CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Development of Gardening Curriculum for Parents of Elementary School Students to Increase Children’s Fruit and Vegetable Consumption

A graduate project submitted in partial fulfillment of the requirements For the degree of Master of Science in Family and Consumer Sciences

By

Mirena Mendez

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DEDICATION

This Project is dedicated to:

My family, close friends and colleagues, who have supported me through my education. I thank you all for your constant encouragement.

Dr. Fajardo-Lira, who gave me the opportunity, guidance, and confidence to complete this project.

Participants and volunteers associated with this project. I hope that there will be an increased interest in the continuation of education for the reduction of childhood obesity.
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ABSTRACT

Development of Gardening Curriculum for Parents of Elementary School Students to Increase Children’s Fruit and Vegetable Consumption

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This project consisted of the creation of a parent centered in-class gardening manual that can be used for future nutrition and gardening programs in elementary schools. The research required for the design of these lessons included parent involvement and strategies in the nutrition of the child, parents and school gardens, health disparities, and cultural competencies. Research was conducted through the use of scholarly databases. A recurring theme in research was the importance of parent involvement in nutrition and gardening to aid in the increased consumption of fruits and vegetables in children. The curriculum that was created consisted of 8 in-class gardening bilingual (English and Spanish) lessons. The topics included: an introduction to the use of Woolly Pockets, container gardening, composting, fertilizing, growing herbs, growing foods to make salsa, growing foods high in calcium, and growing foods high in antioxidants. The lessons were designed to be culturally competent for the Hispanic/Latino population. The curriculum was then
used to teach gardening lessons to parents of elementary school age children in two schools in Van Nuys, CA.
Chapter I

Introduction

Background and Justification

The prevalence of childhood obesity and its correlation with an increased consumption of high energy foods cannot be denied. The weight measure of “obese” and “overweight” are caused by a long term positive energy balance occurring when energy intake outweighs energy expenditure (Lippevelde et al., 2011). Although no study has evaluated the effect of gardening and nutrition intervention on obesity measures (Davis, Ventura, Gyllenhammer, and Gatto, 2011), evidence has demonstrated that gardening and nutrition education improves dietary intake in children. An increase in the consumption of fruits and vegetables contributes to the prevention of coronary heart disease, stroke, and gastrointestinal cancers (Krolner et al., 2009). Since adult dietary behavior seems to be established in childhood, it is critical to involve parents in the promotion of higher intake of fruits and vegetables.

School has been the obvious setting for promotion of healthy eating through policies, curriculum, and healthy environments. Most school programs, created with the goal of increasing fruit and vegetable consumption, have had an average duration of 12 months. These programs increased exposure of fruits and vegetables in the entire school community, included teacher training and curriculum, and involved parents at school and at home (Knai, Promerleau, Lock, and McKee, 2006). Hence, it is clear that the parent component of school programs aiming to increase fruit and vegetable consumption among children is
crucial. Although nutrition professionals and nutrition educators have been highly involved in the success of various programs, the role of the parent is equally significant.

Often the education completed in school programs becomes limited once the child goes home. Behaviors encouraged in school may be different from behaviors encouraged at home. If the parents are unaware of healthy life style changes encouraged in school programs then they cannot perpetuate the positive behavior. Authors suggest that “parents who alter their consumption will likely modify the home environment to make fruit and vegetables available for the children,” (Knai et al., 2006). This indicates that family influences play an important role in the formation of children’s dietary behaviors (Larios, Ayala, Arredondo, Baquero, and Elder, 2008). Another concern related to the eating behaviors of children is parenting strategies. Parents may be unaware as to which parenting practices create a proactive structure for eating fruits and vegetables and which parenting practices are considered effective by health professionals and dietetic practitioners (O’Conner, et al., 2010).

Parents should be encouraged to participate in garden-based school programs and learn about positive parenting strategies to increase fruit and vegetable consumption. Through the participation of educators, heath professionals, dietetic practitioners, and parents, a significant contribution to the decrease of childhood obesity can be made.
Statement of the Problem

The purpose of the project is to develop an in-class and take-home gardening curriculum directed towards the parents of first graders and second graders at Cohasset and Anatola elementary school in Van Nuys, California, in order to continue gardening education at home. The ultimate goal is to increase fruit and vegetable consumption in elementary school children with the aim of reducing obesity and disease.

Objectives

The objectives of this project are as follows:

1. To develop an in-class and take-home gardening curriculum for parents of first and second graders as a continuation of an in-school school garden curriculum.

