Adkins Scholarship Foundation

2010

SPAM® Classic:

"Where did it come from?"

&

"How did it get here?"

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TABLE OF CONTENTS

Introduction

First the craving begins to tantalize my palette of the unique salty, yet sweet, tender and juicy mouthwatering goodness in a can. The only hope as I walk towards the kitchen and then the cupboard is that we aren't out of SPAM. (Appendix D) Alas, one last can. My longing is set aside, and I undergo the preparation of peeling back the metallic lid. Seeing the pink canned meat, (Appendix D) I flip the can over onto my cutting board. With a couple of taps, out is the loaf of luncheon meat. As eager as I am to taste the un-fried SPAM, I contain myself and slice it so there's enough to go around. The pan is hot and the first slice is put down onto the surface, it sizzles, and darkens to a golden brown, ready to be flipped over within a minute or two. I finish cooking and a simple plate of rice and eggs compliments the star of the breakfast meal.

Though the household is now out of SPAM, the supply is restocked within ten minutes due to the store just down the road from my house. By instinct I go to where the rest of the canned meat is and stop in front of the SPAM section. Overlooking the other flavors of SPAM on the shelves, SPAM Classic is what my eyes are set on. The 12 ounce rectangular navy blue can showcases the iconic four yellow letters of S-P-A-M, which is hardly difficult to confuse with any other can. Being the closest source of SPAM replenishment, it is purchased. The walk back up to the house doesn't feel as long as the walk down to the store and sooner than I know it, I'm restoring the cupboard with the purchased SPAM and the cycle continues until more is needed. Little do I care at that moment about how far a can of SPAM has traveled to satisfy my craving.

I've been aware that things are impermanent and that there is a cycle between ourselves and our earth. A cycle so vague of value is the cycle of our consumption and our resources. Along with that, is the simplicity and convenience of purchasing what we wish to consume. SPAM Classic is a product among the never ending course of supply and demand that practically restocks itself on the shelves of stores all around the world. If only I had known how in depth one would have to research to trace a can of SPAM back to where it came from and how it got to me. I would have expressed a better appreciation for it rather than saving the best slices of fried SPAM all for myself.

Meet Miracle Meat

SPAM began with George A. Hormel, (Appendix A) a successful meat-packing businessman in Austin, Minnesota, U.S.A.[1] (Appendix B) and the Hormel Company. His son, Jay C. Hormel,[2] (Appendix C) began canning pork from 1926 and into the early 1930s.[3] Hormel had a lot of leftover meat from the shoulder of pork, so he tasked his head chef to conjure something up. Imitators followed suit and to beat his competition in the canned pork business, he added spices, giving it a distinct flavor, and reduced the can's size to be convenient for families.[4] Lastly, a brand name was created, historically

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[1] More American Eats. Dir. Steven M. Friedman. Television Clip. Atlas Media Corporation, History Channel. A&E Television Network, 2001.

[2] The History of SPAM, Part I. bnw2001. YouTube. 17, July. 2007. <http://www.youtube.com/watch?v=MuyKpDoz0dA> 30, March. 2010

[3] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[4] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

meant to be in all capital letters as a combination of "shoulder, pork and ham".[5] Kenneth Daigneau, (Appendix E) a 1930s actor, won the contest of naming Hormel's canned pork "SPAM", giving the Hormel Company a name to be world renown. [6] With smart enhancements and marketing strategies, SPAM became a successful product busting its competition. SPAM was released into market in 1937 (Appendix F) and was shortly shipped off to support World War II troops by 1941.[7] (Appendix G) Pork wasn't as highly rationed as beef was [8] (Appendix H) and by 1945 over 100 million pounds of SPAM were shipped over seas, supporting American and allied troops[9]

Guam, SPAM, and Uncle Sam

Cans of SPAM have been popular with Guam (Appendix I) since American troops shared this easily attainable meat with the liberated native people, the Chamorros.[10] The surplus of SPAM[11] gave natives a bond to the luncheon meat which is continuing to last for over 66 years. This bond has made Guam to be known as one of the

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[5] More American Eats. Dir. Steven M. Friedman. Television Clip. Atlas Media Corporation, History Channel. A&E Television Network, 2001.
[6] More American Eats. Dir. Steven M. Friedman. Television Clip. Atlas Media Corporation, History Channel. A&E Television Network, 2001.
[7] 2010 Hormel Food Sales, LLC "About SPAM Brand" SPAM Brand History. 2010. *SPAM.* 1, April. 2010. < http://www.spam.com/about/history/default.aspx>
[8] "Lower Meat Grades to Go Off Rationing." WASHINGTON. 27, September. 1945.
[9] 2010 Hormel Food Sales, LLC "About SPAM Brand" SPAM Brand History. 2010. *SPAM.* 1, April. 2010. < http://www.spam.com/about/history/default.aspx>
[10] "SPAM." Dictionary: Spam. 2010. *Answers.com.* 3, April. 2010. <http://www.answers.com/topic/spam-1>
[11] Heydt, Bruce. "Spam Again" America in WW II. June. 2006. *American WWII.* 30, March. 2010. < http://www.americainwwii.com/stories/spamagain.html>

highest consumers of SPAM per capita,[12] with consumption of approximately 16 cans of SPAM a year for every person.[13] The strong history between SPAM and Guam has encouraged various effects of the product's popularity. For one, many recipes have been created with tasty uses of SPAM[14]. Local cooking competitions have also been held, sending winners off to SPAM town U.S.A., Austin, Minnesota.[15] New flavors of SPAM have been introduced dedicated to the islanders of Guam, such as the Hot & Spicy SPAM (Appendix J) made with extra Tabasco hot sauce. SPAM is so strong of a dietary staple on Guam that when typhoon Paka hit in early December of 1997, the Hormel Foods Corporation donated 40,000 cases to the Salvation Army's disaster relief.[16] Hormel also has commemorated Guam's 60th Liberation in 2004, with a special edition label depicting a black and white World War II photo taken on Guam and placed at the back of the can.[17] (Appendix K)

Retailer and Store Operations

In the neighborhood of Wusstig Road, Palm's Market is one of the closest stores to get SPAM from. They buy their SPAM from a distributor called Dickerson & Quinn,

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[12] Greenberg, Bridgette. "Profiles in Porkage: The 'Biography' celebrates the history and glory of Spam.". Democrat & Chronicle. Rochester, NY 16, August. 1999. 1C, 6C.

[13] "Spam (food)" Spam (food): Encyclopedia. *All Experts*. 27, January. 2010. <http://en.allexperts.com/e/s/sp/spam_(food).htm>

[14] "1-25 of 25 Recipes" Spam Luncheon Meat. *Guam Diner.* 2, April. 2010. <http://www.guamdiner.com/recipe/list.php?category=23>

[15] The "Guam Food Guy", Ken. "Volume 4, Number 25" Guam Diner Newsletter. *Guam Diner.* 2, April. 2010. <http://www.guamdiner.com/newsletter/newsletter.php?newsletter=155>

[16] Kloppenburg, Diana. Telephone. Salvation Army 15, April. 2010.

[17] The "Guam Food Guy", Ken. "Volume 4, Number 25" Guam Diner Newsletter. *Guam Diner.* 2, April. 2010.

International Distributors, and the bigger stores of Onedera and Cost U Less.[18] SPAM cans are restocked when delivered. SPAM Classic is one among eight flavors of SPAM that are shelved. It is located directly to the left at the entrance of the canned food aisle. The cans with the oldest date are moved forward and the newly received cans of SPAM are shelved at the back, following basic shelving procedure. A can of SPAM costs $2.99[19] and Mr. Richard, the owner, greets everyone with a smile, the cash is exchanged and I usually carry the can rather than putting it in a plastic bag.

Shipping from Wholesaler to Retailer

Guam's local distributor of SPAM, Dickerson & Quinn, (Appendix L) has a warehouse with the storage capacity of 10,000 square feet.[20] SPAM Classic is shrink wrapped and stored on pallets with the use of forklifts[21], warehouse shelving for shelf stable products are organized on shelves with three levels. (Appendix M) The lowest level, which is on the ground, is where the SPAM is stored. (Appendix M) The allotted space for SPAM products is two pallets, one on top of the other. (Appendix N) The varieties of SPAM are within the ground level shelving sections of B27 – B32. (Appendix M) Products are delivered to their customers (retailers) by three large

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[18] Richard, Mr. Letter Interview. Palm's Market, Owner. 29, April. 2010.
[19] Richard, Mr. Letter Interview. Palm's Market, Owner. 29, April. 2010.
[20] "Guam Branch" DQ Offices Guam. *Dickerson & Quinn LLC Offices*. 23, January. 2010. <http://www.dqguam.com/dq_guam2.html>
[21] Palisoc, Shannon. Email Interview. Dickerson & Quinn. 29, April. 2010. (shannonp@guam.net)

capacity delivery trucks and one van.[22] An invoice or purchase order is received by the retailers for documentation.[23]

Wholesaler

Guam's SPAM wholesaler had previously been a company named Pacific Wholesalers,[24] without their wholesaling, SPAM may not have been as easily within reach as it is now. For over ten years, the company which opened in 1985 and is continuing to distribute SPAM to the island of Guam, is a Tan Holdings company named Dickerson & Quinn, International Distributors.[25] Dickerson & Quinn is the only distributor authorized to distribute or sell all Hormel products to Guam.[26] Dickerson & Quinn is known as a distributor on Guam, according to the U.S. Census Bureau, it is under the definition of both distributor and wholesaler.[27] As a distributor they are a wholesaler who purchases and takes title to products before reselling them to its customers (bigger stores such as Cost U Less) and as a wholesaler they sell it directly to retailers (such as Palm's Market). [28]

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[22] "Guam Branch" DQ Offices Guam. *Dickerson & Quinn LLC Offices*. 23, January. 2010. <http://www.dqguam.com/dq_guam2.html>

[23] Palisoc, Shannon. Email Interview. Dickerson & Quinn. 29, April. 2010. (shannonp@guam.net)

[24] Kernaghan, Tim. Email Interview. & Faxed Letter Interview. Dickerson & Quinn, V.P.,G.M. 15, March. 2010. (shannonp@guam.net) (671) 649-2750

[25] Kernaghan, Tim. Email Interview. & Faxed Letter Interview. Dickerson & Quinn, V.P.,G.M. 15, March. 2010. (shannonp@guam.net) (671) 649-2750

[26] Kernaghan, Tim. Email Interview. & Faxed Letter Interview. Dickerson & Quinn, V.P.,G.M. 15, March. 2010. (shannonp@guam.net) (671) 649-2750

[27] "Definitions" Monthly & Annual Wholesale Trade. 23, March. 2010. *U.S. Census Bureau*. 29, March. 2010. < http://www.census.gov/wholesale/definitions.html>

[28] "Definitions" Monthly & Annual Wholesale Trade. 23, March. 2010. *U.S. Census Bureau*. 29, March. 2010. < http://www.census.gov/wholesale/definitions.html>

Shipping from Distributor to Wholesaler

Dickerson & Quinn ships with Matson (Appendix O) and Horizon Lines (Appendix P).[29] Both shipping lines have ports in Long Beach, California. Matson Navigation Company's port is located at 1521 Pier C Street[30] (Appendix Q) and Horizon Lines' port is located at 669 Harbor Plaza.[31] Similar equipment that is used at the piers to lift containers (Appendix S) onto their steam ships are gantry cranes (Appendix R) or gauge container cranes (Appendix S). Chassis (Appendix T) slots are also used, which are a particular trailer specifically designed for transporting containers.

