

**Voluntary Report** – Voluntary - Public Distribution

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**Report Name:** Taiwan Forage Market Overview

**Country:** Taiwan

**Post:** Taipei

**Report Category:** Agricultural Situation, Grain and Feed

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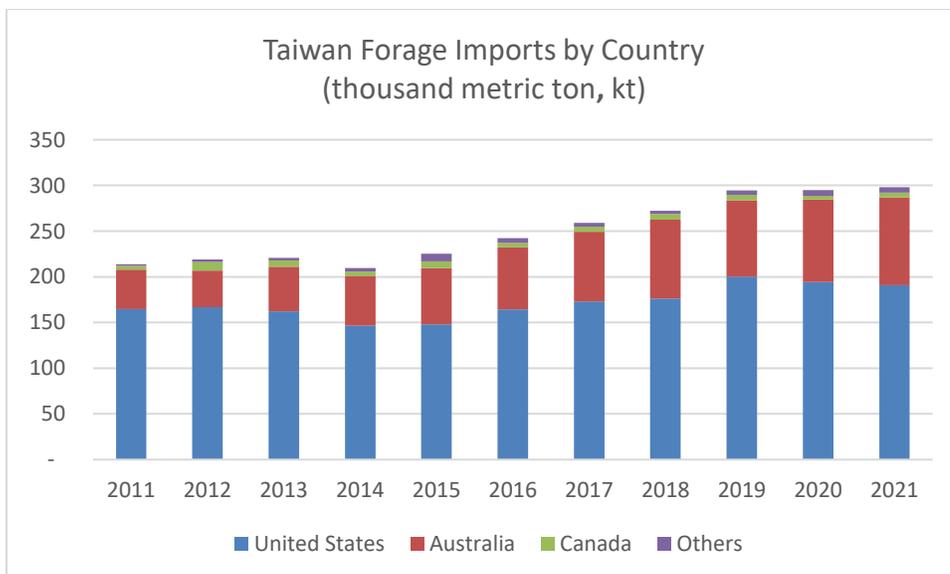
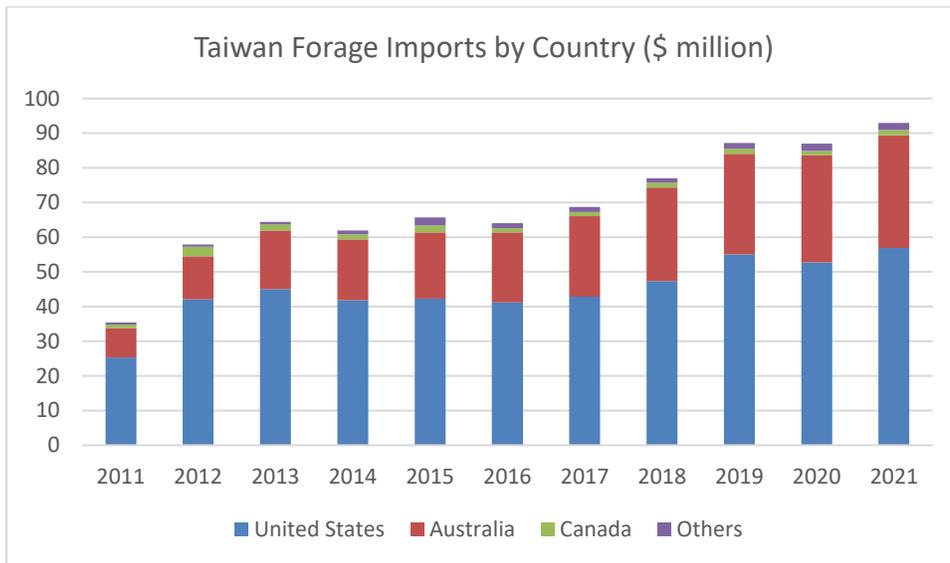
**Report Highlights:**

In 2021, Taiwan production of forage crops accounted for 45 percent of demand. Taiwan imports approximately 300,000 tons of forage products annually to supplement domestic production, which is constrained by limited farmland and suitable climate conditions. The United States is the leading supplier of forage products and accounted for approximately 64 percent of imports in 2021. Taiwan demand for imported forage products is forecast to remain stable.