2. To develop a manual comprised of in-class and take-home gardening curriculum geared towards parents of first and second graders to be used as a resource for future school garden projects.

Assumptions

- All schools will have an established parenting center for parents to gather.
- All parent centers will cooperate in hosting monthly gardening classes for the parents.
- All parents of first and second grade students will attend monthly gardening lessons.
- All parents can read English or Spanish or both.
• All take home materials will be received by parents.
• All take home materials will be read by parents.
• All parents will have funds to purchase basic gardening supplies after instruction.
• All parents will participate in gardening activities with their children at home.
• All homes will have access to a window or balcony for at least 8 hours of sunlight.

Limitations

• This manual is designed specifically for parents of first and second grade students participating in school garden projects.
• This manual is created for school garden programs in urban areas, specifically Van Nuys, California.
• The manual created will predominantly be oriented to low income Hispanic families.
• Only parents with time to participate in events can be educated about gardening.
• Children are held responsible for take home materials.
Chapter II
Review of Literature

Introduction:

Parental involvement in school garden based education programs is crucial in making significant strides in increasing the consumption of fruits and vegetables in children. Several schools, along with nutrition educators, have implemented a parental component in school garden curriculums across the nation. It is evident that children who receive consistent messages through multiple sources, such as parents, teachers, peers, health professionals, and media, are more likely to adopt healthy behaviors (American Dietetic Association, 2003). Although classroom teachers play a key role in educating and promoting the consumption of fruits and vegetables, the success of each school garden education program depends on the additional role models in the home providing a supportive environment in which lessons learned in school can be implemented (McCormack, Laska, Larson, and Story, 2010). In the current review, the role of the parent, as well as the educator, will be highlighted. The following literature reviews describe the past and current documented roles of parents in various child nutrition programs and school garden education programs, as well as the importance of addressing cultural competencies when designing these programs.

Parenting Involvement and Strategies:

Since the prevalence of adolescent obesity has tripled over the last two decades, researchers have responded by further study of the influence of family. Currently, there is evidence suggesting that parenting style is associated with
obesity, dietary intake, and physical exercise (Berge, Wall, Loth, and Neumark-Sztainer, 2010). There are four classic parenting styles which are: authoritative, authoritarian, permissive, and neglectful. These styles are based on degree of responsiveness and degree of demandingness of the parent. This has also been described as warmth and nurturance versus control (Blissett and Haycraft, 2008). Responsiveness is to which extent a parent provides individuality, self-regulation, and self-assertion in their child’s needs and demands. Demandingness is the extent to which a parent cultivates self-control and responsibility in their child through parental supervision, rules, or structure and disciplinary efforts. An authoritative parent balances high levels of responsiveness with high levels of demandingness. They are appropriately demanding and controlling but also warm and responsive (Blissett and Haycraft, 2008). An authoritarian parent exhibits low levels of responsiveness with high levels of demandingness. Meaning they are highly demanding, over controlling, and emotionally cold and unresponsive (Blissett and Haycraft, 2008). A permissive parent expresses high levels of responsiveness and low levels of demandingness. Finally, a neglectful parent exhibits low levels of responsiveness and low levels of demandingness. Of these, authoritative style provides the structure and support needed for children to internalize and maintain positive behaviors, whereas the other parenting styles may interfere with children’s ability to learn self-regulation, including regulation of eating (Berge et al., 2010). Several cross-sectional studies have found association between authoritative parenting styles and lower youth body mass index, more frequent physical activity, and healthy dietary intake. A study by Rhee et al.
(2006) demonstrated that children of authoritarian, permissive, and neglectful mothers were significantly more likely to be overweight than the children of mothers with an authoritative style (Blissett and Haycraft, 2008). Authoritarian parenting carried the highest risk. This suggested that a strict unresponsive family environment may be associated with excessive weight gain in childhood (Blissett and Haycraft, 2008). Several studies have demonstrated that children consume greater levels of fruits and vegetables with authoritative parents. Although there are many gaps in current research, it is evident that there is a link between family, parenting styles, and child behavior, including the consumption of foods, such as fruits and vegetables has been established.