The shipping transit time from the West Coast is approximately 12-14 days.[32] Shipping liners come into the Port Authority of Guam located at 1026 Cabras Highway, Suite 201 in the village of Piti.[33] (Appendix U) A "Shipping Manifest" shows what container is arriving and on what vessel, customers and consignees must go through a port authority agent for the import or export of any freight.[34] The document called the "Bill of Lading" shows the content of a container, its point of derivation and its destination.[35] It serves as a document of title, a contract of carriage and a receipt for goods.[36]

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[29] Kernaghan, Tim. Email Interview. & Faxed Letter Interview. Dickerson & Quinn, V.P.,G.M. 15, March. 2010. (shannonp@guam.net) (671) 649-2750

[30] Long Beach, Pier C Street. Matson. *LongBeach. PDF.* 16, April. 2010.

[31] "HORIZON LINES" 29, March. 2010. <http://www.horizon-lines.com>

[32] Kernaghan, Tim. Email Interview. & Faxed Letter Interview. Dickerson & Quinn, V.P.,G.M. 15, March. 2010. (shannonp@guam.net) (671) 649-2750

[33] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[34] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[35] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

At the Port Authority of Guam there are five operating gantry cranes.[37] (Appendix V) Each is able to lift 2,240 pounds.[38] The containers are taken off the ships and are placed on a chassis.[39] Containers stay locked with padlocks or wire twist locks, while on the chassis they are transported by a tractor.[40] Containers are not opened unless the consignee requests for it, and thus picking cargo up themselves. The cargo can also stay in the container, to be approved for release by Guam Port Authority and Customs, and then transported by a trucking company[41] to the Dickerson and Quinn warehouse.

Distributor

There is a Hormel Foods Corporation Manufacturer in Stockton, California[42] but they do not manufacture SPAM products.[43] SPAM cargo from the Austin, Minnesota plant come through by train or trucking, these shipments may be stored in their warehouse and then moved to the warehouses in Long Beach ports, but there is no confirming evidence.

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[36] Glossary of Shipping Terms. U.S. Department of Shipping Terms. *Glossary_final. PDF.* 29, March. 2010.

[37] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[38] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[39] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[40] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[41] Javolsa, Josette J. Email Interview. Port Authority of Guam, Marketing Communications. 25, April. 2010. (jjavelosa@portguam.com)

[42] "Hormel Foods Corporation (HRL) - Description of Business." Description of Business. *Hotstocked.com.* 15, April. 2010. <http://www.hotstocked.com/companies/h/hormel-foods-corporation-HRL-description-58369.html>

[43] McLain, William W. *Email Interview.* Hormel Foods Corporation, Manager of External Communications. 3, March. 2010. (Media@Hormel.com)

The Hormel Inc. sales offices of California are located in Los Angeles and San Francisco,[44] SPAM may be stored in the Stockton warehouse for distribution in the west coast area. The only confirmation of SPAM being transported to Guam is from the manufacturing plant in Austin, Minnesota by train or truck and to the ports of Long Beach, using the shipping lines of Matson and Horizon Lines.

Shipping from Manufacturer to Distributor

Before any transportation of SPAM occurs, carriers are notified that cargo is ready for pickup.[45] Hormel has many ways to transport their products, among them is by the standard truck driver who moves SPAM cargo "over the road".[46] Cargo is picked up from the SPAM plant in Austin, Minnesota and is delivered to a warehouse near the ports of Long Beach, California. Another way SPAM gets to Long Beach is by "intermodal transportation", meaning a rail brokerage company is hired to move cargo by train.[47] One company hired by Hormel Foods Corporation is Hub Group Incorporated.[48] (Appendix W) First an empty container or trailer is picked up[49] in Austin, Minnesota and the SPAM cargo is picked up from the SPAM plant also located in Austin, it is then loaded into the empty container.[50] The container is driven to the nearest ramp or port (Appendix X) and

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[44] "Hormel Foods Corporation (HRL) - Description of Business." Description of Business. *Hotstocked.com*. 15, April. 2010. <http://www.hotstocked.com/companies/h/hormel-foods-corporation-HRL-description-58369.html>

[45] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

[46] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

[47] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

[48] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

[49] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

[50] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)

rail representatives ensure the container has "ingated."[51] The container is then put on a chassis and a crane then picks the container up and loads it onto a flat car train.[52] The limit of one container is sometimes stacked on another to make the train's trip more efficient.[53] (Appendix Y) When the train arrives at the destination, the container is stored in a warehouse. The SPAM is then transferred into 40 foot containers which are owned by the shipping lines.

Manufacturing Plant

Hormel's SPAM plant in Austin, Minnesota (Appendix Z) receives their pork from Quality Pork Processors,[54] (Appendix A1) who process the hogs for manufacturing.[55] The meat of pork shoulder, which is the hog's front leg,[56] and ham, which is the back leg, (Appendix B1) are brought into the plant to be taken apart.[57] The shoulder meat is taken off its bone by a hydraulic press and is deposited into a large bin.[58] The meat from ham is cut off by workers called "meat trimmers", who separate the fatty or "white" pieces and the meatier "red" pieces. The separated meat is stored in large

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[51] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)
[52] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)
[53] Otis, Randy. Email Interview. Hub Group. 22, April. 2010. (CASupport@hubgroup.com)
[54] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation*. 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>
[55] "Quality Pork Processors, Inc." Home. 2008. *Quality Pork Processors*. 11, April. 2010. <http://www.qppinc.net/>
[56] "Pork Picnic Shoulder." Ask The Meatman. 2001-2010. *Ask the Meatman*. 12, February. 2010. < http://www.askthemeatman.com/pork_picnic_shoulder_cuts.htm>
[57] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>
[58] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

containers and put into a refrigerated room, which is cooled by the plant's central ammonia system, serviced by Preston Refrigeration Co. of Kansas City, Kansas.[59]

When needed, the containers are wheeled out onto the production floor and the meat is transferred by crane and deposited into a huge metal trough where the meat is grinded by a large drill bit.[60] (Appendix C1) The batch of grinded meat is weighed at about 8,000 pounds and goes through a metal detector that looks for any hazardous metal items.[61] Then to make sure the SPAM is at the right pork to ham and white to red meat piece ratios, a small piece is examined.[62]

Vacuum mixing is the next step in the process. The large bins of ground meat are transferred to the mixers equipped with a refrigerated ammonia outer core which brings the meat's temperature below the freezing point of 32° Fahrenheit,[63] which is also serviced by Preston Refrigeration Co.[64] The other ingredients that make up spam are added, which are salt, water, modified potato starch, sugar, and sodium nitrate.[65] Closing the vacuum mixer creates an airtight seal and the lot is mixed. (Appendix C1)

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[59] Preston, Cliff. Email Interview. Preston Refrigeration Co., Owner, President. 15, April. 2010. (cpreston@cicom.net)

[60] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[61] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[62] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[63] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[64] Preston, Cliff. Email Interview. Preston Refrigeration Co., Owner, President. 15, April. 2010. (cpreston@cicom.net)

[65] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

As the SPAM mixes, empty SPAM cans from Silgan Containers Corporation[66] (Appendix D1) are taken off their storage pallets and pushed onto the conveyor belt sent to be filled with SPAM. Approximately 1,000 pounds of SPAM come from the mixer and are put into receivers which are connected to pipes.[67] (Appendix C1) The SPAM travels through the pipes and reaches the can fillers.[68] Whilst the cans run under the fillers they are mechanically picked up towards it and raw spam is deposited into each can. The can is sealed at the closing machine[69] which was originally designed by Silgan Containers Corporation's origin company, American Can Company.[70]

The SPAM heads to the six story tall hydrostatic cooker, which cooks the SPAM inside their sealed cans with water. They are automatically assembled in a line and a mechanical arm swings, pushing 24 cans onto a shelving unit. 66,000 SPAM cans embark on a cooking process through this 11 chambered hydrostatic cooker[71] within two hours and a half. They are heated, sterilized, washed and cooled within that time.[72] The cooked SPAM is now cool and a labeling mechanism awaits them further down the conveyor

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[66] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[67] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[68] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[69] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[70] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[71] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[72] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

belt. The label is made of a plastic called polypropylene film.[73] The label is cut to the specified length and adheres to itself and the can. The automatic labelers are able to label 320 cans per minute.[74]

Now ready for storage, 24 cans are set onto flat pieces of cardboard which forms into an encasing box. The box is transferred onto a pallet and when the pallet is full it is shrink wrapped. The cans are stamped with their production date and other numbers for identification purposes.[75] It requires 20 minutes and 13 employees to assist in the production of 7,200 cans which fit on one pallet.[76] Within one hour 3 pallets are made equaling 21,000 cans. 16 pallets are created in one shift summing up to 115,200 cans.[77] Each pallet is then stored onto shelves in the building by a computer operated crane. One can of SPAM out of every 1,000 made must be tested and assured that the meat was properly cooked, if bacteria content is balanced and so it tastes right.[78] It is required by the U.S. Department of Agriculture that the SPAM cannot be distributed for ten days until it's batch is approved, then it is allowed to be sold or transported.

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[73] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[74] The History of SPAM, Part II. bnw2001. YouTube. 17, July. 2007. <http://www.youtube.com/watch?v=UThZ9cDd8zY&feature=related> 30, March. 2010

[75] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[76] The History of SPAM, Part II. bnw2001. YouTube. 17, July. 2007. <http://www.youtube.com/watch?v=UThZ9cDd8zY&feature=related> 30, March. 2010

[77] The History of SPAM, Part II. bnw2001. YouTube. 17, July. 2007. <http://www.youtube.com/watch?v=UThZ9cDd8zY&feature=related> 30, March. 2010

[78] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

Shipping Raw Materials to Manufacturer

Cans for the SPAM plant in Austin, Minnesota are processed by the Silgan Containers Corporation, (Appendix E1) and have been since SPAM's debut in 1937, under their "legacy" company, American Can Company.[79] One Silgan plant produces the cans and another produces the lids for SPAM. Before the delivery of supplies, Hormel's corporate office in Austin, Minnesota contacts Silgan Container's Corporation office in Mendota Heights, Minnesota, by means of Electronic Data Interface, or EDI.[80]

Electronic Data Interface is also used to deliver 3,000 truckloads of supplies needed by Hormel and for receiving other invoices and payment transactions.[81] An order is put through by Hormel's computers to be sent to their corporate office, which usually takes two hours to be approved.[82] It is then transmitted to Silgan's corporate office in Woodland Hills, California, where the request is verified to ensure all information between Silgan and Hormel match.[83] The computers then send a print out to the Mendota Heights office in Minnesota.[84] The request delivery is then forwarded to Mr. Art Lafond who has handled the Hormel account for more than 42 years, finally he ensures the order

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[79] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)
[80] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)
[81] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)
[82] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)
[83] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)
[84] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

is processed and confirmed. From there the supplies are shipped to the SPAM plant.[85] The truck drive from both Silgan plants to the SPAM plant is about a three hour drive.[86]

Hogs for the Hormel's manufacturing plant in Austin, Minnesota are brought to and processed by Quality Pork Processors,[87] who operates Hormel's new harvesting facility at Austin, Minnesota under a custom harvesting arrangement.[88] What is defined as humane slaughter of pigs is that the swine should be unloaded in a calm manner and guided down a ramp off their transport vehicle.[89] Pigs are usually slaughtered within arrival, but if kept overnight they must be given a period of rest.[90] They are then directed into a race where the group of pigs is reduced to a single file line.[91] The hogs should be killed with a consistent electrical stunning, carbon-dioxide gas stunning or captive-bolt stunning.[92] Death must be ensured by checking for gasps of breath or brain stem reflexes such as blinking.[93]

