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Promoting Healthy Living through Natural Farming: The Journey of Sh. Sonam Pambhar from Liktsey, Leh

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INTRODUCTION

Agriculture in the cold arid regions of Ladakh presents several unique challenges extreme temperature fluctuations, short growing seasons, and fragile soils with minimal organic matter. In such an environment, sustainable farming practices are not only necessary for productivity but also for survival. Among the smallholder farmers of Liktsey village in Leh district, Sh. Sonam Pambhar has emerged as a beacon of innovation and perseverance. Despite having only a 5th standard education, he has demonstrated remarkable curiosity and resilience in experimenting with natural farming techniques, transforming his small holding into a vibrant model of eco-friendly agriculture. His journey exemplifies how dedication, coupled with scientific guidance from institutions like Krishi Vigyan Kendra (KVK) Nyoma, can lead to a paradigm shift from dependency on chemicals to self-reliant, nature-based agriculture. Natural farming has enabled him to maintain soil fertility, reduce pest incidence, and ensure a regular supply of fresh, healthy vegetables for his family. His success underscores the potential of natural farming to enhance livelihoods, health, and ecological balance in the cold desert of Ladakh.

Uniqueness Of Work Related To Natural Farming: The uniqueness of Sh. Sonam Pambhar's work lies in his bold decision to adopt natural farming in one of India's most challenging agro-climatic zones. Ladakh's growing conditions—characterized by low precipitation, high diurnal temperature variation, and coarse sandy soils—make farming difficult even under conventional systems. Yet, with sheer determination and guidance from the local agricultural extension network, he transitioned to natural farming practices within just a year. Unlike conventional farmers who depend heavily on external chemical inputs, Sh. Pambhar's approach emphasizes self-reliance, resource recycling, and ecological balance. His farm represents a living laboratory where traditional wisdom meets modern agro-ecological understanding. By applying Jeeva Amrit, he has improved microbial activity in the soil, which directly contributes to better root growth and plant vigor. The results have been visible—his crops exhibit healthier foliage, stronger stems, and better yields compared to earlier seasons. His openness to learning, risk-taking ability, and community-oriented mindset make his efforts truly unique. He has become an example of how farmers in remote mountain regions can embrace innovation and contribute to broader goals of climate-resilient and health-oriented agriculture.

Major Practices of Natural Farming Adopted: On his modest farm, Sh. Sonam Pambhar cultivates a diverse range of crops—barley, oats, peas, fruits like watermelon, and seasonal vegetables such as spinach, cabbage, and carrots. This diversity ensures food and nutritional security throughout the growing season. His natural farming system integrates a series of complementary practices that enhance soil and crop health while reducing costs.

Key practices include:

- Jeeva Amrit application: A microbial-rich tonic prepared on the farm, applied regularly to activate soil biology and improve nutrient cycling.
- Intercropping: Strategic combination of cereals and legumes improves nitrogen fixation and prevents pest build-up.
- Mulching: Use of crop residues and dry leaves to retain soil moisture, suppress weeds, and moderate temperature fluctuations.
- Minimal tillage and soil cover: Maintaining continuous soil cover prevents erosion and maintains soil carbon levels.
- Use of botanical bio-pesticides: Locally prepared neem, garlic, and chili-based extracts effectively manage pests without chemicals.

By aligning his farming with the natural ecosystem, he has been able to maintain productivity even under limited water availability, making his model highly adaptable to cold desert conditions.

Area Renovation Centre Developed At Farm: Over time, Sh. Sonam Pambhar's farm has evolved into a functional Area Renovation Centre, demonstrating the potential of natural farming to regenerate soils and livelihoods. Visitors, including nearby farmers and agricultural functionaries, frequently visit his plots to observe firsthand the results of his natural farming experiments. His cereals, vegetables, and fruits are grown in visibly fertile, healthy soils—an outcome rarely observed under conventional farming in such harsh climates. His field layout illustrates systematic use of mulching, mixed cropping, and organic inputs. The visible improvements in soil structure—spongier texture, better moisture retention, and improved aeration—are key learning points for other farmers. This field has become a living classroom for local farmers, who are often surprised by the productivity achieved without chemical fertilizers or pesticides.By hosting farmer group visits and engaging with KVK Nyoma's training teams, Sh. Sonam Pambhar contributes actively to community-based capacity building. His farm now acts as a demonstration hub for hands-on learning in natural farming principles and innovations adapted to cold desert ecosystems.

Methodology of Preparation of Bio-Inputs: The cornerstone of Sh. Sonam Pambhar's natural farming system is the preparation and use of Jeeva Amrit—a nutrient-rich microbial formulation made from locally available materials. The ingredients—cow dung, cow urine, jiggery, pulse flour, and native soil—are mixed in specific proportions and allowed to ferment for 7–10 days. This preparation becomes a powerful bio-stimulant when diluted and applied to the soil or as a foliar spray. Regular use enhances microbial diversity, nutrient solubilisation, and overall soil vitality. This blend effectively repels aphids, caterpillars, and

fungal infections, significantly reducing the need for chemical control measures. Such formulations represent low-cost, eco-friendly, and replicable technologies that can easily be adopted by small and marginal farmers. They also encourage on-farm input production, thus reducing dependency on external markets while promoting self-sufficiency and sustainability.