Two major contributors to healthful eating habits are mealtime experiences during early childhood and the “social meal,” or eating together with family and friends around a table (McCormack et al., 2010). An earlier research by Kremer, Brug, Vries, and Engles (2003) supports the hypothesis that parents play a large influence on their children through behaviors, such as exposing children to certain foods, serving as a role model, and parenting style. A limitation of this research was the relevance to younger school children, since participants in this study were in high school, which allowed them more freedom to make independent food choices. The study consisted of a questionnaire that was passed out to students. A limitation to this technique was that those surveyed could easily misrepresent the portion of fruits and vegetables they ate on a regular basis. A 17-item instrument was used to measure the parenting style dimensions of involvement and strictness. The research results indicated that students in an environment with authoritarian
parenting styles consumed more fruits and vegetables. Another limitation to this study was that there was no parent involvement in the survey. Although this research made a link between parenting styles and consumption of fruits and vegetables, there was no conclusive data.

The article by O’Conner et al. (2010) also addressed the impact of parenting practices on fruit and vegetable consumption but in younger children. Perceived effectiveness of fruit and vegetable parenting practices across six countries was measured by surveying the opinions of various health professionals and dietetics practitioners. Understanding parenting practices was an important step in understanding how to promote fruit and vegetable intake among children. The research used health professional collaborators from six countries who distributed an internet survey to health and nutrition organization members. The majority of these professionals counseled families on child feeding in a clinical setting. A total of 889 participants completed the survey. There were a total of 39 parenting practices that were categorized into three dimensions: the structure the parents created in the child’s eating environment, the responsiveness given to the child in the eating context, and the different types of control used by parents. The results of this study supported the hypothesis of fruit and vegetable intake related to parenting practices. Practices that provided control were perceived as ineffective or counterproductive, whereas practices that provided structure and nondirective control were perceived as responsive and effective. One limitation to this study was cultural differences. Each country had a different set of values and parenting practices that were regarded as appropriate or inappropriate. Results indicated that
parents do not use any of the parenting practices in isolation and there is also variability among health professionals and dietetics practitioners in perceived effectiveness. The study did demonstrate that there was substantial agreement among health professionals in most countries. Another major limitation was that the research was based on opinions and did not provide actual parenting practices that should be promoted to encourage child fruit and vegetable consumption. Although there was not a concrete conclusion on which parenting practices should be utilized, the article supported the hypothesis that parenting practices impact healthful eating behaviors in children.

Another example of parenting styles affecting school age children can be found in the research conducted by Vereecken, Rovner, and Maes (2010), which focused on children from age 3 to adolescent. Forty-six schools agreed to participate in this study. The child’s caregiver completed self-administered questionnaires on parent and child demographic characteristics, parent’s and child’s diets, and several aspects of general parenting styles, specific parental feeding practices, and child’s temperament (Vereecken et al., 2010). This research was unique in that it took into account the component of the child’s temperament. Thus far, no other research has completed this measure. A series of food frequency questionnaires were administered to determine children’s and parent’s fruit and vegetable consumption. 755 surveys were used in the final sample. A significant association was found between parenting styles with more supportive parents being less over reactive and less lax and more lax parents being more over reactive (Vereecken et al., 2010). The less over reactive parents included more
child centered feeding practices, while over reactive parents included parent-centered feeding practices. Results supported the hypothesis that a significant higher consumption of fruits and vegetables was found in children with less negative reactions to foods. This concept had not been previously expressed in many other studies. Many studies concluded that there is less consumption of fruits and vegetables among “authoritarian” parents. However, this study concluded that there was not a significant interaction between parent and child at $p < 0.01$ (Vereecken et al., 2010). The research was limited due to self-reported data as well as the fact that mothers with less education than a bachelor’s degree had a dropout rate of 16.4% from the study.

A review by Blissett (2011), concurred with O’Conner et al. and Vereecken et al., stating that poor consumption of fruits and vegetables in children is directly linked to a number of family environmental or parental factors, including little exposure to tastes in infancy, poor parental modeling and low parental consumption, low socio-economic status of parents and limited home availability of fruits and vegetables. A study by Gregory, Paxton, and Brozovic (2011), supported the hypothesis that maternal feeding practices may predict fruit and vegetable consumption in young children. This research was a 12-month longitudinal study of small children from 1 year to 2 years old. A self-reported questionnaire was used for mothers of the children to record anthropometrics, food consumption, food availability, and measures of maternal feeding practices. This posed a limitation because information was self-reported. This may have led to selective memory and exaggeration. The study focused on three feeding practices:
pressuring children to eat healthy foods, restriction of unhealthy foods, and modeling of healthy eating. Participants were also evaluated for education and BMI (body mass index). This research supported the hypothesis that pressuring children to eat more healthy foods has been associated with lower consumption of fruit and vegetable consumption (Gregory et al., 2011). A positive correlation was made between feeding practices and consumption of fruits and vegetables.

