

# Noncommercial alcohol in China

*A case study from rural townships in Hubei Province*

## Executive summary

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## Context

While the amount of China's annual unrecorded alcohol production has yet to be assessed, it is known that a significant amount of production takes place in villages and towns by individual families or in small production facilities that supply local markets. Only a small amount of this unrecorded alcohol is truly noncommercial – that is, produced by a family for its own consumption and not sold. In some cases itinerant alcohol makers produce the family's supply of alcohol for a small fee, making it commercial. Alcohol from small production facilities that supply local markets is also commercial because it is sold either directly to customers or through merchants who connect the producer with the customer. None of these alcohols are reflected in national production data and are unrecorded as to amount and quality.

Undesirable effects from alcohol can be classified in two ways: they can result from the way people use the alcohol and behave in response to its physiological effects, and they can also result from the intentional or unintentional introduction of contaminants into the production process. Observations from the field work conducted as part of this project suggest that when bad outcomes occur from the production process, they are directly related to the degree to which the production is commercial. Family production, either by the family members or by an itinerant or local alcohol maker with

assistance from family members, creates minimal risk since all the alcohol produced is consumed by the people who make or helped make it. These small producers do not want to bring harm to themselves or their families. Relationships with the alcohol maker are personal and based on long-term associations and trust. However, risk in this type of production could result from ignorance. For example, the distillation process could introduce risk because of ignorance about the effects of metals in the pipes used. Similarly, long-term storage in ceramic or plastic/vinyl vessels could introduce risk. To the extent that this type of production follows long-established procedures and uses traditional equipment, the risk remains minimal; when traditional procedures are modified, greater risk is introduced.

Small-scale operations that sell alcohol to local customers introduce an increased level of risk. The producer is not known to the consumer so the close bond evident in family production is absent. However, in most small villages and towns the maker who sells his product locally is known by the consumers, and most sales are direct and do not include a middleman. Customers of these small-scale operations often mention trust and reference the quality of the alcohol purchased.

The small-scale operations that supply shops or involve a “middleman” add another element of risk. The intimate first-hand knowledge and trusting relationship between and consumer and supplier are absent. This allows the possibility for the maker and/or the seller to modify the product in an effort

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to enhance its attractiveness and potency or to “stretch” production through dilution – both in the interests of increased profits. To the extent that profit is an increasingly important motive in the production/selling process, the possibility of adulteration increases along with the potential risks. Separation, either social or geographic, also increases the possibility that the quality of the alcohol can be compromised.

## Description of the Study

### Study Site

Rural townships in Hubei Province.

### Methodology

Production and distribution methods were examined in 11 villages, with 259 villagers interviewed about their alcohol consumption.

Face-to-face interviews were conducted with four specific groups: alcohol makers (11), alcohol sellers (9), community key informants (21), and community members/alcohol consumers (218). Participants were interviewed individually (158) or in small groups (12 groups totaling 60 people). Each of these interviews was based on a set of questions unique to the group being interviewed, as well as on a common set of questions about noncommercial alcohol consumption. The sample was not randomly selected. The objective of this exploratory study was to assess the feasibility of describing and estimating the extent of noncommercial alcohol production and the role noncommercial alcohol plays in local communities.

A chemical analysis of samples of alcohol purchased from alcohol makers was also conducted.

## Findings

### Observation of the Alcohol Manufacturing Process

All noncommercial alcohols produced in this area are distilled spirits, which were typically made from rice, sorghum, or buckwheat.

Grain was typically soaked in water for approximately 24 hours, then heated by steam over boiling water in a kettle (pot

still) for an hour, or until it began to split. The heated grain was then spread out on the ground to cool. When it reached a certain temperature (still warm), the yeast (*qu*) was mixed into the grain. Some makers produced their own yeasts; others purchased theirs on the commercial market. To make 20 to 23 kg<sup>2</sup> of beverage alcohol, 50 kg of grain and 150 to 250 g of yeast are needed. The yeast-grain mixture is held for a period ranging from hours to as long as a day before it is shoveled into above-ground concrete boxes or into fermentation pits dug in the ground and lined with concrete. Depending on the type of yeast and the local temperature, the grain is held for seven to 15 days before distillation.

### Interviews with Alcohol Makers

The majority of alcohol makers interviewed for this project learned how to make alcohol from other family members or by some type of apprenticeship. All reported that only family members were involved in the production process. Annual production estimates ranged from 130 kg to 50 tons of beverage alcohol: 10 tons or less (five makers); 11 to 20 tons (three makers); more than 50 tons (two makers).

Alcohol produced from rice had an ABV (alcohol by volume) ranging from 47% to 60%, with the most popular in the 50% to 55% ABV range. Prices ranged from 3 to 10 renminbi (RMB), with the best-selling alcohols ranging from RMB 4 to 5 per jin (a jin is 10 liangs; a liang is 50 grams). Five makers produced alcohol from sorghum, with ABVs ranging from 50% to 53% and prices from RMB 3.5 to 6 per jin. Eight makers produced alcohol from buckwheat, with ABVs ranging from 48% to 55% and prices from RMB 6 to 12. Most buckwheat alcohol sold for RMB 8 to 10 per jin. Two makers produced alcohol with glutinous rice, with ABVs ranging from 32% to 50%; the lower ABV spirit sold for RMB 8 per jin, and the 50% ABV spirit cost RMB 3 to 4 per jin. One maker added Osmanthus (a common flowering tree in the area) to his product and charged RMB 5 for 30% ABV alcohol and RMB 6 for 50% ABV alcohol. The 50% ABV alcohol was the most popular.