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[85] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[86] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[87] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation*. 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

[88] "Hormel Foods Corporation (HRL) - Description of Business." Description of Business. *Hotstocked.com*. 15, April. 2010. <http://www.hotstocked.com/companies/h/hormel-foods-corporation-HRL-description-58369.html>

[89] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

[90] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

[91] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

[92] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

[93] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

Bleeding is the next step of the process where the major blood vessels (the carotid artery and jugular vein)[94] are cut to ensure a "rapid bleed out" which is a method used to maintain the meat's quality.[95] As the pig is hung by its hind legs, (Appendix F1) the bleeding continues for about 5 minutes.[96] They are dunked into a scalding tank to remove the pig's hair, called bristles.[97] Any bristles remaining are singed with a flame and the carcass is then skinned.[98]

The pig is then split through by its major parts where the ham is separated, the chest is split, and the abdominal organs called offal, are removed. The offal is separated into edible parts which are kept for other products and inedible parts are discarded. The carcass is then split in half and is washed. A salt solution is used to remove any harmful bacteria.[99] The carcass is cooled and cut into three sections: fore-end, middle and hind

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[94] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[95] "Humane Slaughter of Pigs." Humane Slaughter Association. *England.* 15, April. 2010. <http://www.hsa.org.uk/Information/Slaughter/Pig%20Slaughter.html>

[96] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[97] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[98] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[99] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

leg.[100] It is then further separated into different cuts of meat and is packaged for additional processing at the manufacturing plant.[101]

Hormel could not discharge any data as to who they purchase their food additives from.[102] Modified potato starch, sugar, salt and sodium nitrate are considered as food additives which either enhance the technical properties or flavor properties.[103] On an industrial scale they may be all transported the same way. The additives may be compacted into bags which are then put into sacks or compacted into large cubes used by the manufactures. They are put into trucks which transport them to their destinations. (Appendix G1) Though a small scale of water is used as an ingredient in SPAM, information as to where their water is purchased from couldn't be released either.[104] Along with the information of food additives, and water, the manufacturer of SPAM labels was also respectfully withheld to secure proprietary information between Hormel Foods Corporation and their business partners.[105]

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[100] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[101] "Pig Slaughtering." Process Description. *HYFOMA*. 8, April. 2010. <http://www.hyfoma.com/en/content/food-branches-processing-manufacturing/meat-fish-shrimps/pig-slaughtering/>

[102] McLain, William W. *Email Interview*. Hormel Foods Corporation, Manager of External Communications. 3, March. 2010. (Media@Hormel.com)

[103] "Additives in Meat and Poultry Products." Fact Sheets: Food Labeling. November, 2008. *USDA*. 12, February. <http://www.fsis.usda.gov/Fact_Sheets/Additives_in_Meat_&_Poultry_Products/index.asp>

[104] McLain, William W. *Email Interview*. Hormel Foods Corporation, Manager of External Communications. 3, March. 2010. (Media@Hormel.com)

[105] McLain, William W. *Email Interview*. Hormel Foods Corporation, Manager of External Communications. 3, March. 2010. (Media@Hormel.com)

Natural Resource

The cans, or bodies, (Appendix D) are made at the Silgan plant in Menomonie, Wisconsin.[106] At the rate of 350 cans per minute, on 7 output lanes, the cans are shaped with a 300 pound press. (Appendix H1) The first press is an oval, then the cans are pressed into a rectangular shape and finally the trim, or flange, of the can is created. (Appendix H1) The lids, with the opening tab in the corner, which are referred to as "FPEO (Full Panel Easy Open) ends" (Appendix D) are made at the Silgan plant in St. Dodge, Iowa.[107] Silgan Containers Corporation purchases aluminum materials from Alcoa, a worldwide leader in aluminum suppliers.[108]

Alcoa's source of aluminum starts with the generation of hydroelectric power by their subsidiary, Tapoco Inc. at their Smoky Mountain dams in Tennessee.[109] (Appendix I1) This provides power to the plant's two smelting potlines, which produce 1.3 million pounds of metal melted from their ores[110], most common is a rock called bauxite. Used cans are recycled by the Can Reclamation process at the Tennessee operations, which

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[106] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[107] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[108] Clancy, "Bill" William T. Email Interview. *Silgan Containers Corporation*, National Accounts Manager. 3, April. 2010. (BClancy@Silgancontainers.com)

[109] "Description, Popup" Alcoa. 4, April. 2010. <http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

[110] "Description, Popup" Alcoa. 4, April. 2010. <http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

saves 95% more energy than it would to extract new aluminum from the earth.[111] The molten material from the smelting lines and the recycled cans are cast into an ingot forming a superior aluminum sheet. (Appendix I1) The sheets then move to the hot rolling process where their impurities are shaved off the top with a "scalder".[112] It is then slimmed down from a 21 inch thick ingot to an aluminum sheet 1/8 of inch thick, with the length of 3,000 feet in seven minutes.[113] (Appendix I1) Going through the cooling process of the Continuous Cold Mill is next, where the sheets are now coils and are cooled to the required thickness to meet their customer's needs. The final step is to slit the coils, glaze them with the enamel that the Silgan Containers Corporation requires, package them and truck them off to Silgan Containers Corporation.

The famous labels that cover the distinctive SPAM cans are made out of Polypropylene film, (Appendix J1) a thermoplastic polymer[114] which was invented by independent scientists Karl Ziegler and Giulio Natta in 1953.[115] To formulate plastics on an industrial scale requires the preparation of raw materials (oil) and monomers,[116] (the small molecules which join to make a polymer). Polymers are defined as very large

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[111] "Description, Popup" Alcoa. 4, April. 2010. <http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

[112] "Description, Popup" Alcoa. 4, April. 2010. <http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

[113] "Description, Popup" Alcoa. 4, April. 2010. <http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

[114] "Polyproylene Film - PP Film" Paper and Film. 2009. *Griff Paper and Film*. 10, April. 2010. <http://www.paperandfilm.com/polypropylenefilm-ppfilm.aspx>

[115] Freudenrich, Craig Ph.D. "Types of Plastics." How Plastics Work. *How Stuff Works*. 11, April. 2010. <http://science.howstuffworks.com/plastic4.htm>

[116] Freudenrich, Craig Ph.D. "Types of Plastics." How Plastics Work. *How Stuff Works*. 11, April. 2010. <http://science.howstuffworks.com/plastic5.htm>

molecules composed of repeating structural units.[117] Having monomers to form polymers is done by a process known as polymerization,[118] which is the second step in creating industrial plastics. This process occurs in large polymerization plants, next in the process is the forming of polymers into polymer resins that come out in the form of pellets or beads. The beads or pellets are then extruded, where they are heated and mixed in an extended chamber and then forced through small holes.[119] The polypropylene film is then cooled with either water or air.[120] The SPAM design is printed onto the labels and they are rolled to make a compacted roll of film. The SPAM Classic label is 1 of about 27 different SPAM labels which are transported to the Austin, Minnesota plant.[121]

Hormel purchases pigs from over 775 "independent family farmers" across the Midwest that meets Hormel's requirements. To ensure that Hormel's requirements are being met, the hogs are purchased with "contractual agreements".[122] The contract includes that the farmers must follow all local, state, and federal laws. They must also follow Hormel's outlines assuring proper animal welfare and handling.[123] Farm employees must be certified by the National Pork Board's, Pork Quality Assurance

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[117] Castka, Metcalfe, Tzimopolous and Williams. Modern Chemistry. Boca Raton, Florida: CRC Press, Incorporated 1988.

[118] Castka, Metcalfe, Tzimopolous and Williams. Modern Chemistry. Boca Raton, Florida: CRC Press, Incorporated 1988.

[119] Freudenrich, Craig Ph.D. "Types of Plastics." How Plastics Work. *How Stuff Works*. 11, April. 2010. <http://science.howstuffworks.com/plastic5.htm>

[120] Freudenrich, Craig Ph.D. "Types of Plastics." How Plastics Work. *How Stuff Works*. 11, April. 2010. <http://science.howstuffworks.com/plastic5.htm>

[121] The History of SPAM, Part II. bnw2001. YouTube. 17, July. 2007. <http://www.youtube.com/watch?v=UThZ9cDd8zY&feature=related> 30, March. 2010

[122] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation*. 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

[123] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation*. 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

(PQA) Plus Program, the facility must pass assessments by the PQA Plus Program and everyone involved in the transportation of the hogs must be certified in Transport Quality Assurance or TQA.[124]

A group of pigs is called a drift, team or herd and when transporting pigs they are called a drove.[125] Transportation of hogs is a risky business because truck holdings are crowded and suffering or sometimes deaths or "deads"[126] occur during transportation.[127] Overloading a truck saves $0.25 per head while the overcrowding contributes to approximately 80,000 deads a year.[128] With the TQA program in place, hogs that die while being transported to slaughter are steadily declining.[129]

Hormel's hogs come from family farms all over the Midwest and from their company owned farms in Arizona, Colorado and Wyoming.[130] Pig farms are called

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[124] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation.* 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

[125] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[126] Vansickle, Joe. "Hog Transportation Program Makes Tracks." 15, August. 2004. National Hog Farmer. 30, March. 2010. <http://nationalhogfarmer.com/mag/farming_hog_transportation_program/>

[127] "Pork: A Pig's Life." The Issues. *Compassionate Action for Animals.* <http://www.exploreveg.org/issues/pork.html>

[128] "Pork: A Pig's Life." The Issues. *Compassionate Action for Animals.* <http://www.exploreveg.org/issues/pork.html>

[129] Vansickle, Joe. "Hog Transportation Program Makes Tracks." 15, August. 2004. National Hog Farmer. 30, March. 2010. <http://nationalhogfarmer.com/mag/farming_hog_transportation_program/>

[130] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation.* 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

piggeries and most piggeries pigs are kept indoors, in cement-floored pens or cages.[131] This type of pig farming is called intensive farming.[132]

Pigs raised in the farms are fed a diet of grains like corn or oats, plants and growth vitamins and minerals.[133] The supply of swine must begin with breeding. Male pigs, or boars, mate with a female, or sow, and within four months she is ready for farrowing, or birth.[134] At the company owned farms, with improving animal welfare agreements, female breeding pigs are housed in stalls or group pens.[135] A litter, or farrow, of 8-12 piglets are born on average, (Appendix K1) they should begin to eat solid food after 3-5 weeks of suckling from their mother's breasts.[136] Most pigs mature at about the age of three and a half and can live up to 10 – 15 years.[137] Sows must be considered active, meaning they must be gestating (reproducing or able for reproduction) or lactating (producing milk).[138] If they are active, their job in reproducing continues and if not, they are sent to slaughter.[139]

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[131] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[132] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[133] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[134] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[135] "Overview of Hog Operations" Process, Animal Welfare. 2008. *Hormel Foods Corporation*. 10, April. 2010. <http://www.hormelfoods.com/csr/2008/process/animalwelfare/hogs.aspxhtml>

[136] ""Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[137] "Farms: Pigs." People and Places. *Kid Cyber*. 30, March. 2010. <http://www.kidcyber.com.au/topics/farmpiggies.htm>

[138] "Pork: A Pig's Life." The Issues. *Compassionate Action for Animals*. <http://www.exploreveg.org/issues/pork.html>