Parents and School Gardens:

School garden curriculum and nutrition educators often take into consideration the above correlation between parenting strategies and healthy eating food behaviors. Hence, a study by Wang, Rauzon, Studer, Marin, Craig, Merlo, Fung, Kursunoglu, Shannguan, and Crawford (2010) involved principals, teachers, parents, and students. This article reported findings from the first 2 years of a 3 year evaluation of a comprehensive, multicomponent, school-based intervention, designed to transform school lunches and offer education in nutrition, health, and the environment. The evaluation took place in northern California. The vision was to provide all students with healthy, appealing, seasonal school meals made from locally grown and sustainable ingredients, along with experimental learning in instructional gardens, cooking classes, and the school dining room, which connected to formal academic subjects. The study hypothesized that the students most exposed to the intervention would show greater increase in nutrition knowledge, show positive changes in attitudes toward healthy eating behaviors, including preference for fruits and vegetables, show positive changes in attitudes toward sustainable ways of producing foods, and consume more fruits and
vegetables outside of school after controlling for family sociodemographic characteristics. Student exposure to the intervention was determined by interviewing school staff, reviewing curriculum, and observing school environments. This research was more thorough than the previous studies due to the amount of participants that were involved (269 students). Also, various surveys were created to evaluate student knowledge, attitudes, and preference, student food behavior, and family characteristics. Family characteristics included family attitudes and behaviors in regard to food preparation and eating patterns. Parents and guardians of students were asked to complete a questionnaire that sought information about sociodemographic characteristics, and home environment, including family attitudes and behaviors with regard to food preparation and food eating habits. The questionnaire was then reviewed for wording clarity by research and school staff and a small convenience sample of parents. This was the extent of parent participation as far as the study included. This component measured family behaviors to healthy eating habits. This is one of the first evaluation studies of a comprehensive multicomponent school-based intervention that involves the community, uses prospective study design, as well as a rigorous dietary methodology to assess changes in the children’s diets, and adjusts for family sociodemographic characteristics (Wang et al., 2010). Findings of the research strongly supported the hypothesis that a comprehensive school district intervention that included regular attendance and hands on learning in the garden and cooking classrooms, in conjunction with a modified school meal program emphasizing
nutrition, environment, gardening, and cooking lessons can be effective in increasing fruit and vegetable consumption in elementary aged children.

One particular study, by Davis et al. (2011), specifically addressed the Latino population in Los Angeles, making it closely relevant to the current project. The study was a pilot study that was intended to measure the effects of a 12-week, after school gardening, nutrition, and cooking program, called LA Sprouts, on dietary intake and obesity in Latino fourth and fifth grade students in Los Angeles, California. 104 Latino children completed the program. Weight, height, body mass index, waist circumference, body fat, blood pressure, and dietary intake were obtained at baseline and post intervention. Children received classes and parents also received three separate 60 minute parental nutrition and gardening classes during the twelve weeks. These lessons were held at the elementary school and timed for when parents typically picked up their children. The material covered in the parent classes was related to what the students were learning in class. The nutrition lessons included: Introduction to LA Sprouts, Kitchen and knife safety, Types of fruits, colors, seasonality, Fruit health benefits and serving size, Adding fruit to your diet, Real food vs. packaged food, Reading ingredient lists, Healthy family dining habits, Conversation starters, Health benefits of fiber, Sources of fiber and serving size, Finding fiber on a nutrition label, High-fiber foods taste test, Natural vs. added sugar, Finding sugar on a nutrition label, Low-sugar drinks taste test, Role of vitamin A and C in the body, Sources of vitamin A and C, Importance of eating breakfast, Ways to eat a healthier breakfast, Shortcuts to make time for breakfast, Importance of eating lunch, Selecting a healthy school
lunch, Choosing healthy options at holidays and parties, and Review of nutrition topics. The gardening lessons included: materials needed for gardening and sowing seeds, introduction to documenting the garden process, sowing seeds, visit to farmers market, transplanting, using recycled materials for gardening, composting, mulching, identifying fruit and vegetable plants, watering, and harvesting of fruit and vegetables. The material was taught in Spanish. Parent classes were optional and not well attended. Attendance was the major problem because children had to be enrolled in the classes and parents were not interested in the adult education component. The study concluded that gardening, nutrition, and cooking intervention was a promising approach to improve dietary intake and lessen weight gain in Latino children. The study also concluded that one of the limitations was that the program did not have a strong parental component. Researchers decided that future research would need to be conducted that included a strong parental and family component (Davis et al., 2011).

