

Supplementary Data

Supplementary Table 1. Item difficulty index and item discrimination index of items under crop-based module of farmer FIRST programme

Item number	Item difficulty index	Item discrimination index
1	83.33	0.25
2	50**	0.35**
3	43.33**	0.45**
4	81.66	-0.25
5	51.67**	0.25
6	52.67**	0.45**
7	13.33	0
8	58.33**	0.4**
9	45**	0.45**
10	40**	0.25
11	11.67	0.25
12	46.67**	0.3**
13	53.33**	0.25
14	13.33	0.15
15	48.33**	0.5**
16	83.33	0.3**
17	85	0.15
18	55**	0.2
19	61.67**	0.35**
20	100	0
21	46.67**	0.5**
22	43.33**	0.45**
23	28.33	0.25
24	51.67**	0.45**
25	61.67**	0.35**
26	43.34**	0.55**
27	43.34**	0.5**
28	48.34**	0.2
29	83.33	0.25
30	48.34**	0.5**
31	45**	0.45**

Supplementary Table 2. Questions for studying level of knowledge about technologies under crop-based modules of FFP

Sl. no.	Statements	Score by the interviewer
1	Which of the following is a key characteristic of the Pratikshya rice variety? (a) High lodging tolerance (b) Resistance to bacterial leaf blight (c) Early maturity (d) Pest attraction	
2	What is the average duration of the Pratikshya rice variety from sowing to harvest? (a) 90-100 days (b) 120-130 days (c) 140-145 days (d) 160-170 days	
3	What is a reported advantage of cultivating Pratikshya in rice-fallow systems? (a) High yield under rainfed conditions (b) Requires high fertilizer input (c) Susceptible to blast disease (d) Delayed maturity	
4	Pratikshya rice variety shows moderate resistance to Brown Plant Hopper (BPH). (a) True (b) False	
5	How can scientific production methods enhance the yield of short-grained aromatic rice? (a) Decreasing water availability (b) Using traditional farming techniques (c) Implementing modern agricultural practices (d) Ignoring pest control measures	
6	Selling the rice directly to consumers is a common method for value addition in short-grained aromatic rice. (a) True (b) False	
7	What role does soil management play in the scientific production of aromatic rice? (a) No impact on rice quality (b) Affects aroma intensity (c) Reduces market value (d) Increases water usage	
8	What is one common method of post-harvest processing for short-grained aromatic rice? (a) Sun drying on the ground (b) Immediate packaging without processing (c) No post-harvest processing needed (d) Mechanical threshing	
9	Why is round-the-year fodder production important for crossbred milch cows? (a) To save money (b) To maintain consistent milk production (c) To promote herd diversity (d) To reduce the number of cows	
10	Leguminous and grass fodder type of fodder is suitable for providing essential nutrients to crossbred milch cows. (a) True (b) False	
11 season presents a challenge for fodder availability, emphasizing the need for year-round production. (a) Spring (b) Summer (c) Monsoon (d) Winter	

12is the primary benefit of having a diverse range of fodder for crossbred milch cows. (a) Increased milk prices (b) Improved reproductive health (c) Decreased water consumption (d) Reduced milk production	
13	How can farmers ensure a continuous supply of green fodder during the non-growing season? (a) Rely on purchased fodder (b) Implement crop rotation (c) Reduce the number of milch cows (d) Provide only dry fodder	
14 fodder conservation method helps farmers store excess green fodder for use during the dry season. (a) Sun drying (b) Silage making (c) Haymaking (d) Grazing	
15	How can crop residues be utilized effectively in fodder production for crossbred milch cows? (a) Discard them as waste (b) Use them as fuel (c) Incorporate them into silage (d) Sell them to neighbouring farms	
16	In..... phase of the milch cow's life is proper fodder management most crucial. (a) Dry period (b) Calving Period (c) Lactation period (d) Gestation period	