[139] ""Pork: A Pig's Life." The Issues. *Compassionate Action for Animals*. <http://www.exploreveg.org/issues/pork.html>

An additive used in SPAM is Salt, or sodium chloride, which is deposits of sedimentary evaporated minerals, and there are three main ways to extract it.[140] First there is solar evaporation, where salt crystals are grown or harvested from dried up oceans, seas, lakes or salt beds.[141] (Appendix L1) Another is the process of shaft mining, where rock salt is extracted from the ground and then brought up above ground to be further processed.[142] The last extraction process is called solution mining, the most popular form of extraction on an industrial scale.[143] This process requires water to flood underground, which is then sucked back up. (Appendix M1) This water and extracted salt solution is called brine.[144] The brine is heated and when all the water has evaporated the salt remains, which is known as "refined" salt.[145]

Water is also used in SPAM as an ingredient and it is a basic earth element. One water molecule is made up of two hydrogen atoms and one oxygen atom.[146] (Appendix N1) It is able to be in the states of solid (ice), liquid (water) and gas (vapor).[147] Water is

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[140] "About Salt." Salt Institute. 2009. *Salt Institute.* 28, March. 2010. <http://www.saltinstitute.org/About-salt>

[141] "About Salt." Salt Institute. 2009. *Salt Institute.* 28, March. 2010. <http://www.saltinstitute.org/About-salt>

[142] "About Salt." Salt Institute. 2009. *Salt Institute.* 28, March. 2010. <http://www.saltinstitute.org/About-salt>

[143] "About Salt." Salt Institute. 2009. *Salt Institute.* 28, March. 2010. <http://www.saltinstitute.org/About-salt>

[144] "Aquaculture dictionary." 2000. Aquatext.com 28, March. 2010. <www.aquatext.com/list-b.htm>

[145] "About Salt." Salt Institute. 2009. *Salt Institute.* 28, March. 2010. <http://www.saltinstitute.org/About-salt>

[146] Castka, Metcalfe, Tzimopolous and Williams. Modern Chemistry. Boca Raton, Florida: CRC Press, Incorporated 1988.

[147] Castka, Metcalfe, Tzimopolous and Williams. Modern Chemistry. Boca Raton, Florida: CRC Press, Incorporated 1988.

also tasteless, odorless, and colorless.[148] Fresh water is what is needed to be apart of food manufacturing, this is simply obtained through the hydrologic cycle.[149] Water evaporates into the atmosphere, condenses in the clouds and then precipitates in the form of rain, sleet or snow and the process starts all over again.[150] (Appendix O1)

Modified potato starch (Appendix P1) is an ingredient they put into SPAM as a binding and thickening agent. It is classified as a food additive, modified food starches are chemically altered to enhance their thickening properties.[151] Potatoes are the source for SPAM's modified food starch. Seeds from flowers (Appendix Q1) are planted and laid out in long rows and are covered with fertilizer rich soil. Farmers must maintain the soil surrounding the potato to ensure the quality of it.[152] When the plant sprouts it is protected with sprays of insecticide, pesticides and fungicides.[153] The potato is the tuber, a part of the root of the plant, (Appendix R1) and when it is harvest time the plant must be killed to ensure the potatoes do not bruise.[154]

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[148] Meriam-Webster. Meriam-Webster's Collegiate Dictionary, 11th Edition. Springfield, Massachusetts: Merriam-Webster,Incorporated 2003.
[149] Meriam-Webster. Meriam-Webster's Collegiate Dictionary, 11th Edition. Springfield, Massachusetts: Merriam-Webster,Incorporated 2003.
[150] Meriam-Webster. Meriam-Webster's Collegiate Dictionary, 11th Edition. Springfield, Massachusetts: Merriam-Webster,Incorporated 2003.
[151] "Additives in Meat and Poultry Products." Fact Sheets: Food Labeling. November, 2008. *USDA*. 12, February. <http://www.fsis.usda.gov/Fact_Sheets/Additives_in_Meat_&_Poultry_Products/index.asp>
[152] "Growing Process." Potatoes. *Tater Act*. 14, April. 2010. <http://www.tateract.org/growingprocess.html>
[153] "Growing the Seed." Potatoes. *Tater Act*. 14, April. 2010. <http://www.tateract.org/growingprocess.html>
[154] "Harvest." Potatoes. *Tater Act*. 14, April. 2010. <http://www.tateract.org/growingprocess.html>

They are uprooted with a machine called a windrower and are picked up by a harvester and truck.[155] Most of the potatoes which are grown in the north of the United States are stored during the winter.[156] They must be kept at the temperature of 45° – 50° Fahrenheit to guarantee quality potatoes. They are then transported to a refiner.

Starch begins as a sugar solution that makes its way from the leaves to the tubers. Within the tubers is where the sugars turn into starch.[157] When the tubers, or potatoes, are being unloaded from the trucks they are in the process of refining, any damage or loss of moisture will affect the product.[158] The potatoes are taken to remove any dirt, sand or gravel, and are then washed. As they are washed fungi, remaining dirt, and skin are removed.[159] Rasping is the next stage where slurry is made of the potatoes, consisting of pulp, juice and starch.[160] To avoid the starch being discolored, sulphur gases are added. The starch is flushed with high pressure water, which separates the starch from the cells, the slurry is then filtered.[161]

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[155] "Harvest." Potatoes. *Tater Act*. 14, April. 2010. <http://www.tateract.org/growingprocess.html>

[156] "Potato Storage." Potatoes. *Tater Act*. 14, April. 2010. <http://www.tateract.org/growingprocess.html>

[157] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[158] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[159] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[160] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[161] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

As much juice of the slurry is excreted and it is now "starch milk", which is diluted over and over again.[162] This is put into a hydrocyclone unit which has the starch settle and the pulp float and the remainder is again sieved through a filter. The starch is then cooled to strain any bacteria growth and is cleaned with other chemicals.[163] The wet starch is dried through with rotating vacuum filters and is applied with different reacting conditions of temperature, acids levels or additives, thus making it modified potato starch.[164]

Sugar, or sucrose, among SPAM ingredients, is one of the most important and widely produced food additives.[165] Plants are grown commercially to produce sugar, sugarcane makes up 70% of sugar production and 30% is of sugar beets and other plants.[166] The process that plants use to make sugar, or glucose, is by photosynthesis, where they use carbon dioxide, sunlight and water to produce sugars and oxygen.[167] (Appendix S1)

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[162] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[163] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[164] "Technical Memorandum on Potato Starch." International Starch Institute. 1999-2010. *International Starch Institute*. 14, April. 2010. <http://www.starch.dk/isi/starch/tm5www-potato.asp>

[165] "Additives in Meat and Poultry Products." Fact Sheets: Food Labeling. November, 2008. *USDA*. 12, February. <http://www.fsis.usda.gov/Fact_Sheets/Additives_in_Meat_&_Poultry_Products/index.asp>

[166] "An Introduction." How sugar is made. *Sucrose.com SKIL*. 20, April. 2010. <http://www.sucrose.com/learn.html>

[167] "An Introduction." How sugar is made. *Sucrose.com SKIL*. 20, April. 2010. <http://www.sucrose.com/learn.html>

Sugarcane is cultivated through cane setts, known as seed pieces, where the stalk is cut into sections.[168] A root system develops and is then called a "settling".[169] (Appendix T1) It is then covered with soil and will germinate in 10 – 21 days, which approximately 12 stalks will grow from.[170] Another way that sugarcane is grown is by bud chips, where the stalk sections of the sugar cane have a single bud present.[171] (Appendix U1) Within 6 weeks the seedlings have sprouted and are transplanted into the main crop field.[172] Field scouting is done to ensure the field is maintained, preventing pests, controlling disease, managing water, nutrients and other treatments.[173] Depending on where the crop is raised it could take 12-24 months for a crop to be harvested.[174]

Sugar beet is cultivated starting with its flower producing seeds.[175] The majority of the sugar is within the root, which should be harvested within the crop's first growing season where it is at its maximum size.[176] (Appendix V1) The field must be maintained, preventing pests and diseases. A crop can be available within 100 days, depending on

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[168] "Planting Material: Sugarcane." Agronomic Practices. 2004. *Sugar Cane Crops*. 20, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>
[169] "Planting Material: Sugarcane." Agronomic Practices. 2004. *Sugar Cane Crops*. 20, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>
[170] Sugarcane Lifecycle. Cane Growers. *lifecycle. PDF*. 14, April. 2010.
[171] "Planting Material: Sugarcane." Agronomic Practices. 2004. *Sugar Cane Crops*. 20, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>
[172] "Planting Material: Sugarcane." Agronomic Practices. 2004. *Sugar Cane Crops*. 20, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>
[173] "Planting Material: Sugarcane." Agronomic Practices. 2004. *Sugar Cane Crops*. 20, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>
[174] Sugarcane Lifecycle. Cane Growers. *lifecycle. PDF*. 14, April. 2010.
[175] "Sugar beet crops." Sugar beet crops, growing and harvesting. 1999 & 2006. *NJK. Solar Navigator*. 21, April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>
[176] "Sugar beet crops." Sugar beet crops, growing and harvesting. 1999 & 2006. *NJK. Solar Navigator*. 21, April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>

where the sugar beet was cultivated.[177] When sugarcane and sugarcane and sugar beet have grown to their requirements, it is time for harvest.

Sugar is manufactured starting with the plants being uprooted. The dirt and debris are then separated. Crops are cleaned, cut, and diffused, meaning the cells are blasted with water jet streams and are squished with metal rollers and are further crushed.[178] Juice of lime is added to remove impurities and the sugar water and juice mixture is boiled.[179] (Appendix W1) The syrup is then evaporated and the syrup and sugar are separated by a rotating container, spinning at thousands of revolutions per minute, leaving crystallized sugar.[180] (Appendix X1)

Sodium Nitrate (Appendix Y1) is a food additive used in SPAM to prevent the pink meat from turning an unappealing color of brown.[181] (Appendix Z1) It is a salt and an anti-oxidant.[182] It also acts as a preservative and according to research conducted by the U.S. Department of Agriculture, it prevents the growth of botulism-causing bacteria and an environmental bacterium called *Listeria monocytogenes.*[183] Sodium Nitrate is

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[177] "Sugar beet crops." Sugar beet crops, growing and harvesting. 1999 & 2006. *NJK. Solar Navigator*. 21, April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>

[178] "How is Sugar Made." How Does Spices. 1999-2010. *eHow, Inc*. 20, April. 2010. <http://www.ehow.com/how-does_5005198_how-sugar-made.html>

[179] "How is Sugar Made." How Does Spices. 1999-2010. *eHow, Inc*. 20, April. 2010. <http://www.ehow.com/how-does_5005198_how-sugar-made.html>

[180] "How is Sugar Made." How Does Spices. 1999-2010. *eHow, Inc*. 20, April. 2010. <http://www.ehow.com/how-does_5005198_how-sugar-made.html>

[181] Nancy, E.V. Bryk. "SPAM." How products are made. 2006-2009. *Made How*. 23, January. 2010. <http://www.madehow.com/Volume-6/Spam.html>

[182] "Questions & Answers." Sodium Nitrate. 29, March. 2010. <http://www.meatsafety.org/ht/d/sp/i/45243/pid/45243>

[183] "Questions & Answers." Sodium Nitrate. 29, March. 2010. <http://www.meatsafety.org/ht/d/sp/i/45243/pid/45243>

found in the form of caliche, a mix of nitrate rock or gravel.[184] Solid sodium nitrate is heated and melted with the remaining product being sodium nitrate and oxygen.[185] To have an industrial amount of sodium nitrate, this process is done on an industrial scale.

