PILOY BEANS IN GUATEMALA

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Black beans (*Phaseolus vulgaris*) are the main bean market class consumed in Guatemala. Due to their important role in the Guatemalan diet, most dry bean research has focused on black beans. However, black bean prices tend to be lower than the prices of other less consumed bean types. As a result, farmers looking for higher profits are increasing their production of common beans of other market classes (e.g., small red, white) and non-*P. vulgaris* (known locally as "piloy") bean species (*P. coccineus, P. dumosus*) that command higher prices than black beans. "Piloys", which are primarily grown in the highlands, are sold in both highland markets and in open air markets in Guatemala City. Just as dry bean research has focused on *Phaseolous spp.*, market research and reports available from the Guatemalan Ministry of Agriculture are organized around providing timely price monitoring data on black, small red and white beans. Market information on "piloys" is virtually non-existent, despite their importance to farmers and consumers in Guatemala's western and central highlands. This study, conducted in summer 2006, collected and analyzed data on "piloys" sold by vendors located where they are mainly traded.

Key informants in the Agriculture Science and Technology Institute (ICTA) and bean market experts in the Inter-American Institute for Cooperation on Agriculture (IICA) were contacted to determine the general characteristics of the "piloy" subsector. First, consumption is highly linked to the indigenous population, which is mainly located in the 10 departments of Guatemala's western and central highlands. Second, "piloys" are climbing beans interplanted with maize mainly in May-June and harvested in December-January. Third, "piloys" are sold by common bean traders, but not all common bean traders sell "piloys", and vice versa.

Data Collection. Due to the non-availability of a "piloy" vendor lists to carry out random sampling, population data (a proxy for consumers' use of open air markets) provided by the National Association of Municipalities of Guatemala (ANAM) was used to identify 2-3 of the largest cities in the 10 target departments. In each market, the researcher entered the open-air market and interviewed all sellers of both common beans and "piloys". While 15 vendors per department was established as the target sample size, an average of 11 vendors per department (questionnaires n=119) provided completed data.

Key Findings. 1) Characteristics of Piloy Beans. While in most of the west/central highlands, non-*P. vulgaris* beans are known as "piloys". However, in a few markets in the central highlands they are refereed to as "furunas". Grain size varies from medium-to-large and color ranges from solid black or solid red to red with black speckles or black with white speckles. Vendors reported that consumers prepare "piloys" in dishes for special occasions, in combination with pork and other local spices (e.g. ground roasted pumpkin seed). Most consumers eat "piloys" regularly--once a week to once a month. Consumers value qualities such as freshness, absence of broken beans, and sorting by color. Vendors' displays emphasized these characteristics by displaying the reddest or the blackest "piloy" in the biggest sizes--although vendors indicated that during low-production months (June-November) all sizes are sold consistently.

2) Market Trends. The relative price of common beans vs. "piloys" varied among markets. In some regions, "piloys" were more expensive, while in other regions they were sold at the same or a higher price than common beans. The seasonal availability of "piloys" is determined by the rainy season--beans planted in May are harvested from the 1st week of December to the last week of January. About 89% of the vendors interviewed offer "piloys" 10 months a year. However, as supplies decline from June-November, prices double--from a mean low of Q2.84/lb to a mean high of Q5.14/lb (US$1=Q7.9). While prices were relatively uniform among venders in a single municipality market, they varied greatly among departments. While vendors could not provide detailed information regarding why this was the case, average prices were typically highest in markets far away from the major production areas, due to the presence of more intermediaries. For example, the highest mean price (Q7.0/lb.) was observed in Chimaltenango Department. Buyers in Chimaltenango bought from wholesalers, who gathered and sorted "piloys" from scattered growers in the Solola Department. In contrast, the mean price of "piloys" in Solola was only Q2.37/lb.

3) Vendors' Supply Sources and Characteristics. Solola and Totonicapan Departments supply approximately 36% of the "piloys" traded in the highlands. Vendors' purchases of common and "piloy" beans are cash transactions. Supply transactions for "piloys" are mostly between retailers and growers (71%), who bring their supplies to the market early on the market day. However, "piloys" are also traded by wholesalers located in the open markets. In contrast, vendors mainly obtain common beans from intermediaries. On average, vendors purchased (cash only) "piloys" once a month and tended to store them less than 2 months--despite venders assertion that "piloys" can be stored for 5 month before grain quality deteriorates (i.e., corrugated seed coat). Vendors reported making on average profit 7% on "piloy" sales—which suggests at least 70% of farmers supplying directly to wholesalers receive the benefits of the fluctuating market prices. Since off-season "piloys" could be an alternative for farmers with irrigation, this markup over purchase prices are key for further analysis.

4) Socio-Economic Characteristics of Vendors. While common beans and "piloys" are primarily sold by vendors with a permanent booth in the municipal open market, they are also sold by street venders. Most venders were women (64%), with an average age of 38 years, compared to 44 years for men. Typically, the vendors had limited education. Among the sample, all of the vendors sold both beans and several other products (e.g., spices, other grains).

Research Implications. This study suggests opportunities for increasing the incomes of "piloy" vendors, wholesalers, and producers. First, the large difference in prices across departments during the on and off seasons suggests a profitable opportunity for small farmers with access to irrigation to produce "piloys" during the off season. Second, the disparity of prices across departments during the on and off seasons suggests an opportunity for wholesalers in low-price areas to distribute "piloys" to areas with higher prices and where a more constant supply may encourage higher consumption of "piloys". Finally, to date, no research has been conducted to identify and address farm level constraint to increasing the productivity of "piloys". Given the strong consumer demand and high price that these species command, ICTA should initiate a farm-level survey designed to assess/prioritize production constraints and consider the feasibility of developing a research/breeding program to address these constraints.