Application of Mathematical Programming Methods to provide Nutritious Ration for Broilers and Hens during Oviparous

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Abstract

Minimizing production costs for a certain amount of product is one of the main concerns for managers of agricultural and animal husbandry units. Much of the cost of a unit of livestock (almost 75%) is related to methods of nutrition and ration. Accordingly, using some methods to reduce costs, including methods of mathematical programming, is required. The Linear programming model was used as the study framework. The almost optimal model was used to cause a variety of options to ensure the price ceiling has been applied. The fuzzy linear model was used to find the best combination of foods with minimal cost for broilers and hens during oviparous in the growth period (11 to 24 days) and (7 to 12 weeks). The study conducted in 1389. The results showed that prepared ration for oviparous is cheaper than ration of broilers. Furthermore, the fuzzy linear model, in comparison with linear programming, reduced costs for producing broilers and oviparous. Reduction in the costs increased the ration flexibility by 0.6 and 0.7 percent for broilers and oviparous, respectively. However, cost reduction in this period of growth was not found remarkable and fuzzy model in comparison with MGA and LP presented little advantage. Ultimately, the study suggests that the simultaneous collaboration of experts in nutrition and experts in planning leads to economic ration.

Keywords: Linear programming, Uncertain situation, Flexibility, Risk, FLP, NOLP, MGA

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An Investigation of economic and ecological aspects of the agricultural cooperatives: A case study of Markazi Province of Iran

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Abstract

The purpose of this study was to investigate economic impacts (including production costs, mechanization growth, changes in productivity per area, changes in the size of the cultivated area and productivity of production inputs) and ecological impacts (including protecting the environment from degradation and soil erosion as well as sustainable use of chemical fertilizers) of rural agricultural cooperatives on their members and their working environment. The study was conducted in the Markazi Province. The method of the study was Expost facto survey, using a questionnaire with 78 validity. The questionnaire aimed at understanding processes of producing agricultural products by members of the agricultural collectives in the two terms (e.g. before establishing the agricultural collectives and after establishing the agricultural collectives). The results of study showed, that the cooperatives have increased the level of mechanizations (including land plowing and ready for sowing 5/89, cultivating 0.77, crop management 1.8 and complemented equipments 4.63 hectare), the area of planting and the members' crop yields (especially watery wheat 0.6, cheeky wheat 0.97, watery Barley 0.18, dry Bean's 0.37 and provender 1.6 ton per hectare).However, the cooperatives weren't effective to increase land use and water productivity as well as to decrease of soil erodiblity. Average application of urea fertilizer in irrigated Wheat, Barley, Potato, Colza and Sugerbeet was less than the standard recommended by laboratory, however for dry Beans were up to two times more. Average applications of phosphate fertilizer were 2, 3.5, 2, 1.3 more than the standard recommended by laboratory for irrigated wheat, potato and dry bean's, respectively. Average application of Potassium fertilizer in :irrigated wheat, Barley, Potato, dry Bean's, Colza and sugar-beet was respectively less than (0.25,0.13,0.5,0.1,0.13and0.2) of the standards. The average application of pecides was less than the standard recommended by the laboratory. Therefore the rural production cooperatives' were successful in increasing of member's crop yields and income, however they didn't have effective roles in improving the environmental sustainability. Consequently, the study show an immediate need in the sustainability as well as marketing training programs for the members of the study agricultural cooperatives.

Keywords: Production cooperatives, Production resources, Use, Skill training

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An Estimation of the Recreational Value and Determination of Effective Factors on Visitors Willingness to Pay for Ghourigol Wetland

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Abstract

Ghourighol international Wetland which is located at Bostan-Abad conuty in East Azerbaijan province is known as one of the important tourism and promenade zone of Iran due to its special natural gravities. Therefore, studying tourism value of this place could express the importance of its protection, predicting needs, removing scarcities and the development of tourism. The aim of this research is to estimate recreational value of Goorigoal wetland using contingent valuation method. To determine affecting factors on visitors' willingness to pay, a logit model was estimated using maximum likelihood approach. Required data was obtained through questionnaires and interviewing with 390 individuals who had visited the wetland in 2008 year. Results indicated that 81 percents of visitors were ready to pay to visit the wetland. Also, visitors' information about Ghourighol Wetland was in a low level and they mostly were dissatisfied from bad condition of bathrooms, lounge, stores, restaurant, parking lot, transportation service and environmental pollution in the area. Furthermore, results revealed that factors such as education, family's revenue, information level about this wetland and the time spent in the area had positive and significant effect on the probability of willingness to pay of the visitors, while variables include individual's age, bid and distance to this wetland had negative and significant effect. The mean value of WTP for the recreational annual value of the Ghourighol wetland is 7430 Rls and the estimated total recreational annual value of the wetland was 743millon RLs. To increase the number of tourists and consequently increase the revenue of tourism in this region, solving the place's problems, extending people's information and awareness about such recreational and environmental potentials are offered.