Health Disparities and Cultural Competencies in the Hispanic Population:

The Hispanic population is the largest and fastest growing minority population in the United States. It is projected that 24% of the U.S. population will be Hispanic by 2050. In particular, Los Angeles is one of the few cities where foreign-born individuals constitute a majority with 40%-50% being of Latino descent. Latinos have the highest rates of obesity in Los Angeles (Davis et al., 2011).

This population also has well-documented health disparities. Obesity is the most prevalent and apparent. According to NHANES (National Health and
Nutrition Education Survey) obesity trends from 1976-2006 increased for all ethnicities, with the highest prevalence among Hispanic youth. 19% of Hispanic children age 2-5 were obese in 2006. The likelihood of a child becoming obese by the age of 3 is higher among Hispanics than non-Hispanic black or white children. Recurring themes in the literature include prolonged bottle feeding, preference for heavier babies, influence of extended family, breastfeeding with formula supplementation, and influence of acculturation on the diet (Houston, Waldrop, and McCarthy, 2011). According to a review of the literature by Houston, Hispanic mothers tend to have overweight babies. Latino mothers are less likely to perceive their child as overweight and express a preference for heavier infant and child body size. Mothers believe that a “chubby baby is a healthy baby”. There is a general consensus that Latinos believe that health is defined by one’s level of happiness. If the child is happy, this indicates that the child is healthy, even if the child is chubby. Houston et al. reviewed research by Crawford, Gosliner, and Anderson, et al. (2004), which indicated that mothers reported concern for thinness, believing that a little extra weight helps children fight infections, while thin children are more prone to illness. This study supported the hypothesis that children are pushed into obesity at a young age in Latino families. When shown photos of different sized babies, Mexican mothers preferred the heavier infants more than other ethnic groups. Another contributing factor is that Latino mothers encourage their children to eat a lot of food and finish their plates, often offering bribes and threats to get their children to eat. It is because of these misconceptions of weight that it is becoming increasingly necessary for providers to understand
how to administer culturally and linguistically competent care to these patients and their families (Houston et al., 2011).

This same conclusion was described in a study conducted on “Maternal Perception of Child Weight Among Mexicans in California and Mexico” (Rosas, Harley, Guendelman, Fernald, Mejia, and Eskenazi, 2009). This study took into consideration perceptions of mothers and the weight status of their children. Mothers underestimated their children’s weight to a greater degree if the child was at risk for being overweight or underweight compared to normal weight. Mothers wanted their children to be smaller overall, but mothers of normal weight children wanted them to be bigger and mothers of overweight children wanted them to be smaller in the group of mothers from California. Mexican mothers also preferred that their children be larger than they currently were. The study found that immigrant mothers in the US were more likely to underestimate their children’s weight than mothers in Mexico. Also, mothers living the US wanted their children to be smaller than they currently were and the mothers in Mexico wanted their children to be bigger than they currently were. This finding generated the hypothesis that immigrants may retain the cultural preference for larger children in the U.S. to a certain extent (Rosas et al., 2009). This is consistent with the study by Hackie and Bowles (2007) which found that 61% of mothers in the sample did not identify their children as being overweight.

A more in-depth study also examined perceptions of weight status in Latina mothers by the use of the Latina Mothers’ Child Feeding Practices (LMCFP) (Lindsay, Sussner, Greaney, and Peterson, 2010). LMCFP sampling criteria
included: Latino ethnicity, living in the greater Boston urban area, speaking Spanish as the primary language in the home, and having delivered a live-born baby in the past 48 months. This study developed a focus group guide to identify Latina mothers’ perceptions of their own and their child’s weight status, definition of overweight, child feeding beliefs and practices related to overweight, and the role of sociodemographic, sociocultural, and feeding environment influences on mothers’ child feeding. Preliminary analysis revealed key themes related to physical activity, sedentary behavior, and the influence of child care on mothers’ feeding practices and children’s eating habits (Lindsay et al. 2010). Most participants reported personal struggles with weight gain and obesity. Mothers reported feeling depressed and isolated, as well as facing social embarrassment from their family and friends. Their motivation to lose weight was triggered by others telling them that they were overweight. This indicated that mothers were not often sensitive to identifying a weight problem amongst themselves and their children. Mothers struggling with their own experiences of overweight and obesity expressed greater concern that their children would become obese. The mothers in this study also spoke of cultural influences that equate having a chubby child with being a good parent. Several mothers also spoke of the grandmothers’ perception of their children being too skinny even when their children were at normal weight (Lindsay et al. 2010). Mothers expressed that they were aware that chubbiness in infants and toddlers may set the stage for the development of being overweight in later childhood, which is a common theme in all Hispanic childhood obesity articles. They explained that their parents taught them it was important to eat a
hearty amount of food in order for children to grow up strong and healthy. Another issue was grandmothers challenging eating habits set at home by giving children foods they were not encouraged to eat at home. The design of this study was strong due to the many themes it focused on. This is one of the few studies in the literature that took into consideration all the aspects of culture that may affect feeding practices and weight status. It can be understood then that there are many cultural factors in the Hispanic population that affect weight status of children and perceptions of weight status.