Environmental Aspects

Being creative and efficient with our resources are ways to go green. SPAM was created from pork shoulder and ham to be more efficient, this way the pig's meat was not going to waste. Following the Ingredient list on the can, water is next. Water, the life-giving and most important element on earth, needs to be cherished and kept clean. From dried up water beds is where salt comes from along with other salt extraction methods. The common thing is that, methods aside, salt is extracted from the earth. Modified Potato Starch and Sugar derive from plants like potatoes, sugarcane, and sugar beets and are among the most widely produced food additives. Sodium Nitrate also comes from the earth and without it our SPAM, hams and bacon wouldn't be as great tasting as we know them to be. Taking care of our earth promotes healthier resources, products of higher quality and an appreciative sense of mind.

Before cans are produced they start as aluminum sheets and aluminum ores. When SPAM cans are emptied and sanitized, they can be used as containers for nails, buttons and other little knickknacks. Polypropylene labels begin as most plastics do, with

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[184] "sodium nitrate." The Columbia Encyclopedia, Sixth Edition. 2008. *Encyclopedia.com.* 29, March. 2010. <http://www.encyclopedia.com>.

[185] "Sodium Nitrate." Some Common Nitrates. 2010. *Tutor Vista*. 29, March. 2010. <http://www.tutorvista.com/content/chemistry/chemistry-ii/nitrogen/nitrates-summary.php>

oil and heat, and then formed into a film. SPAM cans and labels are collected by SPAM fans all over the world and many have been produced and released under special collectors' edition. Collecting labels would have a more personal purpose rather than burning up in a dump or deteriorating through lifetimes in landfills. There are many little things to do which can contribute to the green movement of this generation.

Conclusion

An idea of efficiency, a creative design, and a plan are among the first steps for a product to get into market. Following the plan, creating the product, and having the ability to adapt to change or challenge follows. Overtime, as the product either progresses or not, to provide to the call of demands are tested and supplies are set to be manageable. The relationships and networks created with customers, retailers, wholesalers, distributors, manufacturers and their business partners are linked with the companies that transport their products to where they are needed. As products are traded, pawned, sold, or bought throughout the world, the initial idea that created it follows the product wherever it goes.

Although it is not a simple process for a product like SPAM to get to me, I appreciate the research I've conducted and the people who have helped me. Most of all I appreciate my new ability to share with others that they should appreciate what they have and to think again about what "convenience" means to them.

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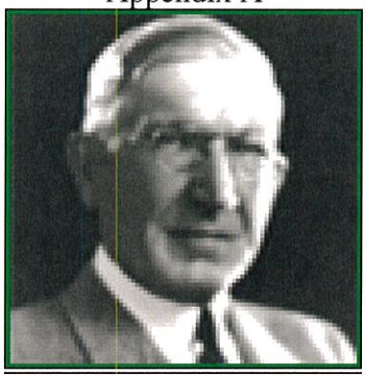
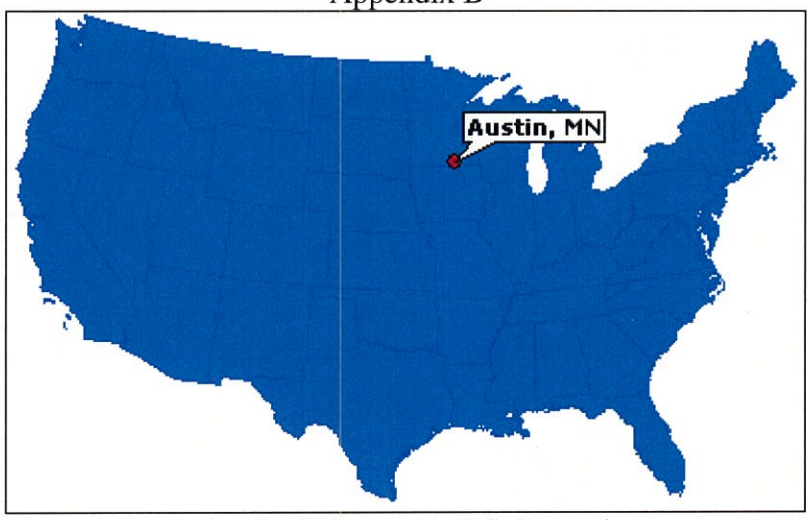
APPENDIX

Appendix A



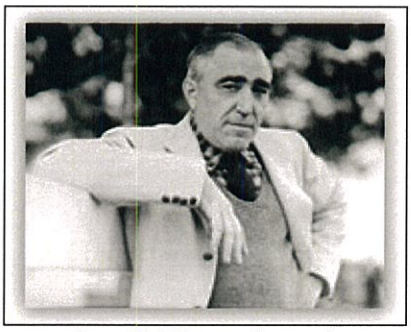
George A. Hormel, pg.4
28, April. 2010. <http://www.hormelfoods.com/about/history/default.aspx>

Appendix B



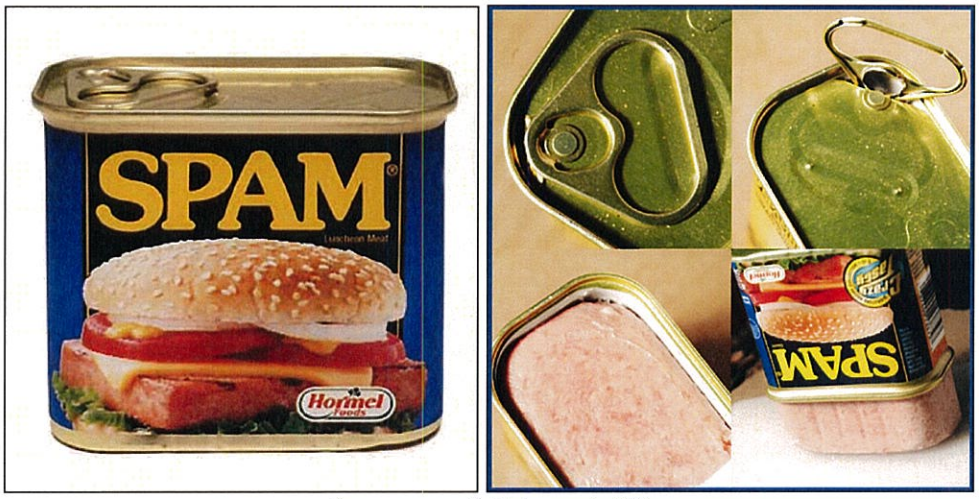
Austin, Minnesota, U.S.A., pg.4
28, April. 2010. <http://pix.epodunk.com/locatorMaps/mn/MN_20823.gif>

Appendix C



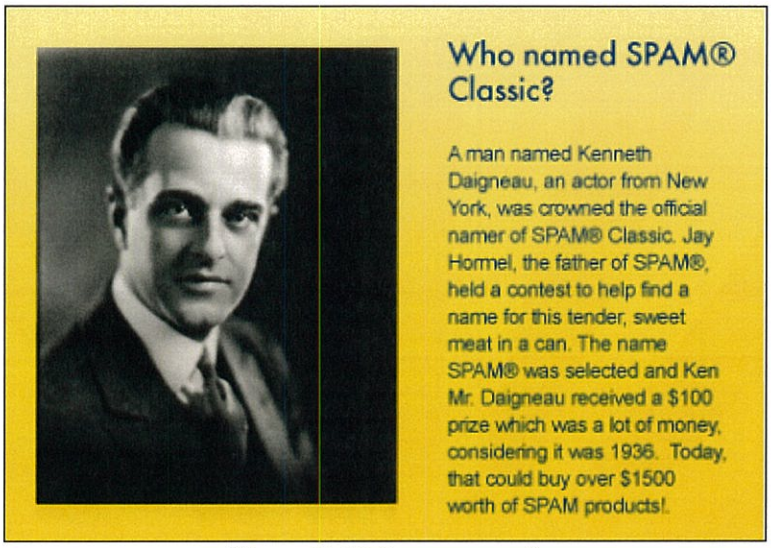
Jay C. Hormel, pg.4
28, April. 2010.
<http://www.hormel.com/ASSETS/E17B4AE1314D4F5DA15F56BC0F44C807/George-C-Hormel.jpg>

Appendix D



Spam can & lid, pg.1, 20
28, April. 2010. <http://geekwhisperin.files.wordpress.com/2009/05/spam.jpg>
29, April. 2010. <http://www.ramblemagazine.com/ramble/images/food/spam2.jpg>

Appendix E



Kenneth Daigneau, pg.5

2010 Homel Food Sales, LLC "SPAM Facts & Trivia" Fun & Games. 2010. *SPAM*. 1, April. 2010. <http://www.spam.com/games/facts/default.aspx>

Appendix F

SPAM Debuts: 1937, pg.5

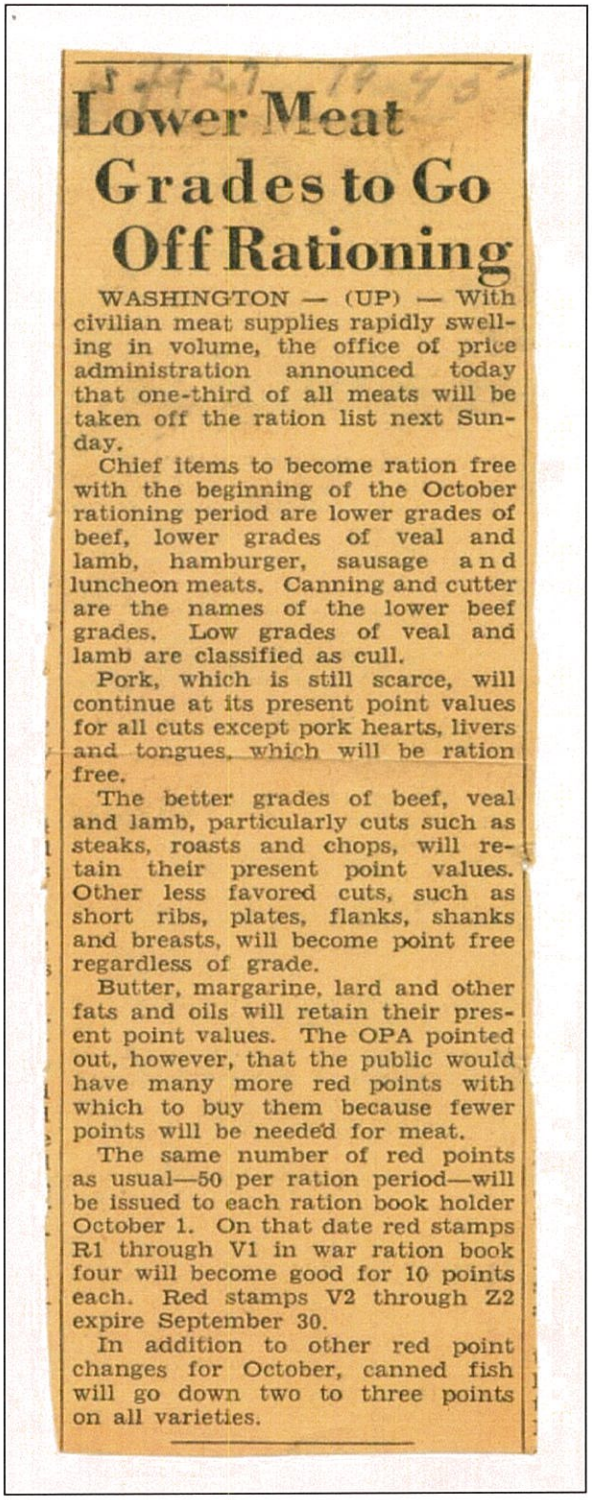
2010 Homel Food Sales, LLC "About SPAM Brand" SPAM Brand History. 2010. *SPAM*. 1, April. 2010. < http://www.spam.com/about/history/default.aspx>

Appendix G

World War II 1941-1945, pg.5

2010 Homel Food Sales, LLC "About SPAM Brand" SPAM Brand History. 2010. *SPAM*. 1, April. 2010. < http://www.spam.com/about/history/default.aspx>

Appendix H



Lower Meat Grades to Go Off Rationing

WASHINGTON — (UP) — With civilian meat supplies rapidly swelling in volume, the office of price administration announced today that one-third of all meats will be taken off the ration list next Sunday.