2 It should be noted that noncommercial alcohol producers measure output by weight.

All makers reported that their customers were mostly middle-aged or older men. All of the alcohol makers sold their product directly from their production facility. Three relied on friends or small canteens to sell their product outside their production facility, three sold their product to restaurants and small supermarkets, and five took their products to surrounding villages and towns to sell.

### **Interviews with Alcohol Sellers**

Six of the 11 alcohol shops sold commercially produced beer and other commercial alcohols along with the noncommercial alcohol. The beer was typically ABV 3% to 4%, with prices ranging from RMB 1.5 to 10 for a 500 ml bottle. The commercial alcohol products sold tended to have ABVs lower than the noncommercial alcohols, with prices ranging from RMB 10 to 40. Two of the shops sold only noncommercial alcohol.

Only two of the sellers participating in the study knew how noncommercial alcohol was made, and only one of the sellers could describe anything about the process of fermentation and distillation. Sellers were essentially ignorant of the production process.

Five of the sellers said they determined the quality of the noncommercial alcohol by tasting and smelling it. Four said they did not know how to determine the quality themselves and based their description of their products on information they gleaned from their customers. All they knew about the alcohol content of their products was what they had been told by the alcohol maker.

### **Interviews with Community Key Informants**

There were 21 key informants interviewed for this study – namely, nine physicians, six teachers, and six resident committee members.

All but one of the physicians were aware of local production sites and locations where noncommercial alcohol was sold. Three of the six teachers could identify production or sales locations. All of the resident committee members knew about local sales

and production sites and appeared to know more about noncommercial alcohol than the physicians or teachers.

All three groups knew that production and consumption was largely a “farmer” activity and identified older (40 to 50 years old) male farmers as the principal users of noncommercial alcohol. They saw alcohol manufacturing as a normal community activity. All reported that noncommercial alcohol could be made from rice, sorghum, buckwheat, and, in some cases, glutinous rice, and they knew that the process involved fermentation and distillation.

There was no evidence of any negative feelings towards the makers of noncommercial alcohol that could be linked to negative values associated with the product or its consumption. There was a hint of suspicion towards the sellers of alcohol. Study participants recognized that sellers do not have the vested interest in maintaining the quality of their product that makers do; therefore, there is potential for them to modify the product (diluting it with water, for example) for personal gain. However, the general consensus was that noncommercial alcohol products were safe, and many of the informants believed them to be “more pure” than commercial products.

Key informants were asked if they had experienced any problems caused by alcohol in their community. Without exception, all doctors mentioned intoxication, and five of them mentioned fights and having to treat fight-related wounds. In addition, they commented on stomach and liver damage, and four mentioned gastric lavage, while five mentioned problems with fluid balances. All of the teachers interviewed described alcohol-related problems in terms of students. Three indicated that students should not drink. Others indicated that consumption of low-alcohol beer during holiday times and times of special celebration was appropriate.

None of the resident committee members identified any alcohol-related problems in their communities. One suggested that government departments could strengthen their management of noncommercial alcohol but did not provide any direct suggestions.

## Interviews with Villagers

- Of the 259 people interviewed, 207 (80%) classified themselves as drinkers. Alcohol appeared to be a regular part of their weekly diet. Drinkers typically drank once a day (29%) or two to three times per day (48%).
- Alcohol choices varied. Most of the drinkers in this sample drank more than one type of beverage. Among males, the alcohol of choice was noncommercial rice spirits (70%) and beer (57%). Among the females, it was beer (75%) and noncommercial rice spirits (37%).
- The 133 people (78% males and 83% females) who consumed noncommercial spirits also typically consumed small amounts (less than 4 liangs).
- With respect to drinking time, 22% reported drinking noncommercial alcohol with breakfast, 80% with lunch, and 99% with dinner).
- Males were more likely to drink alone than females (66% males; 18% females) and to drink with friends (51% males; 44% females). Females were much more likely to drink with other family members (59%) than were males (3%).
- The majority of people believed that 1 to 3 liangs is the appropriate amount to drink (59% males; 75.5% females);

however, a majority of the males (69.7%) said they had exceeded this amount by more than five times.

- The four most common reasons for drinking were: responding to or seeking a good mood (48%), dealing with a bad mood (32%), socializing with guests (29%), and dealing with tiredness (15%).

## Chemical analysis

Thirty-six samples were collected during interviews with makers and sellers of alcohol. These represented nine different manufacturers and nine different sellers. Alcohols were made from unhusked rice (61%), sorghum (11%), buckwheat (14%), glutinous rice (6%), and a combination of grains and other materials (8%).

Estimates of ABV from the makers and the sellers ranged from 45% to 55%. Prices ranged from RMB 3 to 10 per jin. There was no clear relationship between estimates of ABV and the makers' or the sellers' price, although that was often the reason given for the higher prices. ABV by lab analysis ranged from 38.7% to 56.2%, with a mean of 49.5% and a standard deviation (SD) of 3.36. The mean mg/L for methanol was 4.73, (SD 2.17), and for acetaldehyde 109.27 mg/L, (SD 76.56).

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