Another family oriented concept that makes Hispanic/Latino education challenging is the traditional family structure of this particular culture. For Hispanics/Latinos, loyalty to the extended family is more important than the needs of the individual, a concept known as familismo. Hispanics/Latinos seek encouragement, direction, and advice from a large number of family members. Although familismo is an important motivator for disease self-management, it can also make it difficult to make independent decisions (Caballero, 2011). If one member does not want to make changes in their diet, then the others will not make changes in their diet. This can affect both the immediate family and extended family.

The diets of Mexican-American children are high in fat and low in fruits and vegetables (Matheson, 2008). In this study, 79% of Mexican-American children ate more meat than recommended in the Hispanic Health and Nutrition Examination Survey. Overweight Latino youth have excessive visceral fat and more than 30% have diabetes and metabolic syndrome. This is due to low intake of
dietary fiber, especially fruits and vegetables, along with high consumption of refined grains and added sugar (Davis et al., 2011). Diets may be different due to the level of acculturation a family has experienced. Matheson shows that highly acculturated Mexican-Americans consume fewer fruits and vegetables and have a higher fat intake than their less acculturated peers. As families acculturate to the American diet, increased fat intake is in part attributed to the use of added fats, such as butter on breads or vegetables and the use of salad dressing.

The NHANES of 1988-1994 survey revealed that Mexican-American women who were born in Mexico consumed more fruits, vegetables, grains, and legumes while consuming less salty snacks and desserts than Mexican-American women born in the United States (Matheson, 2008). A study in New York City conducted by Park, Quinn, Florez, Jacobsen, Neckerman, and Rundle was able to compare individual perspectives of healthy foods in Hispanic immigrant women. This study demonstrated the reasons why first generation immigrants have a lower body mass index than second and third generation immigrants. Women who were born in their Latin countries were more focused on the concepts of purity and freshness. Many of the qualities were measured against the foods they ate in their countries of origin. These foods were described to be healthier than foods available in the U.S. Pure foods were defined as those produced naturally without the use of pesticides and hormones. Fresh foods were those having little distance between production and consumption. Women of rural origin were more likely to describe diets comprised of home-grown foods. These women also liked to use Farmer’s
Markets (Park, 2011). It is clear that acculturation plays an important role in food choices.

One particular review by Lopez-Class, Castro, and Ramirez (2011) specifically gathered information on acculturation. They deemed that overall it was difficult to measure acculturation. However, with the increasing diversity of the United States it was considered an important factor in making healthful food choices. Certain behaviors, attitudes, and values prevalent within the American society may depend on the availability of healthy and unhealthy products in the Latino communities (Lopez-Class et al., 2011). Food access is influenced by where one lives and by race. Research points to the importance of neighborhood environments on dietary health.

Consumption of foods depends on how accessible certain foods are. Availability is affected by the socioeconomic and demographic characteristics of families, families’ attitudes toward and interaction of surrounding food, and the social context of food messages (Matheson, 2008). Families that are food insecure lack the ability to buy foods that are nutritious. Food insecurity assessments have indicated that 59% of Hispanic children are food insecure. Hispanic women rated high food prices and not enough money for food as the most important factors affecting their food choices (Matheson, 2008).

