seed yield is the result of different yield-contributing characters. Number of leaves per plant, number of tillers per plant, number of panicles per plant, and weight of panicle per plant were maximum in T₉ and T₁₀, which finally resulted in maximum grain yield in both seasons. Differences in yield among the landraces can be attributed to their genetic potentiality to utilise and translocate photosynthates from source to sink, as suggested by Kumari

and Reddy (2023), Sahaja *et al.* (2019), and Srikanaya *et al.* (2020) in foxtail millet. Also, yield-contributing characters varied among landraces due to their genetic constitution. Similar were the findings of Dhami *et al.* (2018), Gohain and Reddy (2020), and Wankhede *et al.* (2025) in finger millet.

Stover Yield

Maximum stover yield (1907) was found in T₉, which was statistically at par with all treatments except T₁, T₂, T₃, T₅, T₁₂, and T₁₇, while minimum stover yield was in T₃ (1253.67), which was at par with T₁, T₂, T₅, and T₁₇. In the kharif season, T₁₄ recorded maximum stover yield (1892.46), which was statistically at par with T₁₀, T₆, T₇, T₈, T₉, T₁₁, T₁₅, T₁₆, and T₁₈ (Table 4).

Harvest Index

Maximum harvest index in the summer season was found in T₉ (30.06), which was statistically at par with T₄, T₁₀, T₁₁, T₁₂, T₁₄ and T₁₈ (Table 4). During the kharif season, T₉ also recorded the maximum harvest index (35.14), which was at par with T₄, T₁₀, T₁₁, T₁₂, and T₁₈ and the minimum in T₁.

Table 4: Yield components of Foxtail millet landraces

Landraces	Seed Yield (kg ha ⁻¹)		Stover Yield (kg ha ⁻¹)		Harvest index (%)		Test weight (g)	
	Summer season	Kharif season	Summer season	Kharif season	Summer season	Kharif season	Summer season	Kharif season
T ₁ (Sührü)	375.57	453.00	1336.67	1436.08	21.95	24.11	2.39	2.58
T ₂ (Ketha Suthü)	401.67	500.00	1409.33	1442.85	22.19	25.74	2.50	2.69
T ₃ (Ngopirhü Suthü)	337.33	405.00	1253.67	1226.21	21.19	24.96	2.36	2.57
T ₄ (Vorebu)	593.33	710.00	1608.00	1526.81	26.96	31.77	2.48	2.67
T ₅ (Süti)	440.00	530.00	1503.67	1396.21	22.63	27.56	2.43	2.60
T ₆ (Mürasü)	548.33	665.00	1721.40	1802.54	24.10	26.92	2.42	2.61
T ₇ (Asiisie)	554.33	670.00	1689.17	1716.61	24.67	28.10	2.52	2.69
T ₈ (Akonkon)	560.00	685.00	1659.67	1738.44	25.21	28.25	2.52	2.74
T ₉ (Sheko)	819.33	960.00	1907.00	1790.59	30.06	35.14	2.78	2.97
T ₁₀ (Hyei Nyak)	781.33	920.00	1875.91	1811.78	29.35	33.68	2.71	2.92
T ₁₁ (She)	653.00	790.00	1649.34	1648.50	28.33	32.39	2.50	2.68
T ₁₂ (Khaipu She)	590.67	715.00	1571.33	1564.19	27.27	31.41	2.45	2.65
T ₁₃ (Nyakshou)	581.67	705.00	1672.91	1612.12	25.76	30.38	2.46	2.67
T ₁₄ (China)	618.67	755.00	1603.33	1892.46	27.80	28.86	2.40	2.57
T ₁₅ (Longtong Jei)	584.33	725.00	1639.00	1625.42	26.28	30.79	2.55	2.74
T ₁₆ (Photpu)	502.00	615.00	1626.34	1689.86	23.57	26.62	2.45	2.67
T ₁₇ (Jeinu)	472.00	565.00	1567.15	1501.36	23.09	27.35	2.43	2.66
T ₁₈ (SiA3156)	663.33	820.00	1630.00	1730.99	28.92	32.17	2.65	2.89
SEm±	31.37	29.90	110.64	93.57	1.10	1.30	0.02	0.03
CD (p=0.05)	90.16	85.95	317.97	268.93	3.15	3.73	0.06	0.08

Conclusion

Out of 18 landraces of Foxtail millet, T₉ and T₁₀ performed best in terms of growth and seed yield, while the performance of T₃ was very poor. As these trials were carried out during the summer and kharif season, all landraces performed best during the kharif season as compared to the summer season under the Medziphema condition of Nagaland.

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References

- APEDA, 2023. https://apeda.gov.in/apedawebsite/SubHead_Products/NER_Millet_Value_Added_Products_Catalogue.pdf. Accessed on 16 April 2023.
- Channappagoudar, B. B., Hiremath, S. M., Biradar, N. R., Koti, R. V. And Bharamagoudar, T. D. 2008. Physiological Basis of Yield Variation in Foxtail Millet. *Andhra Pradesh Journal of Agricultural Sciences*. 20(3): 481-486.
- Dhami, N.B., Kandel, M., Gurung, S.B., and Shrestha, J. 2018. Agronomic performance and correlation analysis of finger millet genotypes. *Malaysian Journal of Sustainable Agriculture*. 2:16-18.
- Gohain, T. and Reddy, L.M.S. 2020. Performance of finger millet varieties under agro-climatic conditions of Nagaland. *Mysore Journal of Agricultural Sciences*. 54(4):62-65.
- Gopalan, C., Rama Sastri, B.V and Balasubramanian, S. C. 2009. Nutritive Value of Indian Foods, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, India.
- Jain, M. 2008. Why is 2023 the International Year of Millets? What do we achieve by celebrating such years? [https://india.mongabay.com/2023/03/explainer-why-is-2023-the-international-year-of-millets-what-do-we-achieve-by-celebrating-such-years/#:~:text=The%20sudden%20global%20fame%20of,Year%20of%20Millets%20\(IYM2023\)](https://india.mongabay.com/2023/03/explainer-why-is-2023-the-international-year-of-millets-what-do-we-achieve-by-celebrating-such-years/#:~:text=The%20sudden%20global%20fame%20of,Year%20of%20Millets%20(IYM2023).). Accessed on 9 April 2023.
- Karuppasamy, P. 2015. Overview on Millets. *Trends in Biosciences*. 8(13): 3269-3273.
- Kumari, R.C. and Reddy, S.B. 2023. Performance evaluation of foxtail millet varieties in rainfed *alfisols*. *Journal of Research ANGRAU*. 51(1):28-37.
- Panse, V.G. and Sukhatme, P.V. 1985. *Statistical Methods for Agricultural Workers* (4th Ed.). Indian Council of Agricultural Research, New Delhi, 347p.

- Sahaja, D., Prasada, R., G.M.V., Vinayalakshmi, P., and Varaprasad, R., Ch. 2019. Assessment of improved varieties of foxtail millet in rainfed tracts of Parakram district. *Journal of Pharmacognosy and Phytochemistry*. 3:4678-4681.
- Srikanya, B., Revathi, P., Malla Reddy, M., and Chandrashekhar, K. 2020. Effect of sowing dates on growth and yield of foxtail millet varieties. *International Journal of Current Microbiology and Applied Sciences*. 9(4): 3243-3251.
- Wankhede, A.U., Suryavanshi, V.P., Suryavanshi, S.B., Yewale, R.D., and Gaikwad, J.S. 2025. Yield and economics of finger millet as influenced by varieties and different spacings in *kharif* season. *Plant Archives*. 25(2):670-674.