*Original Research*

# Factors Influencing the Willingness for Adoption of Livestock Insurance among Dairy Owners

**Jitendra Kumar[1], Sanjeev Kumar Singh[1], Amit Singh[1*] and Deepak Sharma[2]**

College of Veterinary Science & Animal Husbandry, U. P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan, Mathura-281001, Uttar Pradesh, INDIA

[1]Department of Veterinary & Animal Husbandry Extension Education
[2]Department of Animal Genetics & Breeding

***Corresponding author:** dr25amitsingh@gmail.com

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**Abstract**

*India is an agrarian country and livestock which plays a multifactoral role are raised as part of mixed farming systems especially in rural economy. Usually, the livestock economy is a source of self-insurance for farmers, but in the event of any disease outbreak/ disaster, livestock owners suffer. Therefore to mitigate these situation livestock insurance has emerged as a tools to transfer financial risk of dairy owners to a third party by paying a merge amount of premium. But the scheme has not shown encouraging result in term of its adoption by dairy farmers. Thus the study was conducted to identify the factors influencing the adoption of Livestock Insurance among dairy owners. The study was carried out purposively in the state of Uttar Pradesh. A total of 100 dairy farmers were selected randomly from 10 villages. The study reflects that adoption of livestock insurance among livestock owners is mainly effected by motivation by friends & community members followed by high probability of disease occurrence in particular area, effective risk assessment and previous experience of livestock owners. It was also concluded that the insurance institution should take measure like developing infrastructure, to reduce the premium and appoint proper individual to guide the farmers for the insurance.*

**Key words:** Adoption, Dairy Farming, Dairy Owners, Livestock Insurance, Willingness

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## Introduction

Livestock plays a multifactoral role in livelihood as it provides food, nutrition, income, increase soil productivity, transport, family and community employment, besides a symbol of social status (Moyo and Swanepoel, 2010). Livestock comprise an important productive asset and source of income for about two-

third of India's farm households (Birthal, 2008). At constant prices the value of output from livestock is about 29% of the value of the output from total agriculture and allied sector (Annual Report, 2015-16). The additional income derived from rearing of livestock is a great source of support to the farmers facing uncertainties of crop production, apart from providing sustenance to poor and landless farmers. Over a last decades Government of India have taken several measures for disease control and improvement in genetic quality of dairy animals, besides launching several animal husbandry projects like Intensive Cattle Development Programme (ICDP), Key Village Scheme (KVS), Intensive Dairy Development Programme (IDDP), Dairy Entrepreneurship Development Scheme (DEDS), Fodder and Feed Development Scheme (FFDS) etc., to boost dairy production. The efforts had resulted in making India as world leading milk producer with overall production of nearly 146.3 million tonnes (2015-16) with a growth rate of 6.2 per cent per annum. It has been felt that along with providing effective steps for disease control and improvement of genetic quality of animals, a proficient tools is required to transfer financial risk of dairy owners to a third party by paying a merge amount of premium. Hence in order to check economic losses of the livestock sector, the Government launched a centrally sponsored scheme on Livestock Insurance during the 10$^{th}$ Plan (2001-2005). The benefit of livestock insurance with farmer helps to reduce the prevention of the effects of disasters and creates a real opportunity for a partnership between farmers and the private sector on one side and with the government on the other side. To assure the maximum coverage of animals the livestock insurance scheme was further implemented in all states of the country. But study conducted by Birthal and Taneja (2012) indicated that the performance of livestock insurance sector is however not encouraging, since the scheme had covered only 0.9 million dairy animals in 2010–2011. The poor performance of the scheme is mainly because of its restrictions on numbers and quality of animals and the period of insurance cover. Thus the study was planned to study the factors influencing the adoption behaviour of Livestock Insurance among dairy owners so that the research gap can be filled.