Studies have shown that the area where an individual lives is a major contributor to decreased access of fruits and vegetables. Low-income communities are the communities most affected by food environment. These communities are at risk for obesity and have limited access to grocery stores and supermarkets while
having increased availability to fast-food stores (Galvez et al., 2009). In a study conducted in East Harlem, NY, a low income community, of three hundred twenty-three children, age 6-8, participated in a study correlating food environment and childhood obesity. The participants of this study were 67% Hispanic, which seems to be the trend in high obesity, low-income populations (Galvez et al., 2009). The results of this study indicated that 40% of the girls and 50% of the boys had BMIs above the 85th percentile for age and gender, according to the Center of Disease Control and Prevention growth charts. Convenience stores were present in 55% of the census blocks and fast-food restaurants were present in 41% of the census blocks. 66% of the children lived in census blocks with no specialty stores, grocery stores, or restaurants. Although this study concluded that there was no statistical significance between BMI and number of specialty stores, grocery stores, supermarkets, fast-food restaurants, or restaurants, due to a small sample size, it is relevant to note the food environment in a low-income community. The study did find that presence of convenient stores on a block was associated with an increased BMI (Galvez et al., 2009). A lack of access to healthy, affordable, high-quality foods characterizes a food desert in these areas of inner cities. A recent study in East Los Angeles, also determined that where the majority of residents are Latino and of low socio economic status, only 18% of grocery stores sold fresh fruits and vegetables of quality. This poses a problem for low-income Latino families to maintain a healthy balanced diet (Davis et al., 2011).
A different view can be found in the longitudinal study created by Lee which examines the growth and decline in food source types related to the shifts in children’s weight-for-height stature. Lee created five categories of food establishments intended to capture food environment, which previous studies had not compiled. The five food establishment categories were supermarkets/large scale grocery stores or supermarkets, corner grocery stores, convenience stores, full-service restaurants, and fast-food chain restaurants. Lee divided the grocery stores into three categories: supermarkets/large scale grocery stores, which made at least $2 million in annual sales, mid-size grocery stores, which made less than $2 million in annual sales, and corner stores, which are categorized as grocery stores but operated by 3 employees or less (Lee, 2012). Convenience stores were defined as establishments with limited goods, full service restaurants, which were defined as “food services to patrons who order and are served while seated, and pay after eating,” and fast food restaurants which were defined as “limited service restaurants.” The results of this study indicated that by the time the children reached the spring of fifth grade, BMI had increased notably in low-income minority children. Lee found that the weight gain outpaced height growth. Children who reside in low-income areas also have greater access to fast-food establishments and convenience stores, which is a finding consistent with previous studies. However, this study found that these same communities have higher access to large-scale grocery stores and full-service restaurants. The study concluded that food availability did not significantly impact BMI. Moreover, what
seems to be significantly protective of weight gain over time is maternal education, which leads back to the importance of parent education (Lee, 2012).

This is not so say that the food desert is non-existent in certain low income, minority communities. Hence, in order to fill this void, there needs to be more access to fruits and vegetables for these communities. Promoting the creation of school gardens is an important component of developing healthy communities. A constant supply of fresh fruits and vegetables enhances the participants’ food security. Although school gardens have not been included in food security research, school gardens are considered community gardens. The community in turn will experience increased food security since gardeners donate 50% of their produce to the neighborhood (Corrigan, 2011).

**Summary and Conclusion:**

From this literature review there is a recurring theme which leads to the conclusion that garden-based school nutrition programs are indeed needed and beneficial for elementary school aged children to increase consumption of fruits and vegetables. Literature indicates that a higher rate of fruit and vegetable consumption decreased obesity rates.

Children were more likely to try new foods based on the combination of both in class nutrition education and hands on gardening experiences. However, these new habits must be also encouraged at home. There is a consensus among a majority of the literature that in order to maintain the positive results from school programs, parents must also be involved. This includes adult education in language of country of origin and consideration for many cultural beliefs and values. The
Hispanic population in particular has certain cultural components related to perceptions of healthy weight in children that can prove challenging when implementing nutrition and garden education programs. The literature also agrees that parents are the necessary role models in the home that should encourage healthy habits. It is also known that parenting styles have a large influence over food choices in the home. Authoritarian parenting styles, which are associated with excessive pressure to eat, are viewed as unsuccessful in the maintenance of healthy food choices in the home. The evidence seems to suggest that authoritative parenting styles, which are associated with emotional warmth and responsiveness, along with high expectations of children’s behaviors, is associated with better consumption of fruits and vegetables. Overall, it is the combination of garden-based nutrition education for children and parents as well as the interventions within families that will successfully increase the consumption of fruits and vegetables. In turn this may address the current childhood obesity epidemic.
Chapter III

Methodology

The purpose of this project was to develop an in-class garden curriculum for the parents of first and second grade students in order to help reduce childhood obesity. The in-class curriculum was designed to educate parents about gardening and nutrition as well as to motivate parents to involve their children in healthy activities. The goal was for parents to learn about gardens to compliment the curriculum their children were exposed to in the classroom in order to continue the education in the home. This component is important because the children cannot continue habits formed at school without the support of their families. The adult curriculum was also determined by a needs assessment and by the level of gardening knowledge the parents had. After the needs were established, lessons were extensively researched, developed, and put into a cohesive format.

