

Conor Bebis
AGR* 2150
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Nepalese Cowpea

Amount Per 100 grams ▾	
Calories 116	
% Daily Value*	
Total Fat 0.5 g	0%
Saturated fat 0.1 g	0%
Polyunsaturated fat 0.2 g	
Monounsaturated fat 0 g	
Cholesterol 0 mg	0%
Sodium 4 mg	0%
Potassium 278 mg	7%
Total Carbohydrate 21 g	7%
Dietary fiber 6 g	24%
Sugar 3.3 g	
Protein 8 g	16%
Vitamin A 0%	Vitamin C 0%
Calcium 2%	Iron 13%
Vitamin D 0%	Vitamin B-6 5%
Vitamin B-12 0%	Magnesium 13%

*Per cent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Vigna unguiculata, or more commonly known as cowpea or black-eyed pea is a legume crop, and is believed to have been domesticated in West Africa. It is a crop that grows well on hilly farmland which is very beneficial for Nepalese farms due to the large amount of hillside farms [5].

Benefit to Nepal:

A common problem for farmers in developing countries is soil erosion, this is especially true for Nepal as it is a very mountainous country with more than 80% of its land being on mountains [5]. Cowpea is well known as being a cover crop, and is able to protect soil from many types of erosion [3]. By using cowpea as a cover crop farmers are able to significantly reduce the amount of weeds in their fields, therefore increasing yields and reducing labour [3]. As weeding is often

the job of women and children, removing this task allows for a more productive use of their time. Additionally, cowpea is a legume meaning that it fixes nitrogen in the soil [4]. Many farmers in developing countries struggle with poor soil, and low yields as a result of bad soil conditions. Cowpea is used today as a rotation crop by Nepalese farmers to improve soil quality. Another benefit to Nepalese farmers in growing cowpea is that they do not need to fear low yields from drought as cowpea is highly drought tolerant [6]. Nepalese farmers would be able to use cowpea as an intercrop, due to ability to fix nitrogen as already noted, and the observation that cowpea has moderate shade tolerance making it a good companion crop. In addition cowpea attracts certain insects that are beneficial to farmers, making it even more of a great potential companion crop to be used [6]. Lastly, cowpea is a very good green manure, and can be used as a to further improve the quality of the soil[4]. The high protein content (18-35%) and high carbohydrate content (50-65%) can be very beneficial to families as a relatively cheap source of human energy [1].

However there are some difficulties when it comes to growing cowpea. One issue often experienced by poor farmers is when it comes to storing or shipping their produce. This is because they may not have proper storage or transportation methods and therefore leave their produce susceptible to insect infestation [7]. This concern can be alleviated by a product called Purdue Improved Crop Storage, which is an inexpensive storage bag made from plastic and is used to store cowpea and other crops. The Purdue website states that “If 50% of cowpea grain at the farm level were put into airtight storage (PICS bags are one type), overall annual income in the region would increase by \$255 million.” [8]. This means that farmers would be able to store some of their crop for use later in the year, meaning they would not have to sell it all and could

further benefit from this business by either selling more of the crop, sell at a later time when commodity prices are higher or having more food for themselves.

Export Potential:

There is a lot of great export potential for cowpea both as a raw and modified product. In terms of exporting the raw product there is great potential for sale to the general Canadian population through grocery stores. Cowpea or as it is commonly referred to in Canada, “black-eyed pea” is already a fairly well known food. It has been hailed by ‘Livestrong’ as being an amazing food for a healthy lifestyle. Combining this prior knowledge of the products benefits with a marketing campaign aimed at showing the value of importing the product from Nepalese farmers could cause a great amount of sales. An example of a marketing technique for this may be a ‘Fair trade’ sticker in which customers are assured that the farmer who is growing the cowpea is being paid fairly, as well or alternatively including some sort of organic label that assures consumers of the organic methods of farming that were used to grow the product. By using this type of marketing there is great potential for the sale of cowpea in major Canadian grocery stores, as well as in organic food stores.

Another amazing export potential would be to export cowpea to companies such as Fit Foods who produce nutrition enhancement products. The reasoning for this is that cowpea has the ability to be processed into a protein isolate, by which scientists isolate the protein content of cowpea and create a concentrated protein by product of cowpea [1]. This could then be used and sold as a nutritional supplement via pill or powder form. With the fitness craze in Canada there is great potential for protein nutritional supplements. This protein isolate can also come in the form

of flour which could also be sold as a nutritional supplement and alternative to common flour [2].

Critical Analysis:

As with many other plants, cowpea is susceptible to many natural hazards. These include insect infestation, disease, extreme drought, poor growing conditions, and seasonal restrictions. Creating a steady and consistent yield would likely be the most difficult part for the Nepalese farmers. With all of the potential for yield loss there would have to be many measures taken to ensure a healthy a high quantity crop. Farmers would have to go beyond their normal routine of farming and use better tools as well as more precaution when farming. They may need to make investments in more land or more advanced systems of farming in order to make the business viable, however with hard work and maybe the help of investors or donations this is a reasonable goal. Getting into this business may not be reasonable however for small scale farmers, it may only be feasible for farmers who are already growing a moderate amount of crops.

Among the natural hazards mentioned earlier arguably the most common and harmful is the ability for insect infestation. Every year, up to 50 percent of cowpeas in Africa are lost after harvest because of infestations by small insects known as weevils [7]. This could be problematic and expensive for farmers attempting to grow and sell large amounts of cowpea.

Potential Companies:

1. Loblaw's/President's Choice-100 University Avenue Toronto, Canada M5J 2Y1 1-800-564-6253

2. Fit Foods Ltd.-101-1551 Broadway Street Port Coquitlam, BC Canada V3C 6N9 1-888-337-0127
3. National Importers-120 - 13100 Mitchell Road Richmond, BC Canada V6V 1M8
604.324.1551

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