## Market Overview

- In 2021, Taiwan’s imports of forage products totaled \$93 million.
- Taiwan’s imports from the United States were valued at \$57 million in 2021, up 8 percent from the previous year. In terms of volume, Taiwan imported 190,670 metric tons (mt) from the United States, down 2 percent from 2020. United States accounted for 64 percent of the total forage Taiwan imported.
- Taiwan’s livestock sector relies on imported forage to supplement domestic production. In 2021, Taiwan had a total of 125,870 dairy cows and 34,342 beef cattle, which would require close to 470,000 metric tons of forage feed annually (94% of demand).

Table 1&2: Taiwan Forage Imports by value and volume



Source: Taiwan Customs, Trade Data Monitor, LLC

## **Forage Production**

Taiwan's Council of Agriculture (COA) statistics count domestic forage crop production in three different categories Pangola grass, Napier grass and others including silage corn and Nile grass. Taiwan's climate is more suitable for warm season grasses than cool season grasses and legumes like Alfalfa.

Because of Taiwan's rainy/typhoon season during summer, it is more challenging to harvest forage grasses during this period as drier conditions are required. As such there is a seasonal demand for imports to supplement domestic crops.

Warm season grasses however are harder to grow in the winter month. Forage corn can be grown in March or September but is primarily a second crop which would be harvested and made available in Spring to be used fresh or as silage. Silage corn is a valuable feed ingredient for cattle and sheep due to its fermented properties.

There was a big push to grow more forages crops in fallowed land in 2013 when there was a global shortage in hay available for exports. Taiwan's Livestock Research Institute (LRI) had been heavily involved in developing better substitute crops to suit Taiwan's growing condition. However, production expansion has been stagnant in recent years.

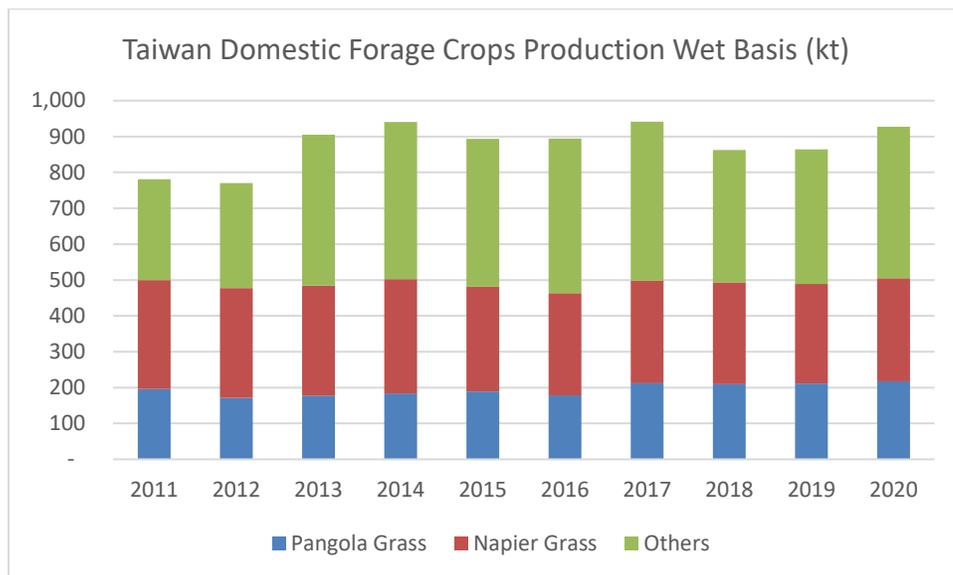
The rise in global commodity prices this year have renewed similar efforts. During this year's COA conference on Food Security, there are again discussions on further expansion of forage crops on fallowed lands. An expansion of 18,000 hectares of land would reduce Taiwan's self-sufficiency on forage crops from 45% to 80%. However, whether the effort would be successful this time remains to be seen, as both crops for feed or forage needed to compete on Taiwan's limited farmland.

## **Other domestic feed ingredients for forage**

COA has made a renewed push for utilizing domestically available production and by-products to supplement imported feed ingredients including making silage from off-spec sweet potato to be used in the ration. Taiwan sweet potato production is around 240,000 mt per year of which about 60,000 mt are off-spec products (currently about 20,000 mt can be utilized.) More information can be found in COA's announcement news article in [Chinese](#).