**Materials and Methods**

The ex-post-facto research design was adopted for the study since the phenomenon had already occurred. The study was purposively conducted in Mathura district of Uttar Pradesh since the district is having adequate Veterinary intervention through State Animal Husbandry Department, Veterinary University, ICAR-Central Institute for Research on Goats (CIRG) etc. Besides this Mathura district is endowed with 1.42 lakh cattle population and about 7.23 lakh Buffalo population. Multistage random sampling procedure was adopted for the present study. Five randomly selected blocks were taken for the study and from each block two villages were selected randomly, thus comprising a total of 10 villages. Ten respondents were selected randomly from each village, with a total of 100 respondents for this study. The selected respondents must possess a milch animal as well as at-least five year of experience in rearing dairy animal in addition





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to their basic agriculture occupation. Based on review of literature and consultation with experts socio-economic variables were considered for the study. Among these socio-economic variables except education and land holding all were categorized based on mean ± standard deviation (SD). The adoption behaviour among livestock owner in respect to livestock insurance were studied on three point continuum, viz., S.A. (Strongly agree), A. (Agree), D.A. (Disagree) with the score of 3, 2 and 1 respectively and reverse for the negative statements.

$$\text{Weighted Mean Score} = \frac{\text{(Actual scores obtained for the statement)}}{\text{Maxi possible scores obtainable for the statement}}$$

After duly recording their judgments, the statements were considered for the analysis. The weighted means score of the statement was calculated and the statements were ranked accordingly.

**Result and Discussion**

**Socio-Economic Profile of Dairy Farmers**

The results obtained for the socio economic profile of the dairy owners were presented in Table 1. The data reveals that majority (72.00 %) of respondents belong to middle and young age category. It was seen that 74.00 percent of the population is literate which is higher than the average literacy rate (70.12%) of the district. The higher literacy rate can also serve as important factor of adoption of livestock insurance. It was further observed that that majority of respondent (77.00%) are having agriculture as major occupation while 11.0 percent have taken dairy farming as their main occupation. They possess a rich experience in dairy production as majority of them is having more than 18 year of experience in dairy farming. The study reveals that majority of the respondent (76.0%) is rearing more than two milch animals, predominantly buffalo and the total household milk production ranges from 4-24 litres respectively. The results reveal that except 32.00 percent of respondents, all were having land. But still all the respondents are engaged in some kind of agriculture activities.







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**Table 1:** Socio–economic profile of dairy owners (n=100)

| S. No. | Variables | Category | Percentage | Frequency |
|---|---|---|---|---|
| 1 | Age | Young (<35 years) | 35 | 35 |
| | | Middle ( 35-50 years) | 42 | 42 |
| | | Old ( >50 years) | 23 | 23 |
| 2 | Education | Illiterate | 26 | 26 |
| | | Middle | 15 | 15 |
| | | Secondary | 28 | 28 |
| | | Higher Secondary | 14 | 14 |
| | | Graduate and above | 9 | 9 |
| 3 | Occupation | Agriculture | 77 | 77 |
| | | Livestock | 11 | 11 |
| | | Business | 0 | 0 |
| | | Service | 8 | 8 |
| | | Labour | 0 | 0 |
| | | Microenterprise (Any ) | 3 | 3 |
| | | Any Other ( specify ) | 1 | 1 |
| 4 | Experience | Low (< 18 year) | 11 | 11 |
| | | Medium (19-29 year) | 38 | 38 |
| | | High (> 29 year) | 51 | 51 |
| 5 | Herd size | Small (< 2) | 24 | 24 |
| | | Medium (2-4) | 47 | 47 |
| | | Large( > 4 ) | 29 | 29 |
| 6 | Milk production | Low (< 3.0) | 0 | 0 |
| | | Medium (4-14) | 66 | 66 |
| | | High (> 14.0) | 34 | 34 |
| 7 | Land holding | Landless ( 0 ha) | 32 | 32 |
| | | Marginal ( <1 ha ) | 37 | 37 |
| | | Small (1-2 ha) | 25 | 25 |
| | | Semi-medium (2-4 ha) | 3 | 3 |
| | | Medium (4-10) | 2 | 2 |
| | | Large ( >10 ) | 1 | 1 |
| 8 | Total income | Low (< 71565.00) | 3 | 3 |
| | | Medium (72000-221512 ) | 57 | 57 |
| | | High (> 221512.00 ) | 40 | 40 |

**Personal Factors Affecting the Adoption of Livestock Insurance**

The results presented in Table 2 reveal the personal factors affecting the adoption behaviour of livestock insurance among dairy owners. The result indicate that adoption of livestock insurance is mainly influence by individual motivation performed by friends and community members followed by high probability of diseases occurrence in particular area, effective risk assessment and livestock insurance provides protection to dairy farming were ranked first, second and third respectively. The other personal deciding factors that are influencing the adoption of livestock insurance includes high purchase cost of milch animal, act as a measure of saving by the owners and it make dairy farming quiet easy.





