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Algeria: Animal Health, Policy, and Safety

**Lack of policy on milk production and imports in Algeria**

Algeria is located in Northern Africa bordering the Mediterranean Sea with a population of around 46.83 million people in 2024 (Zaimeche et al., 2024). Around 91 percent of the population lives on 12 percent of the country’s land near the Mediterranean coast (“Algeria,” 2017). As of 2023, over 75 percent of the population lived in an urban area (“Algeria,” 2024). Algeria is the largest country in Africa with a land mass of 2,381,740 square kilometers, which is equivalent to 919,595 square miles (“Central Intelligence Agency”, 2018). It is split into two main regions with the northern region containing most of the Atlas Mountains and the southern region containing the Sahara Desert (Zaimeche et al., 2024). Due to 80 percent of the land being a part of the desert region, Algeria is one of the most sparsely populated countries in the world with only around 38 people per square mile (“Algeria Population,” 2024). One problem that Algeria is facing is the lack of availability of milk and milk products. A lot of this is due to the lack of policy on Algeria's milk production and its imports.

Even with most of the country having desert terrain, they grow a variety of crops including wheat and potatoes. Algeria is one of the top importers of milk powder globally (Hales, 2022, p.2). As of 2020, the total agricultural land was 41 million hectares, which is equivalent to over 101 million acres (Galal, 2023). This means that only around 3 percent of the land is arable (“The World Bank,” 2010, p.1), and only 17.4 percent of the land is used for agriculture (“Central Intelligence Agency,” 2018). The majority of the exports in Algeria consist of mining petroleum and natural gas products (“Algeria,” 1998). “In Algeria, 70 percent of farmers own and operate small to middle-scaled farms of less than 10 hectares” (“BASF,” n.d.).

As of 2022, the average family size was just over 4 at 4.7 people (“Average Household Size”, n.d.) which has been declining for several years (“The World Bank,” 2010, p.1). Most Algerian people either work in public administration, agriculture, or transportation (Zaimeche et al., 2024). Despite this, as of 2009, only 14 percent worked in the agriculture sector (“The World Bank,” 2010, p.1). Around one-third of the working age is considered to be unemployed (Zaimeche et al., 2024). Public education is free and children are required to go to school for at least 10 years (Clark, 2006). They then have the option to pursue higher education. Public healthcare is also free and accessible, but quality varies throughout the country (“Health Insurance in Algeria”, n.d.).

Minority groups like the Berbers and the Amazigh (also a group derived from the Berbers) have a significant cultural influence and reside in the Northern regions of Africa (“Amazigh in Algeria," 2023). Today over 8 million Berbers are living in Algeria and many practice the Islamic faith ("Berbers – Algeria," 2021). They, like many in the country, are primarily farmers and rely on dairy for their milk consumption needs ("Berber, Menasser in Algeria profile," n.d.). According to Berber tradition, milk is a symbol of welcome and a sign of fertility and is often used in ceremonies including wedding ceremonies (Kraiem et al., 2013).

Algeria is one of the leading consumers and importers of dry milk powders in North Africa (Hales, 2022, p. 2). This is a problem as its annual production only meets about half of its needs. Algeria also does not domestically produce milk powder even though that is what most Algerian people are buying. “In 2022, the Minister of Agriculture, Abdelhafid Henni estimated local fluid milk production at 2.5 billion liters per year – equivalent to 2.5 million metric tons, while domestic market needs for fresh milk were estimated at 4.5 billion liters per year” (Hales, 2022, p. 2). It was also estimated that they imported almost 419,000 metric tons of total dry milk powder, whole milk powder, and nonfat dry milk (Hales, 2023, p. 2). This is a major problem for the government as well as for the farmers. The government is spending far more money on importing milk products when it could be focusing on creating and enforcing better policies on its milk production. Even with the large spending on milk imports, it is still unavailable in some Algerian shops (“Milk Self,” 2021). This draws attention to the major distribution problem that Algeria is also facing. With the increase in their urban population, the demand for milk has also increased (Taher Sraïri et al., 2013). More people are working in the cities than people are working to grow and harvest food.

By definition, powdered milk is milk that has been evaporated to about five percent moisture (“Merriam-Webster,” n.d.). Unlike liquid milk, powdered milk does not need to be refrigerated, which also gives it a longer shelf life. This is important because it allows Algerians to store their milk in various conditions without having to worry about it spoiling. “Local processors produce pasteurized fresh milk with a 24-hour shelf-life in one-liter plastic bags, in addition to the UHT tetra pack fresh milk” (Hales, 2022, p. 5). Powdered milk has the same shelf-life period after it has been reconstituted, which is powdered milk after water has been added back into it. Reconstituted milk in the one-liter bags is also set at a fixed price of 25 Algerian dinars (Hales, 2022, p. 4).