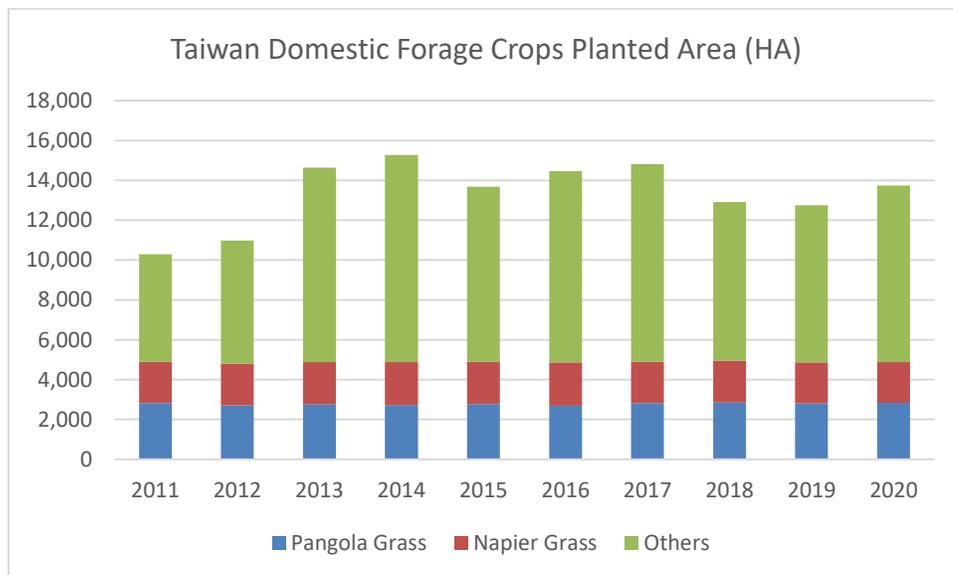
Other domestic by-products that could be utilized include soybean hulls, tofu dregs, beer dregs, sorghum dregs, brans and corn starch residues but some ingredients' supply may be seasonal (for example beer dregs will depend on beer demand which is stronger in summer months.)

Table 3: Taiwan Domestic Forage Crops Production



Source: COA

Table 4: Taiwan Domestic Forage Crops Planted Area



Source: COA

## Demand for forage products

According to COA, feed is about 40-75% of the cost for herbivore production (cattle, goat and deer), in which forage cost accounts for 35-50%. Taiwan imported hay and other forage crops including in pellet form have grown close to 300,000 metric tons per year, which is about 55% of demand.

The main use of hay in Taiwan is in the dairy sector. Dairy feed rations consist of forage and concentrate. Forage mainly provides fiber which is one-third of the feed cost, the other two-third includes concentrates that provide starch, minerals, proteins and other nutrients from grains.

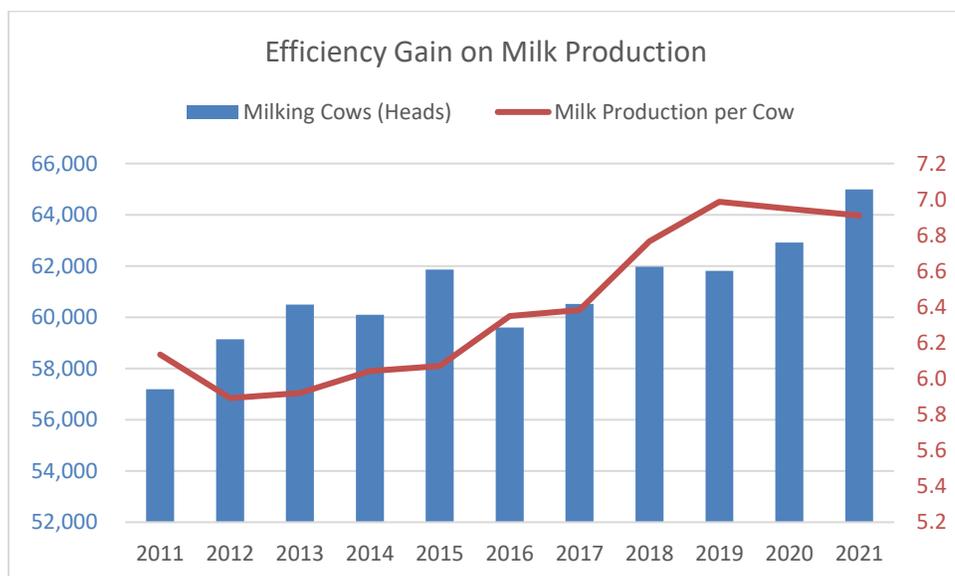
To lessen the impact of increases in feed ingredient cost, COA is trying to promote adding domestic by-products mentioned above into one-third of a ration to substitute energy and protein needs which normally are provided from corn.