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**Table 2**: Personal factor affecting the adoption of livestock insurance (n=100)

| S. No. | Item | S. A. | A. | D. A. | Weighted Mean | Rank |
|---|---|---|---|---|---|---|
| 1 | Motivation by friends and community. | 97 | 2 | 1 | 98 | I |
| 2 | The last experience of dairy farming helps in adoption. | 85 | 13 | 2 | 8.5 | X |
| 3 | High cost involved in the treatment of animal will improve the adoption. | 75 | 17 | 8 | 83.5 | IX |
| 4 | High purchase cost of milch animal will improve. | 88 | 10 | 2 | 93 | IV |
| 5 | Livestock insurance act as a personal saving. | 87 | 10 | 3 | 92 | V |
| 6 | Effective risk assessment helps in improving adoption. | 88 | 12 | 0 | 94 | III |
| 7 | Livestock insurance provides protection to dairy farming. | 90 | 8 | 2 | 94 | III |
| 8 | High probability of diseases occurrence. | 95 | 5 | 0 | 97.5 | II |
| 9 | Livestock insurance help to reduce the personal financial stress. | 78 | 20 | 2 | 88 | VIII |
| 10 | Regular price fluctuation of milk and milk products improve adoption of livestock insurance. | 85 | 10 | 5 | 90 | VII |
| 11 | Livestock insurance make dairy farming more easy. | 87 | 9 | 4 | 91.5 | VI |
| 12 | No satisfactory response from insurance company for queries under its adoption. | 94 | 6 | 0 | 3 | XI |

*SA= strongly agree, A= Agree, DA= disagree*

Sharma (2014) also stated that the personal challenges faced by insurers in the sense that the burden of all risks are passed on to the insurer as ex-ante risk mitigation strategies in the form of vaccination, de-worming, etc are not well in place. It was further revealed that the past experiences of dairy owners about livestock insurance and unsatisfactory response from the insurance companies are still hindering its adoption among the owners. Therefore measure should be introduced to counter these issues so that more dairy owners can be added towards the livestock insurance. These finding were also in accordance with results observed by Sendilkumar and Mishra (2013), Amini *et al.* (2002) and Narayanan and Saravanan (2011).

**Institutional Factors Affecting the Adoption of Livestock Insurance**

The results presented in Table 3 reveals the institutional factors affecting the adoption of livestock insurance. The result indicated that there should be improvement in the infrastructure for the insurance companies so that majority of the population can be reached than only livestock insurance provided by insurance companies are easy to adopt. It was further observed that the deciding factors for the livestock insurance is when it is made compulsory for all dairy animals, government further reduces the premium of insurance premium and it is available on subsidized rates and presence of agents at the village and block levels were ranked 2, 3 and 4$^{th}$ respectively.

Apart from these livestock insurance premium when available on subsidized rates, presence of insurance agents and their services at village and block levels, fair practices in issuing health and post-mortem certificate from veterinarian limit and it adoption and availability of adequate subsidies will help to improve the adoption of livestock insurance. Sharma (2014) also concluded that cattle insurance market with its





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limited penetration is considered insufficient in developing countries and requires substantial investment and innovation for it to become a wholly successful venture. Teweldemedhin and Kafidii (2009) also stated that to increase the farmers' participation in insurance, policy makers and insurers should design a program to educate them about different sources of risk and risk management tools.