Marketing Strategy: Marketing remains one of the most crucial aspects of sustainable farming. Sh. Sonam Pambhar has smartly adopted a community-based marketing approach that prioritizes trust, quality, and local networks. His naturally grown vegetables, cereals, and fruits are sold directly within Liktsey and neighboring villages through door-to-door sales and weekly local markets. Because his produce is free from harmful chemicals and freshly harvested, it commands a premium perception among consumers who are becoming increasingly aware of food safety and health. By building strong relationships and transparency with buyers, he has secured a steady and loyal customer base.

This localized marketing strategy minimizes transportation costs, reduces post-harvest losses, and enhances profit margins. His success highlights the potential for short-value chains in mountain regions, where proximity and trust often outweigh formal certification.

Economic Analysis: Natural Vs. Conventional Farming

Parameters	Natural Farming				Conventional Farming			
Crop	Barley (0.5 ac)	Pea (0.0625)	Fruit (0.0312)	Vegetables (0.25)	Barley (0.5 ac)	Pea (0.0625)	Fruit (0.0312)	Vegetables (0.25)
Cost of cultivation (₹)	6200	2100	1600	1700	8650	2408	2300	2050
Production (kg)	508	31	60	90	466	28	42	61
Gross return (₹)	25400	3100	4800	7200	20970	2800	3360	4880
Net return (₹)	19200	1000	3200	5500	12320	392	1060	2830
B:C Ratio	4.10	1.48	3.00	4.24	2.42	1.16	1.46	2.38

The data clearly demonstrate that natural farming enhances profitability while minimizing cultivation costs across all crops. The highest benefit–cost ratio was recorded in vegetable cultivation (4.24), closely followed by barley (4.10), while fruit crops (3.00) and peas (1.48) also performed better than their conventional counterparts. In comparison, the B:C ratios under conventional farming ranged from 1.16 to 2.42, highlighting the economic advantage of the natural system. These figures reaffirm that natural farming is not only economically viable but also environmentally sustainable, particularly in regions like Ladakh where resources are limited and climatic conditions are harsh.

Influence on Other Farmers: The achievements of Sh. Sonam Pambhar have created a visible ripple effect within the farming community of Liktsey and nearby villages. His success story, coupled with his approachable nature, has encouraged other farmers to experiment with natural inputs and eco-friendly pest management techniques. Farmers often seek his advice on Jeeva Amrit preparation, mulching methods, and crop diversification. His field demonstrations have become crucial in peer-to-peer knowledge dissemination, allowing information to spread organically across the community. By actively engaging in farmer discussions and sharing practical tips, Sh. Sonam Pambhar has become a grassroots extension agent, bridging the gap between scientific knowledge and local practices. His influence is gradually transforming conventional mindsets and fostering a new generation of environmentally conscious farmers in Ladakh.

Impact: The overall impact of natural farming on his household and farm ecosystem has been transformative. The soil structure has improved remarkably, becoming porous and better at retaining moisture. The reduction in pest and disease occurrence has minimized crop losses and chemical exposure. At the household level, the availability of diverse vegetables and fruits throughout the season has significantly improved family nutrition and food security. His family reports better health outcomes due to the consumption of chemical-free produce. Financially, the reduction in input costs has translated into higher savings and reinvestment potential. Environmentally, his farm now functions as a closed-loop system, where waste is

recycled into inputs, reducing the carbon footprint. This demonstrates how natural farming can serve as a powerful adaptation strategy for climate-resilient agriculture in high-altitude regions.

Role of KVK Nyoma in Promoting Natural Farming: KVK Nyoma has played a crucial role in nurturing this transformation by providing continuous guidance, field visits, and technical backstopping. The Centre introduced him to natural farming concepts and supported him in adopting bio-input production, crop planning, and pest management. Going forward, KVK can amplify its efforts by organizing structured training programs, exposure visits, and farmer field schools to scale natural farming across the Leh district. Establishing market linkages, group certification, and branding of natural produce will further enhance farmer incomes. Moreover, identifying and training farmers like Sh. Sonam Pambhar as community resource persons can accelerate the diffusion of these sustainable practices across remote villages of Ladakh.

CONCLUSION

The journey of Sh. Sonam Pambhar reflects how smallholder farmers in the cold desert of Ladakh can lead the way toward sustainable and health-oriented agriculture through natural farming. His persistence, supported by continuous technical guidance from KVK Nyoma, has not only improved his farm's productivity but also inspired a grassroots movement for chemical-free food production within his community. His success story underscores a powerful message—that natural farming is not merely a cultivation technique but a holistic way of life, promoting harmony between humans, soil, and nature. By proving that eco-friendly methods can yield economic and nutritional benefits even in the most challenging environments, he has become a symbol of rural resilience and innovation. The model established in Liktsey demonstrates that climate-resilient, low-input, and nutritionally rich farming systems are achievable through local resources and knowledge-sharing. It offers a replicable blueprint for other mountain and cold-arid regions seeking sustainable pathways to enhance productivity, ensure food security, and preserve ecological integrity. Ultimately, Sh. Sonam Pambhar's efforts reaffirm that the future of agriculture in fragile ecosystems like Ladakh lies not in intensification through chemicals, but in reviving the balance of nature, nurturing soil health, and empowering farmers as custodians of sustainability.