As efforts for milk efficiency gains continue and with limited expansion on dairy herds, high nutritional value imports of alfalfa and oats are expected to be sustained.

Compared to dairy cows, Taiwan's dairy has a much smaller dairy goat sector. Due to consumption preference changes, dairy goat milk production declined 28% from 16,995 to 12,296 metric tons in 2021.

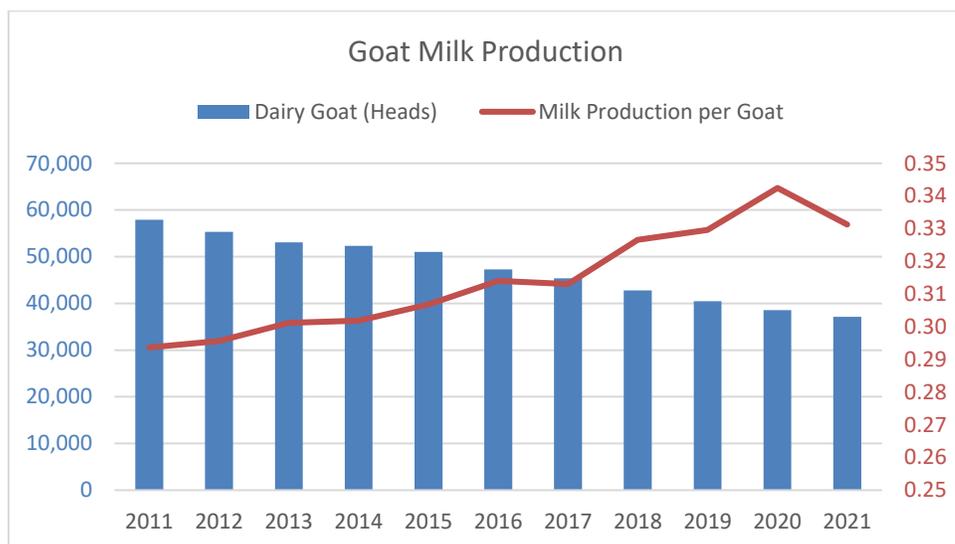
For further information on dairy demand, please see [Taiwan Dairy and Products Annual](#).