**Table 3:** Institutional factors affecting the adoption of livestock insurance (n=100)

| S. No. | Item | S. A. | A. | D. A. | Weighted Mean | Rank |
|---|---|---|---|---|---|---|
| 1 | There is necessity in improving the infrastructure before livestock insurance. | 96 | 4 | 0 | 98 | I |
| 2 | Livestock insurance provided by insurance companies are easy to adopt. | 96 | 4 | 0 | 98 | I |
| 3 | Companies delay the claim process. | 94 | 5 | 1 | 3.5 | X |
| 4 | Livestock insurance should be made compulsory for all dairy animals. | 93 | 5 | 2 | 95.5 | II |
| 5 | I will adopt livestock insurance when its premium is available on subsidized rates. | 85 | 13 | 2 | 94 | III |
| 6 | Presence of insurance agents and their services at village and block levels. | 89 | 10 | 1 | 94 | IV |
| 7 | Presence of malpractices in the health and post-mortem certificate from veterinarian limit it adoption. | 88 | 10 | 2 | 7 | IX |
| 8 | Government should reduce the premium rate of livestock insurance. | 78 | 20 | 2 | 91.5 | V |
| 9 | Timely arrival of insurance inspector for the inspection after animal mortality | 78 | 22 | 0 | 89 | VI |
| 10 | Distantly located veterinary hospital lead to non adoption of livestock insurance. | 81 | 15 | 4 | 88.5 | VII |
| 11 | Limited number of institutions only provides livestock insurance facilities. | 80 | 17 | 3 | 88.5 | VII |
| 12 | Presence of less alternative to risk management help in adoption of livestock insurance. | 77 | 22 | 1 | 88 | VIII |

*SA= strongly agree, A= Agree, DA= disagree*

**Pearson's Correlation Analysis with Adoption**

The Pearson's coefficient of correlation was also worked out to study out the relationship between independent variables with adoption behaviour of livestock insurance (Table 4). A perusal of result reveals that education status was correlated with the adoption of livestock insurance. Higher education status by the farmers helps him to gain more information about insurance and drive them to take certain action to adopt the risk mitigation measures in dairy sector. The study has find out that adoption has significant correlation with the variables like experience of livestock rearing, information source and constraints showed positive correlation with the adoption of livestock insurance. The reason is credited to each variable that played a role in the adoption of livestock insurance. Khan *et al.* (2013) also concluded the similar finding that the adoption of cattle/buffalo insurance is correlated with increased exposure to mass media

exposures land holding size and dairy farming experience while higher education is negatively correlated with the adoption of livestock insurance.

**Table 4:** Relationship between extent of adoption and independent variables (n=100)

| S. No. | Variables | 'r' value |
|---|---|---|
| 1 | Age | 0.03 |
| 2 | Family size | 0.119 |
| 3 | Education | 0.185* |
| 4 | Experience of livestock rearing | 0.808* |
| 5 | Land holding | 0.008 |
| 6 | Herd size | 0.025* |
| 7 | Milk production | 0.048 |
| 8 | Milk consumption | 0.057 |
| 9 | Milk sale | 0.069 |
| 10 | Total income | 0.11 |
| 11 | Information source | 0.166** |
| 12 | Constraints | 0.027** |

**Significant at 0.05 level of probability; ** Significant at 0.01 level of probability*

## Conclusion

India is an agrarian country and livestock farming is an important sector of national economy, especially rural economy. Livestock in India are raised as part of mixed farming systems. Usually, the livestock economy is a source of self-insurance for farmers as it provides a diversified source of income and mitigates the uncertainties of seasonal income from agriculture. But in the event of any disease outbreak the livestock owners suffer as a result of which livestock insurance played a key role in rural upliftment. The study reflects that adoption of livestock insurance among livestock owners is mainly effected by motivation by friends & community members followed by high probability of disease occurrence in particular area, effective risk assessment and previous experience of livestock owners. It was also concluded that the insurance institution should take measure like developing infrastructure, to reduce the premium and appoint proper individual to guide the farmers for the insurance. It is also required that government should intensify its efforts to encourage the people by providing premium on subsidized rate, by higher advertisement of insurance and by taking measure to remove the existing malpractices in the field of insurance.

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