Chief items to become ration free with the beginning of the October rationing period are lower grades of beef, lower grades of veal and lamb, hamburger, sausage and luncheon meats. Canning and cutter are the names of the lower beef grades. Low grades of veal and lamb are classified as cull.

Pork, which is still scarce, will continue at its present point values for all cuts except pork hearts, livers and tongues, which will be ration free.

The better grades of beef, veal and lamb, particularly cuts such as steaks, roasts and chops, will retain their present point values. Other less favored cuts, such as short ribs, plates, flanks, shanks and breasts, will become point free regardless of grade.

Butter, margarine, lard and other fats and oils will retain their present point values. The OPA pointed out, however, that the public would have many more red points with which to buy them because fewer points will be needed for meat.

The same number of red points as usual—50 per ration period—will be issued to each ration book holder October 1. On that date red stamps R1 through V1 in war ration book four will become good for 10 points each. Red stamps V2 through Z2 expire September 30.

In addition to other red point changes for October, canned fish will go down two to three points on all varieties.

Rationed Meat, pg.5

rb_clipping-4.jpg. War Ration Clippings. *Genealogy Today*. 1999-2010. 12, April. 2010. < http://www.genealogytoday.com/guide/ww2/rb_clipping-4.jpg>

Appendix I

Guam Map, Flag, pg.5
28, April. 2010. <http://www.geographicguide.net/oceania/maps/guam.jpg>

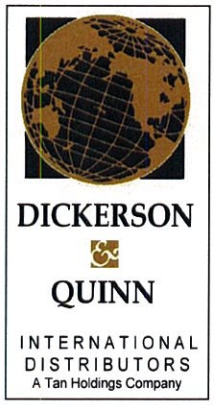
Appendix J

Hot & Spicy SPAM, pg.6
DickersonQuinn.art.2.jpg. 11, February. 2010. <http://www.dqguam.com/html>

Appendix K

Guam Liberation Can, pg.6
28, April. 2010. <http://farm1.static.flickr.com/5/5083835_939d707135.jpg>
spam.liberation.jpg. 14, February. 2010.
<http://scentofgreenbananas.blogspot.com/2004/10/guam-s-spam.html>

Appendix L



Dickerson & Quinn, pg.7
28, April. 2010.<http://www.dqguam.com/dqlogo3.jpg>

Appendix M

1 D&Q warehouse, pg.7
Palisoc, Shannon. IMG_0177.jpg. 30, March. 2010. Dickerson & Quinn Warehouse.

Appendix N

2 D&Q warehouse, pg.7
Palisoc, Shannon. IMG_0181.jpg. 30, March. 2010. Dickerson & Quinn Warehouse.

Appendix O

Matson Logo, pg.9
28, April. 2010. <http://www.matson.com/>

Appendix P

Horizon Lines Logo, pg. 9
28, April. 2010. <http://www.seeklogo.com/images/H/Horizon_Lines-logo-45CCFB7922-seeklogo.com.gif>

Appendix Q

Port of Long Beach Map, pg.9
29, March. 2010. <http://www.polb.com/facilities/maps/default.asp>

Appendix R

Gantry Crane, pg.9
Port Authority staff photographers GportA.3.bmp. 29, March. 2010.19, May. 2009. Port Authority of Guam 29, March. 2010. <http://www.portguam.com/community/photo-gallery>

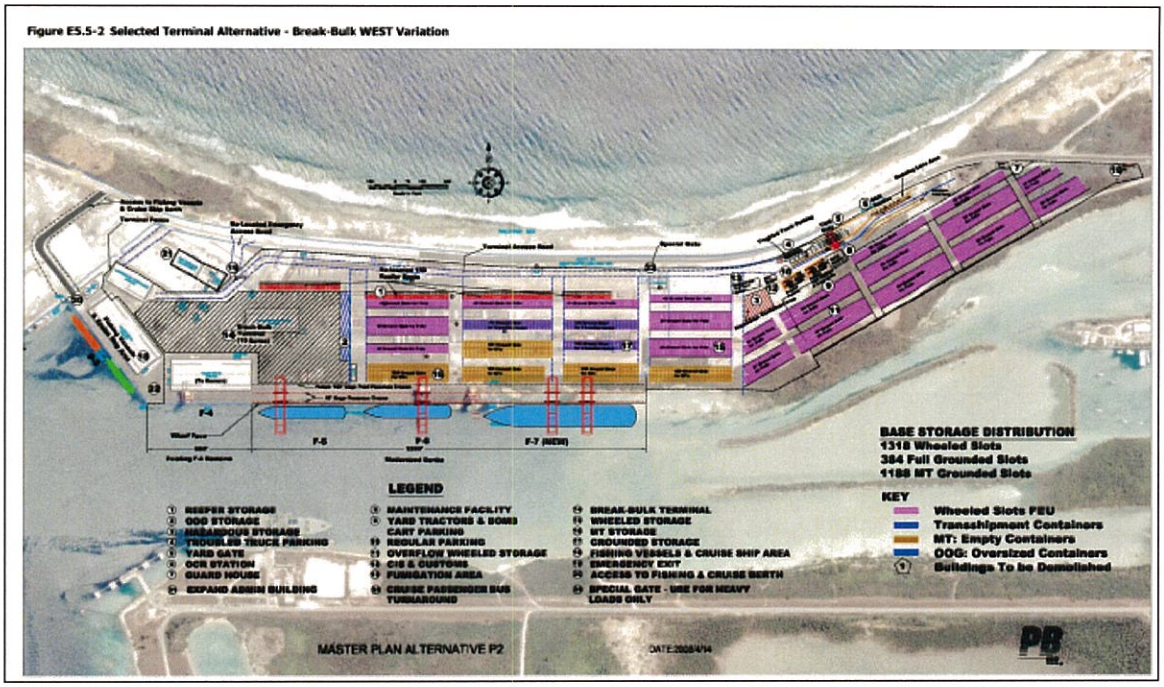
Appendix S

Gauge Container Crane, pg.9
28, April. 2010. <http://www.ncports.com/userfiles/070409-First-Lifts-page.jpg>

Appendix T

Chassis, pg.9
28, April. 2010. <http://www.entontechmeters.com/containerchassis1.jpg>

Appendix U



Port Authority of Guam, pg.9

Figure E5.5-2. 14, April. 2008. Port Authority Guam. selected-terminal-alternative.pdf. 29, March. 2010.

Appendix V

5 Guam Cranes, pg.10

Port Authority staff photographers GportA.14.bmp. 29, March. 2010.19, May. 2009. Port Authority of Guam. 29, March. 2010. <http://www.portguam.com/community/photo-gallery>

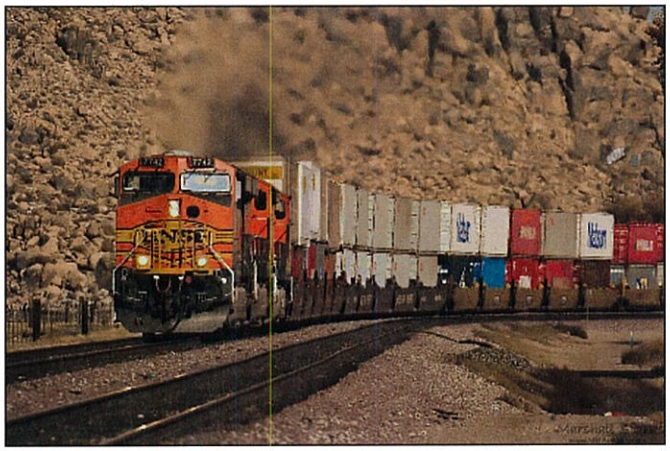
Appendix W

Hub Group Logo, pg.11
23, April. 2010.<http://www.hubgroup.com/>

Appendix X

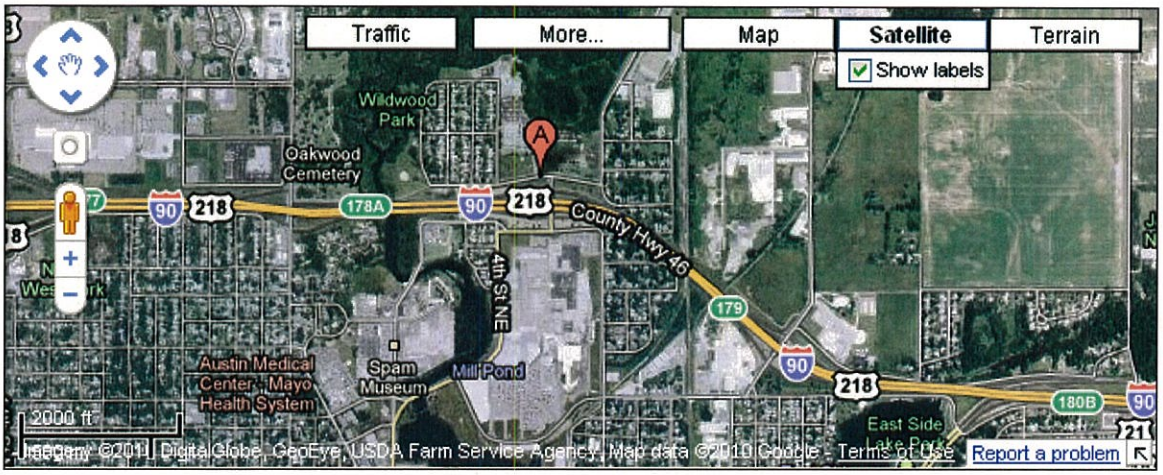
Ports, pg.11
utilizedports.bmp. 23, April. 2010.
<http://us.mc333.mail.yahoo.com/mc/welcome?.gx=1&.tm=1272009648&.rand=88l0tj10r38m0#_pg=showMessage&sMid=1&&filterBy=&.rand=266358485&midIndex=1&mid=1_>

Appendix Y



Stackcar Train, pg.12
stackcar.train.bmp. 23, April. 2010.
<http://us.mc333.mail.yahoo.com/mc/welcome?.gx=1&.tm=1272009648&.rand=88l0tj10r38m0#_pg=showMessage&sMid=1&&filterBy=&.rand=266358485&midIndex=1&mid=1_>