Table 5: Milk production efficiency



Source: COA

Table 6: Decline in dairy goat heads

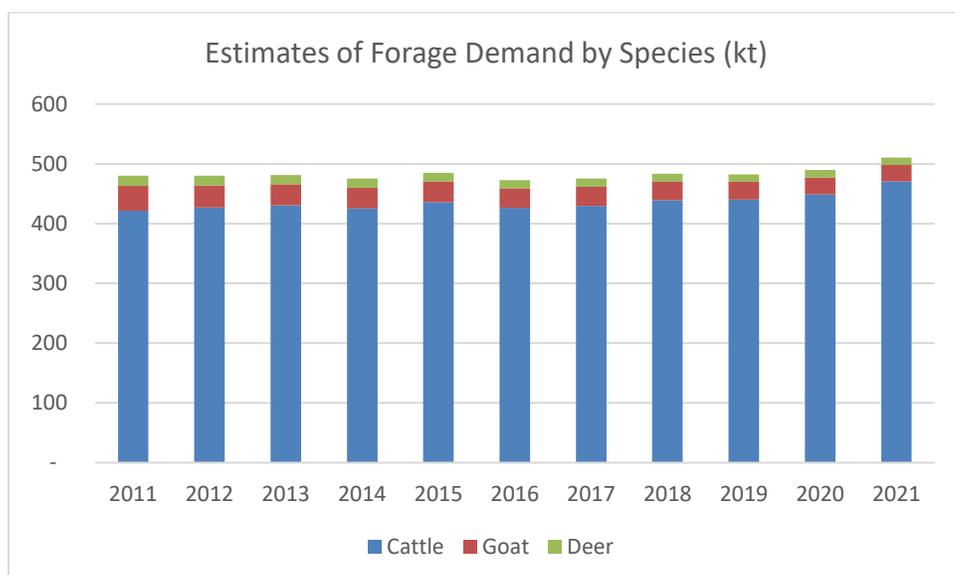


Source: COA

At the end of 2021, Taiwan cattle on farms are 161,138 head including 125,870 head of dairy cattle. Taiwan’s goat population are 125,914 head with 37,118 for dairy. Deer, horse and rabbit population is even smaller at 16,621, 1,381 and 4,999 respectively.

Using one TLRI estimation, daily forage demand for cattle, goat and deer are 8 kg, 0.6 kg and 2 kg respectively. Forage demand has been slightly expanded as the growth in cattle demand make up the lost demand from goats.

Table 7: Forage demand has been slightly trended up



Source: Animal statistics from COA

## Forage product imports

Taiwan's main forage grass imports are mainly Bermuda grass, oat hay and alfalfa. Of which, oat hay including the sweet oat variety, mainly comes from Australia while the US is the main supplier of alfalfa, oat and grasses. The sweet oat hay variety preferred in terms of palatability as the stalk would be sweet. Other export hay varieties including timothy, Sudangrass, Kleingrass and ryegrass have been less utilized in Taiwan.

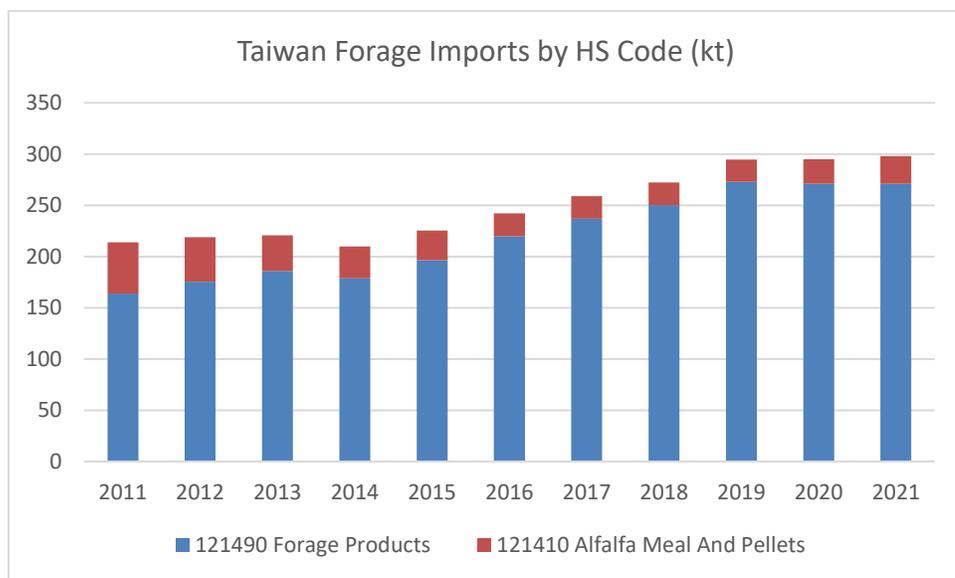
Containerized shipping is the main mode of transportation for forage products to Taiwan. High nutritional value of alfalfa and oat hay make both harder to be substituted with domestic alternatives especially for lactating cows.

Taiwan Customs recorded forage related imports to include Lucerne (Alfalfa) meal and pellets" (1214100008) while general forages crops are under "Vegetable materials for forage, n.e.s." (12149000902), different hays are not currently separated by codes. Only a tiny volume from Australia is under "Lupines" (12149000109).

Alfalfa hay can usually obtain a premium over alfalfa meal and pellets as the alfalfa quality is more observable in hay form. Alfalfa pellets may be easier to utilize for feed but may include lower graded Alfalfa or other hay.

Despite there being no breakdown of imports within 121490. Market sources estimated out of 270,000 mt imports per year, 120,000 mt is Bermuda grass, 90,000 mt is Alfalfa hay and 60,000 mt Oat hay.

