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# Production Risk and Input Use: Impact of Subsidies and Crop Insurance

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## Abstract

**Abstract:** We study the impact of subsidies and crop insurance on the use of two types of inputs: risk decreasing and risk increasing. This research question is not new in agricultural economics. However, although theoretical predictions are established, the empirical evidence is not clear-cut. We argue that advances in experimental economics can give new insights on that issue. Our experimental approach allows dealing with three severe issues that face agricultural economists when using production data. First, the *separate identification of risk preferences and technologies* is possible in the lab since the experimenter controls for the parameters of the production function. Second, we overcome *simultaneity issues* such as the simultaneous choice of input use and crop insurance using a careful design of treatments in the lab. Third, we escape the *selection bias issue* by imposing mandatory insurance in some treatments as compared to others without insurance. We carry out 8 sessions where subjects choose the level of risk decreasing or risk increasing input to maximize profits under three types of treatments: benchmark, subsidy and actuarially fair crop insurance. We also elicit subjects' risk preferences using binary lottery choices. First results show that (i) risk averse subjects use more risk decreasing input than risk increasing input, (ii) that the subsidy has a positive impact on the use of both types of inputs, and (iii) that crop insurance appears to be a complement to the use of risk decreasing input and a substitute to the use of risk increasing input. A longer abstract is provided as an attached file.

**Keywords:** Production risk, Input use, Insurance, Policy design

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