Appendix Z

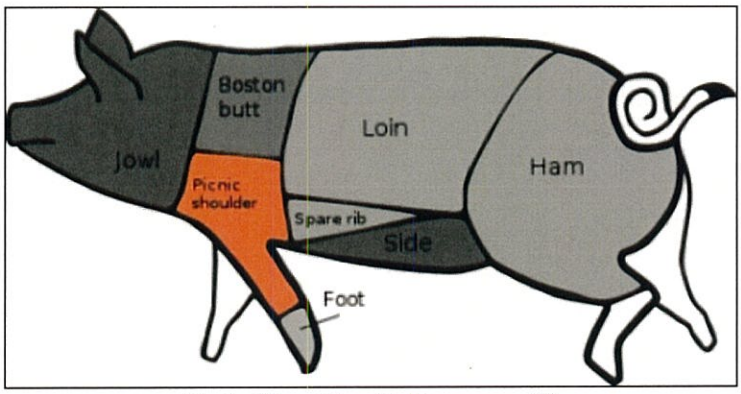


Hormel Plant Aerial View, pg.12
1Hormel.austin.MN.bmp. 25, January. 2010. <www.google.com>

Appendix A1

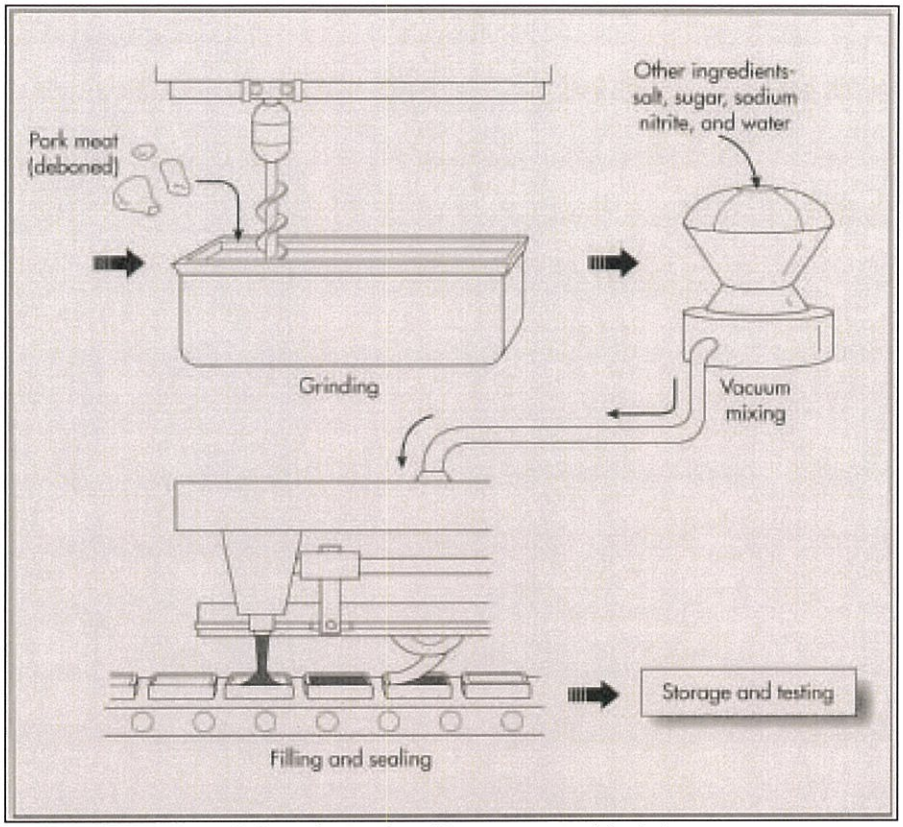
Quality Pork Processors Logo, pg.12
"Quality Pork Processors, Inc." Home. 2008. *Quality Pork Processors*. 11, April. 2010. <http://www.qppinc.net/>

Appendix B1



Pork Shoulder & Ham, pg.12
porkcut.shoulderdiagram1.jpg. 12, February. 2010. <www.google.com>

Appendix C1



Manufacturing Process, pg.13, 14
porkcut.shoulderdiagram1.jpg. 12, February. 2010. <www.google.com>

Appendix D1

SPAM Cans, pg.14
SPAM17. 1, April. 2010. <http://www.w0bsh.com/site/photos/SPAM_20031019/Spam14.jpg>

Appendix E1

Silgan Containers Corporation Logo, pg.16
28, April. 2010. <http://www.silgancontainers.com/>

Appendix F1

Rapid Bleed Out, pg.18
28, April. 2010. <http://www.all-creatures.org/anex/pig-slaughter-05.jpg>

Appendix G1

Additive Transportation, pg.19
"Potato Starch Food Grade" Starch. 1999-2010. DIY Trade. 1, April. 2010.
<http://www.diytrade.com/china/4/products/5708695/Potato_starch-food_grade.html>

Appendix H1

Silgan Containers Menomonie Wisconsin USA- 2pc Draw Redraw Line 105

300 Ton Press

7 Out / Lanes

Rate: 350 Cans per minute

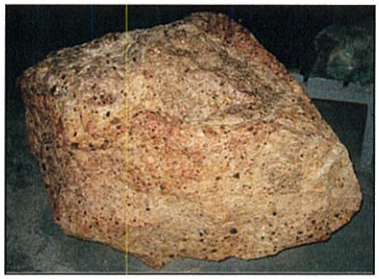
Size: 400 x 204 x 304 (rectangular Hormel Spam 2pc alum)

- Note- cans are first drawn into OVAL shape via first press to left not shown as shown on conveyor, then redrawn into rectangular shape, then final trim of flange.

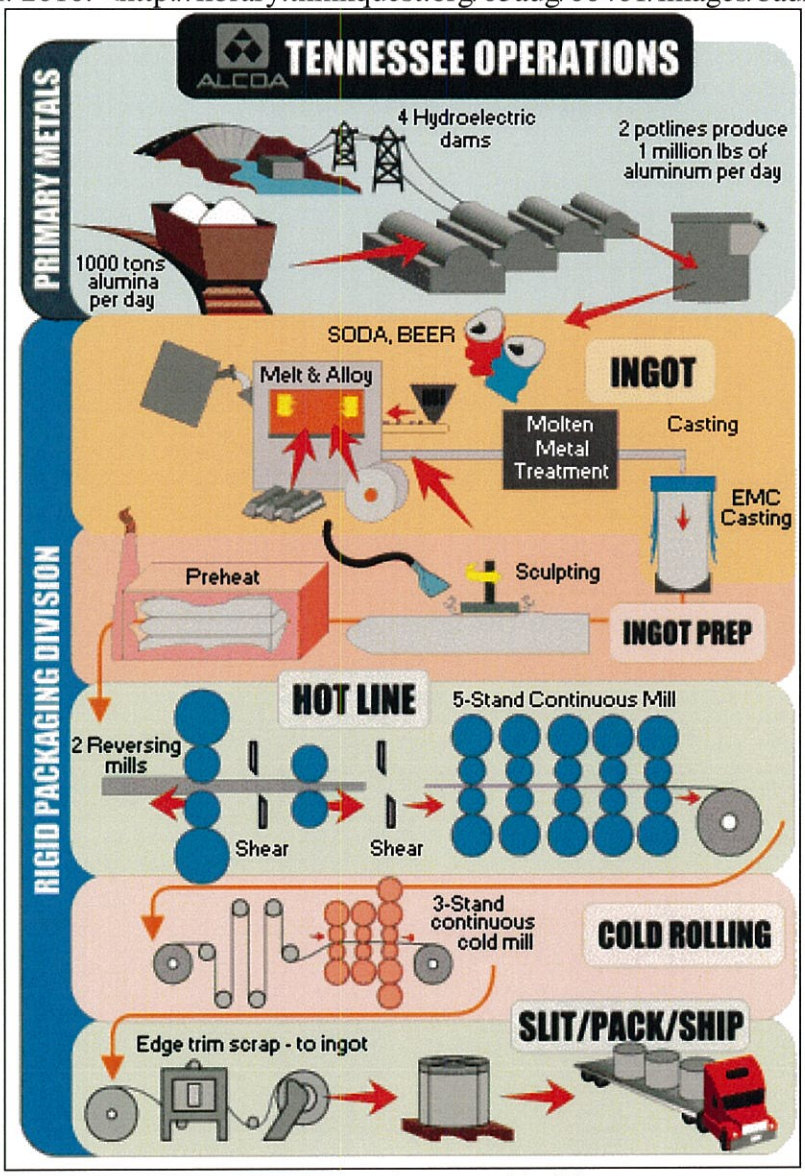
Silgan Containers Corp., pg.20

Silgan Containers Menomonie Wisconsin USA-2pc Draw Redraw Line 105. Silgan Containers Corporation. *Silgan Hormel Spam can line .ppt*. 25, April. 2010.

Appendix I1



29, April. 2010. <http://library.thinkquest.org/05aug/00461/images/bauxite.jpg>



Alcoa Operations, pg.20, 21

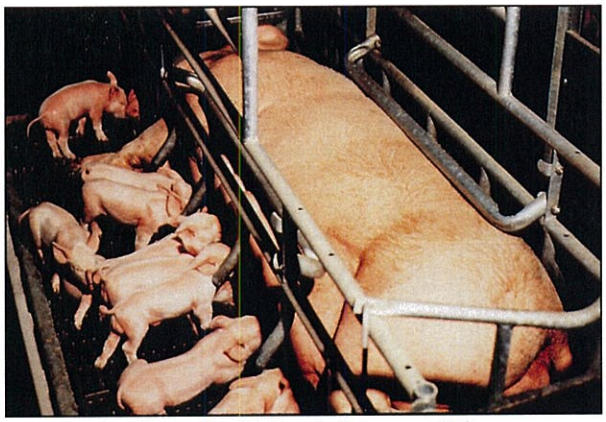
operations_map.gif. 4, April. 2010.
<http://www.alcoa.com/common/display/popframes.asp?bpath=/rigid_packaging/en/about/help_popup.asp&llang=en>

Appendix J1

SPAM Steps, pg.20, 21

SPAM14. 1, April. 2010. <http://www.w0bsh.com/site/photos/SPAM_20031019/Spam14.jpg>

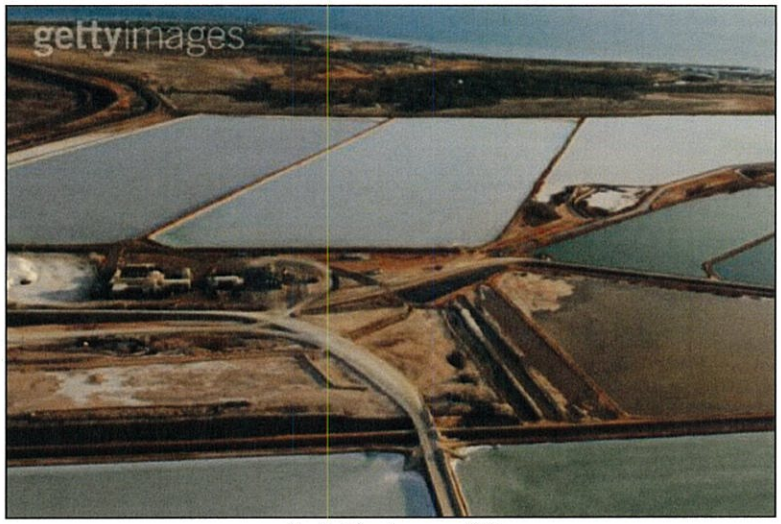
Appendix K1



Sow Stall & piglets, pg.24

28, April. 2010. <http://www.veganoutreach.org/whyvegan/images/PigsInFarrowingStalllg.jpg>