At local markets, milk is sold as either pasteurized reconstituted milk or ultra-high temperature (“UHT,” n.d.) milk which is milk that has been ultra-pasteurized through higher temperatures than usual (Hales, 2022, p. 4). UHT milk can be kept for a longer period if left unopened (Cornall, 2016). However, powdered milk continues to have a longer shelf life of up to around three times as long as liquid UHT milk does (“q8npr,” 2022). It also requires less energy which saves Algerians money as it does not need electricity for refrigeration during storage or transportation.

The land conditions have also played a role in the milk production problems. The average rainfall is very low, which makes it hard for farmers to feed nutrient-dense feeds. Lack of nutrition and good water greatly impact the quality and quantity of milk production (Taher Sraïri, 2013). While cows are not the only producers of milk in Algeria, they do produce around 73 percent of the annual production (Hales, 2022, p. 3). Sheep and goats also contribute, but due to the harsh conditions, they are mainly used for meat production (Taher Sraïri, 2013).

Land use has been long disputed between the Algerian government and the Berber tribes who are part of the Indigenous population of Northern Africa. As land is reallocated for conservation efforts and to continue improving agricultural developments, these Indigenous populations suffer ("Indigenous World 2023: Algeria," 2023). Their traditions and connections to the land are often not seen as important when weighed against new technologies thought to improve access to milk and other commodities produced in Algeria. Not only that, but the government is now providing land for industrial development in the Sahara regions, bringing in foreign investors who have limited knowledge of those living in more traditional roles (Hales, 2022, p. 3).

Milk is produced using both traditional and modern methods. This is mainly due to the smaller amount of milking cattle on each farm compared to other countries that use primarily modern milking practices. On the farm, the milk is stored in tanks to keep it cool. The size of the tank depends on the size of the farm and its production. These tanks cool and hold milk until it can be processed or picked up and taken to a processing plant. The milk processing industry is made up of two main processors, public and private (Hales, 2022, p. 4). Around 60% of the pasteurized reconstituted milk market is run by Giplait which is a state-owned company (Hales, 2023, p. 4). The other 40% is a combination of private sectors (Hales, 2023, p. 4). Private companies mainly contribute to the market by producing yogurt, cheese, butter, and other dairy products.

The packaging of milk products depends on the size of the farm, local distribution channels, and available resources within an area. The Algerian government wants consumers to have the cheapest prices possible, which is why milk is generally packaged in plastic pouches (Astley, 2013). According to Jurg Burri, the Algerian government also subsidizes the purchase of milk powder if the reconstituted final product is packaged within these plastic pouches (Astley, 2013). Packaging firms are also given a 50% discount on imported milk powder if they package their products in plastic pouches (Astley, 2013).

There are, however, some solutions that could help to improve this situation. Over the past few years, the government of Algeria has started programs to increase its domestic milk production (Hales, 2022, p. 2). Many of these programs include various incentives and subsidies to encourage farmers to expand their herd size and productivity. It has been estimated that these subsidies equal around $129 million throughout the production processes to support the production of fresh milk (Hales, 2023, p. 2). These subsidies are for everything within the line of production from breeders to processors as well as for veterinary coverage and vaccinations. Dairy cow breeders receive a subsidy of 60,000 Algerian dinars for every new dairy cow birth (Hales, 2022, p. 3). These subsidies are put into place to reduce the risk that farmers face within the industry by increasing their wealth and allowing them to produce more (Ali Houari, et al., 2023).

Agriculture dependency in all aspects of agriculture is a major problem throughout Algeria. The National Agricultural and Rural Development Program was created in 2002 which was an updated version of the National Agricultural Development Program to modernize agriculture in Algeria. These programs have helped to increase milk production as well as modernize farms (Kalim Qamar, 2013). The programs worked to expand irrigated areas and enhance agriculture production, which would increase the resources available to dairy farmers. The Ministry of Agriculture has urged small farmers to modernize their livestock structures and equipment to improve management and milk collection (Hales, 2018, p. 4). They have, however, found issues within these programs as only a few farmers are benefitting from them (Kalim Qamar, 2013). Expansion of materials explaining what the program is, how to access it, and how it can benefit even small farmers is necessary for it to continue to work.