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Price Volatility Spillover Effects in Beef Market of *Tehran* Province

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Abstract

The price volatility spillover effect indicates that price volatility in different markets can be mutually affected. The objective of the study is to analyze volatility price spillover effects on the vertical levels including input, wholesale and retail sale levels in the Tehran beef supply chain. The multivariate generalized autoregressive conditional heteroskedastic (MVGARCH) model was used by monthly price series over the period between the first month 1376 and the first month 1378. The results show that there are strong volatility spillover effects from both the feed inputs and the beef retail markets on the wholesale live cattle (producer) market. The estimated magnitude of the volatility spillover coefficients indicate that the volatility of live cattle prices is more sensitive to volatility changes in the beef retail prices than to volatility changes in the input prices.

Keywords: Spillover Effect, Price Volatility, Beef Supply Chain, MVGARCH Model

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Analysis of the Effects of Increasing Prices of Energy Carriers on Productions of the Agricultural Sector of Iran, Using Input – Output Approach

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Abstract

Energy is one of major factors of productions in all of economic sectors, which have important effect on a country economy. The effect of increasing price of energy carriers on productions of economic sectors is inevitable. Therefore, this research was conducted by using the input - output model and product forecasting. The study investigated the latest available Input - Output table in 1385. The results showed that direct and indirect effects of increasing prices of energy carriers on productions are not similar for different sectors. For instance, in the agricultural sector, production value of agronomy and horticulture subsectors decreased to 8.07 percent, while the production value increased to 2.85, 0.39 and 0.06 percent in forestry, livestock and fishing subsectors, respectively.

Keywords: Increasing price, Eergy carries, Production, Input - output table, Agriculture

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A Consideration of Mutual Expectations for PPP to Remove Production & Investment Bottlenecks
Case Study: Agricultural Sector of North Khorasan

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Abstract

This study is intended to investigate the level of public-private cooperation in the process of agricultural development from the view point of potential investors and producers. To achieve this objective we used an adjusted Jensen model as a conceptual framework for cooperation. In this process mutual responsibilities is provided to reveal different dimensions of strategic cooperation between public-private institutions for the purpose of removing production and investment bottlenecks. Moreover, a questionnaire was distributed among population of managers and key staffs of firms with 10-50 labor force in agricultural sector of North Khorasan province in the cities of Bojnourd, Shirvan and Esfarayen. Results indicate that weak mutual commitment and cooperation between public-private institutions lead over expectations of private sector from the government institutions in all key strategic elements associated with removing production and investment bottlenecks and the operational plans. Furthermore over expectations from the government was strong for providing investment strategic services, compared with providing production strategic services

Keywords: Strategic cooperation, Operational plans, Good governance, Socio-economic bottlenecks, Adjusted Jensen model

JEL: E23, E22, H11, L33

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Extension of Basic Preparation Pattern to Control against Frost
(Homaijan Region, Sepiedan City, Fars Province)

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Abstract

In the recent decade, to ajust the process of agricultural products to ongoing changes, farmers need to structure their plans. The structured plans emphasized mainly on the importance of wise decision-making of farmers. Climate change is one of the most important changes. To define effective strategies to deal with these changes, recognition of decision-making behaviors of farmers about producing agricultural products as well as identification of obstacles and affecting factors are required. Frost is an issue associated with climate change that damaged a huge area of the gardens of Fars province and Sepiedan in the recent years. Due to a sudden decrease in temperature in the growing season, the sensitive organs of a plant were injured and damaged. Thus far, this phenomenon has caused a lot of damage to garden products of Sepiedan city where is located in the Homaijan region. The city has a very cold weather and was known for having the highest rank of frost among the coldest cities of Fars province. This study used a qualitative method and exploratory case study to explore farmers 'decisions as well as factors that influence the defined decisions techniques of "archival research", "interview" and "focus group interview" were used to collect the study data. Validity of study was confirmed by expert professors. Results showed that farmers ' decisions under frost condition were affected by the five structural elements including "Demographic", "Cognitive", "Network and Group", "Awareness - Trainig - Learning" and " evaluation of the consequences of information and decisions". Ultimately, based on a Preparation Pattern, the study suggests some solutions to protect the study gardens against frost.

Keywords: Agricultural, Decision-making, Frost, Preparation pattern, Homaijan region of Fars province

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Estimating Aggregation Bias in AIDS Model for Meat Demand in Iran

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Abstract

While ignoring income distribution and estimating aggregate demand generally leads to aggregation bias and thus, does not reflect households' demand properly, yet aggregation bias is rarely considered in empirical demand studies and simply is ignored in most cases. The objective of the present study is to estimate aggregation bias in households' demand for various types of meats and to evaluate its effects on the magnitudes of price and income elasticities. Ultimately, AIDS demand function was estimated using time series data over the period 1984-2007. Results indicate that correcting the aggregation bias has considerable impacts on the estimated parameters especially on the elasticities.

Keywords: Aggregation bias, Demand; AIDS model, Meat

JEL classification: D1, D12, C51

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