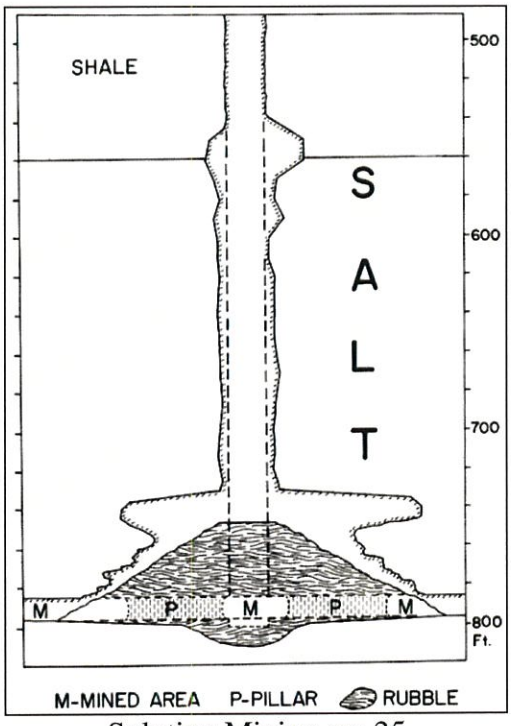
Appendix L1



Salt Beds, pg.25

84285430. Getty Images. 28, March. 2010. <http://cache1.asset-cache.net/xc/84285430.jpg?v=1&c=IWSAsset&k=2&d=6C4008C0FD9EB5A5BF47297999F72082F9C4E2021CA0579E7A35C5B379171564>

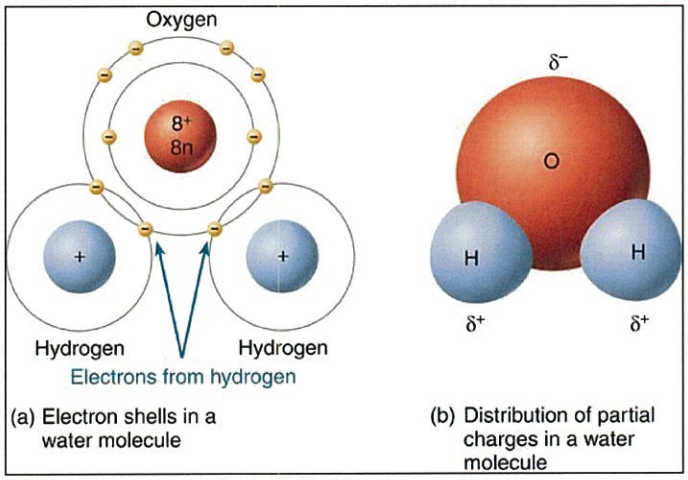
Appendix M1



Solution Mining, pg.25

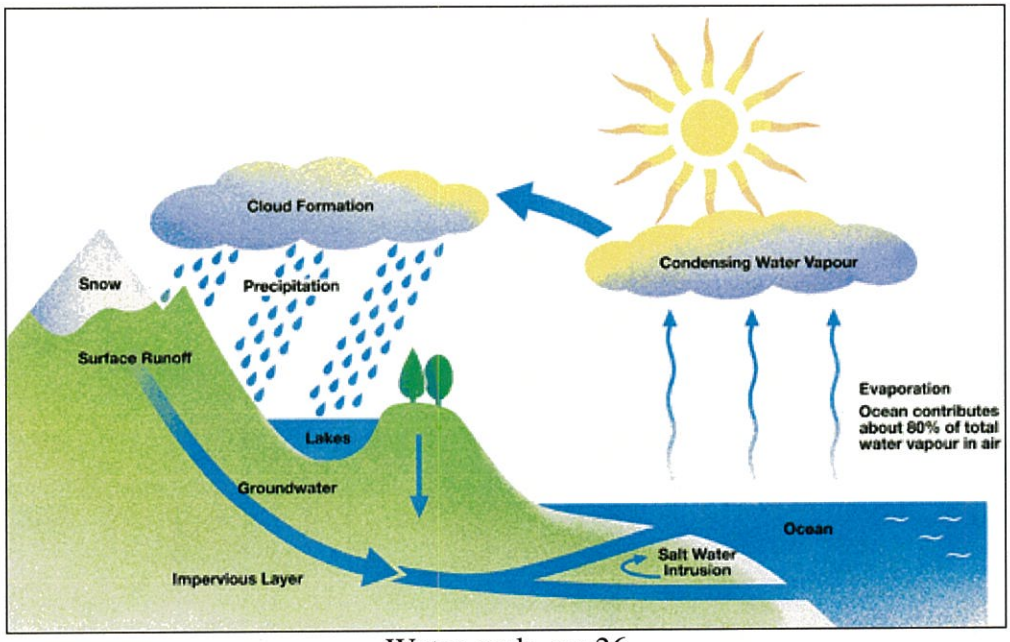
fig.15. 28, March. 2010. <http://www.kgs.ku.edu/Publications/Bulletins/214/gifs/fig15.gif>

Appendix N1



Water Molecule, pg.25
28, April. 2010. <http://rst.gsfc.nasa.gov/Sect20/water_molecules_con_c_la_784.jpg>

Appendix O1



Water cycle, pg.26
28, April. 2010.
<http://community.seas.columbia.edu/weatherstation/glo/images/diag_water_cycle_1.gif>

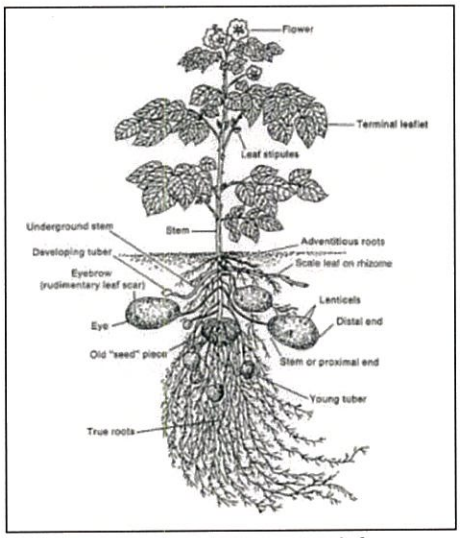
Appendix P1

Potato Starch, pg.26
18, April. 2010. <http://www.germes-online.com/direct/dbimage/50282938/Potato_Starch.jpg>

Appendix Q1

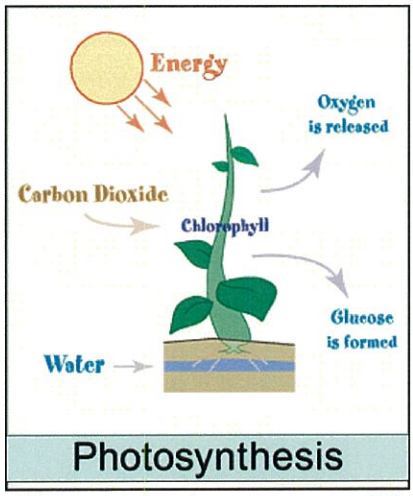
Potato Flowers, pg.26
2.jpg. "Potato blossoms on the Steve Leavitt Farm in Limestone, Maine, July 2003."18, April. 2010. <http://www.tateract.org/assets/pictures/galleries/potatoblossoms/Desktop-Pages/Image2.html>

Appendix R1



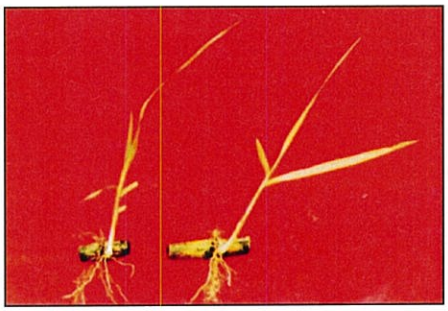
Potato Botany, pg.26
bda04s02-f1-1-1.jpg. 18, April. 2010.
<http://www.gov.mb.ca/agriculture/crops/potatoes/bda04s02.html#Growth_Stages_>

Appendix S1



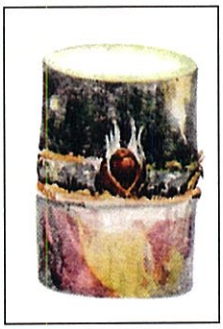
Photosynthesis process, pg.28
28, April. 2010. <http://www.hvrsd.org/chs/staff/guise/Webpage%20Pics/photosynthesisa.gif>

Appendix T1



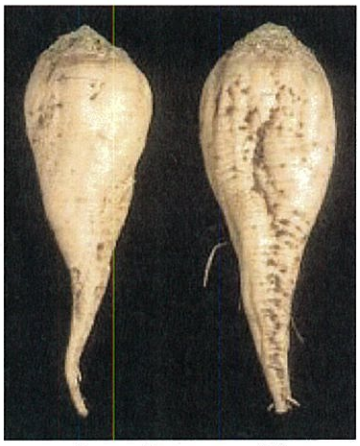
Sugarcane Setts, pg.29
25, April. 2010.<http://www.sugarcanecrops.com/agronomic_practices/planting_material/>

Appendix U1



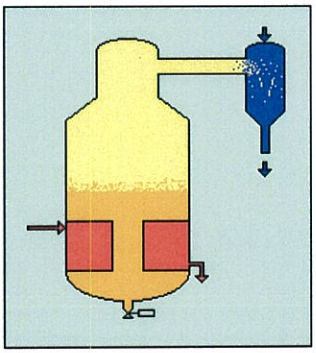
Sugarcane Bud Chips, pg.29
25, April. 2010. <http://www.sugarcanecrops.com/agronomic_practices/planting_material/>

Appendix V1



Sugarbeet, pg.29
25, April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>

Appendix W1



Boiling Sugar, pg.30
25 April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>

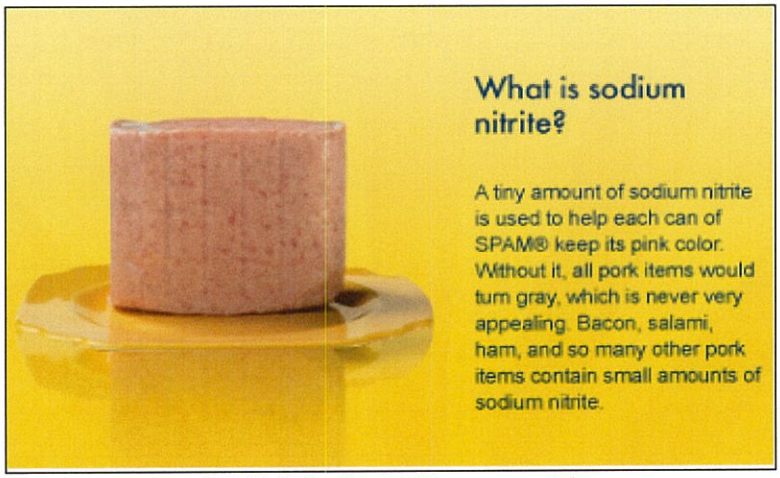
Appendix X1

Sugar, pg.30
25, April. 2010. <http://www.solarnavigator.net/solar_cola/sugar_beet.htm>

Appendix Y1

Sodium Nitrate, pg.30
640px-Chilisalpeter_%28Sodium_nitrate%29.jpg. 29, March. 2010. <http://commons.wikimedia.org/wiki/File:Chilisalpeter_(Sodium_nitrate).jpg>

Appendix Z1



SPAM Sodium Nitrate, pg.30
2010 Homel Food Sales, LLC "SPAM Facts & Trivia" Fun & Games. 2010. SPAM. 1, April. 2010. <http://www.spam.com/games/facts/default.aspx>