Another program that was started in 2022 was also launched by the Ministry of Agriculture in Algeria. This program aims to restock dairy cows, decrease slaughtering, and encourage nurseries (Hales, 2022, p. 2). With the restock, they have estimated a need for 400,000 dairy cows to meet the milk demand (Hales, 2022, p. 2). This is an attempt to lower the country's dependence on milk powder. Dairy cows are slaughtered for a few reasons. Decreasing in production and reaching the end of their productive lifespan, is one reason why they would be slaughtered. Being unsuitable for breeding or not having any desirable genetic qualities, is another reason why farmers may slaughter a cow. A final reason in Algeria is to help manage their herd sizes when resources begin to dwindle. Being majorly in the Sahara, drought is a major factor in limiting their resources and can result in the need to reduce herd sizes. If the government can help farmers with costs so they can maintain their herd size even with trying conditions, they may see a decrease in the number of cows slaughtered.

The Ministry of Agriculture has been working towards programs to replenish herd numbers to increase the production of fresh milk. “In addition to importing dairy cows and pregnant heifers, the ministry intends to further develop dairy farming by encouraging heifer nurseries'' (Hales, 2022, p. 4). Nurseries are facilities designed specifically for raising calves and heifers. These facilities care for heifers with the goal of these heifers turning into replacement heifers on farms. Heifer imports restarted in 2022 by the Ministry of Agriculture.

An additional factor impacting dairy farmers in Algeria is the government opening of markets to foreign investors including the United States (Hales, 2022, p. 2). A plan put out by the USDA in 2022 shows that the government wants to partner with the United States to import semen to do artificial insemination on dairy herds to improve overall quality and pounds of milk produced (Hales, 2022, p. 4). In fact, the government has started to invite the United States and other foreign investors to take part in their countries “Food and Agribusiness Show” to expose the population to these developing technologies (Hales, 2022, p. 4).

One of the barriers the government faces is a lack of trust from the agricultural sector. Farmers are traditionalists and want to continue to remain in control of their farming operations with limited programming from governmental agencies. New technology can appear overwhelming and when it is seen as part of a showcase event instead of in practice on farms, it has less of an impact. To help break down these barriers, the government should consider taking the technology and investors who bring it to the country out onto the farms in Algeria. They could meet farmers on their farms and explain how these new practices could fit into the situations and facilities unique to the farm. For example, when showcasing artificial insemination practices, farmers want to know that these techniques work even when they do not have an ideal working chute or handling facility. By showing farmers these things in their own space, investors and government agencies will do a lot to promote trust and acceptance of the new technology.

Farmers need to be educated on better practices for caring for their animals and their genetic makeup. Being able to understand what the different behaviors of their animals mean and what needs are not being met to care for the well-being of the animal is critical in milk production. Learning the different behaviors will also help with determining the health and reproductive cycles of the animals to improve their breeding practices. Learning to use artificial insemination and different techniques with it will improve the genetics on each farm as farmers would be able to breed their cows to better quality bulls which will promote the increase in milk production.

Many of these programs cost a lot of money for the government, a challenge with resources already stretched thin, and they do not cover the full scope of issues happening in the industry. They do not address the lack of identification of the animals on each farm. Farmers need to be educated on the importance of keeping records of each animal. Educating farmers on different farm management techniques and practices would be able to help improve their lack of identification. Being taught different strategies for keeping records of their cattle’s milk production and records will improve their herd quality. Paper records can make it difficult for farmers to track the size and scope of data needed to make dramatic improvements in their overall production. With paper records, it is not always possible to access the records, and they are at risk of being lost or having errors. By implementing new and modern technological practices, these problems would be limited. They would also help farmers to better see what herd management practices they should implement in their herd. Whether that is to cull a certain cow based on their recent productions or what bull they should breed the cow to. Simple computer programs including Microsoft Excel can make it easy for farmers to manage data all in one place. Even a basic Word document on the computer can include tables, where data can be sorted and color-coded for faster readability.

The lack of milk production and import policy in Algeria is a problem that does have solutions. Promoting current programs and continuing to prioritize improving their dairy domestic production is a major key. But the part that will add immediate value and long-term results is adding an educational component for farmers. Educational programming will provide farmers with the resources, knowledge, practical skills, and the ability to improve their farming practices and improve their herd health. The educational programming will also bring awareness to modern technologies and health practices. Improved herd health and modernization will in turn increase the volume of raw milk. “With higher fluid milk production, the GoA aims to reduce milk powder imports, which, according to the MoA official, hit around 500,000 metric tons (MT) per year representing about $1.2 billion” (Hales, 2022, p. 4). By encouraging more domestic production of fresh milk, a larger portion of that 1.2 billion dollars will stay within the Algerian economy and continue to support education and production incentives for farmers (Hales, 2022, p. 4).

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