Table 8: Taiwan Forage Imports by HS Code



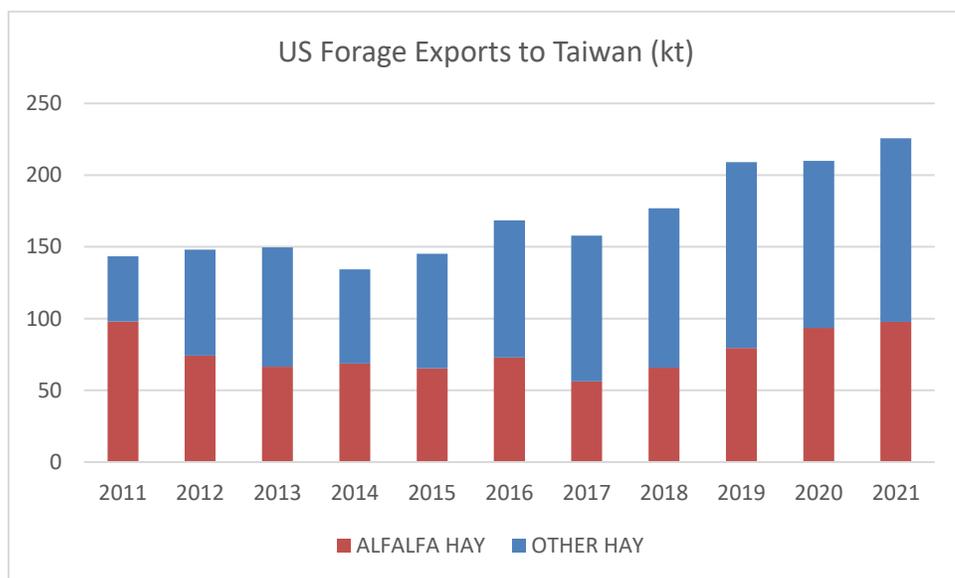
Source: Taiwan Customs, Trade Data Monitor, LLC

## US exports

US share of imports has declined from 77% in 2011 to 64% in 2021, while Australia has gained from 20% to 32% within the same period. Declining US supply/production and higher prices partly due to drought and other climate factors may be one of the reasons for the drop in US market share. Market sources reported buyers would switch to Australian sweet oats when price gaps between US Bermuda grass narrowed enough. Taiwan's dairy sector also has to compete with China, Japan and South Korea for export hay supply.

US export statistics separate out alfalfa hay (1214900010) with other hay (1214900015). Annual exports value is \$72 mil in 2021, while Taiwan is 5<sup>th</sup> largest market for US hay exports. Limited alfalfa supply is likely the reason where import shares are stagnant.

Table 9: US Forage Exports to Taiwan



Source: GATS

## **Future demand prospect for imported forage products**

Imports of hay, especially for alfalfa and oats, should remain an important part of Taiwan's forage supply. Due to COA's priorities to encourage domestic production in grains and oilseeds on limited farmland, it is difficult to also expect significant expansion of forage crops. Indeed, imports have risen as domestic forage production, although growing, was unable to keep up with demand. Domestic production has grown 19% from 2011-2020, while imports has grown 39% from 2011-2021.

For dairy demand, Taiwan is a mature market with stable to declining population, though dairy consumption will likely trend upward. One item to note is the potential impact of imported liquid milk competition from New Zealand. The Taiwan-New Zealand FTA (ANZTEC) was signed in 2013. Starting in 2025, New Zealand's liquid milk can be imported without quota restriction potentially increasing competition with domestically produced milk. Imports from other origins will still face tariff rate quota (TRQ) and special safeguard (SSG) measure if volume exceeds a pre-set limit. Even so, the drive for efficiency improvement in the domestic dairy sector will likely sustain imports of higher value forage products.

## **Quarantine requirements for imported forage products**

Currently, there are two specific requirements on imported forage products of note:

1. The exporting country (zone) shall be recognized as free from foot and mouth disease and African swine fever.
2. The straw and forage for animal feed for importation shall not contain visible contaminants of feces, blood scab or others which poses risk of disease transmission.

For more information, please see Bureau of Animal and Plant Health Inspection and Quarantine's [page](#).

**Attachments:**

No Attachments.