Needs Assessment

The needs assessment for the development of the curriculum was primarily conducted through internet research. A collection of scholarly literature on the implementation of school gardens in elementary schools was reviewed and analyzed for content. These articles were then analyzed for parent involvement. Parent involvement was determined by surveys parents had completed, activities parents had been involved in, and newsletters that had been sent to parents. Other sources of information were academic university websites that had established a gardening program of their own. The prevalent topics in the literature and current
programs were taken into consideration during the development of the lesson plans.

Development of Lesson Plans

Extensive research was conducted to find the most appropriate lesson plans for the students; a majority came from internet searches for “elementary school garden lesson plans,” “parenting style and food,” “Latinos and childhood obesity,” culture and childhood obesity,” “parenting and gardening,” and “gardening and obesity” followed by references from websites such as the University of Maryland, University of Illinois, Michigan State University, Colorado State University, and Cornell University. The internet search topics were “adult garden education” and “how to container garden,” “how to compost,” “how to make your own seeds,” “foods high in antioxidants,” “herbs and gardening,” “Hispanic cultural foods,” “produce and seasons,” “vegetables high in calcium,” and “salsa vegetables.” These searches then led to information on beginner gardening. This included information that ranged from where to set up a garden to how to harvest. The lessons in the project were also designed to incorporate garden education and nutrition education into parenting education. To the best of our knowledge, there was no prior parent curriculum created. Although many education sites indicated the importance of the role of parents in school garden projects, none had established a series of lessons for parents. Many programs did not have access to parent centers as a method for educating parents. The lessons were intended for beginner gardeners as an introduction to the garden project their children were
participating in and also as a means to continue the education at home by cultivating a family garden.

**Lesson Plan Content**

The parent education followed the child education in the parent centers of two schools located in Van Nuys, CA. These schools were Cohasset Elementary and Anatola Elementary. Cohasset was the first school to have the parent gardening lessons. In total there were 8 lessons planned with two pre-lesson gardening brochures. The lessons began in fall of 2011 and ended fall of 2012. The parent education did not follow the exact timeline as the child education. An introduction to the entire project was the first lesson that the parents received in fall of 2011 only at Cohasset Elementary. There were two supplementary topics on “how to grow carrots in a container” and “how to grow zucchini in a container” but these were not considered part of the main eight lessons. These were pre-lesson materials to send home with children. In the spring of 2012 the following lessons were implemented at both schools:

1. First and Second Grade Gardening Project

2. Setting Up Your First Container Garden

3. Seeds and Composting

4. Feeding Your Plants

These lessons were also introduced at Anatola Elementary in the spring of 2012. The same lessons were used at both schools. However, parents at Cohasset
participated more than the parents at Anatola. Parents at Cohasset attended every lesson while parents at Anatola attended only one lesson. They were preoccupied with the other parts of the program which were exercise and nutrition. A follow up semester to implement the lessons at Anatola was allotted.

In the fall of 2012, four more lessons were designed for parents at Cohasset and Anatola:

1. Herbs, Gardening, and Nutrition
2. Antioxidants Benefits
3. Salsas and Your Health
4. Calcium: Don’t Forget Your Greens

This semester, parents at both schools participated although the parents at Cohasset still participated more. This semester a colleague collaborated on the project and was able to make improvements on the program including assistance with teaching and creation of the lessons. There were a couple of problems with the dates of the lessons scheduled. On the date of the last lesson at both schools Northridge Hospital also scheduled a nutrition class at the same time and therefore my colleague and I were unable to teach the last lesson because afterwards parents were unable to stay to participate in the lesson due to strict schedules. At Anatola all classes of the program were scheduled on the same day and parents did not have to make several attempts to attend classes on different days during the week, which proved to be more efficient.

Changes were made for the lesson plans at Cohasset from the fall of 2011 to the spring of 2012. The first semester, the lesson plans were not structured
enough. The following semester parents were given four lessons with the main goal of teaching beginning gardening. The lessons started from planting a seed and continued through the harvesting process. This allowed for a structured understanding of growing vegetables from start to finish. In the fall of 2012 new lessons were created incorporating food and nutrition. This was created in order to create a more cohesive program between all the components of the HUD grant including nutrition and gardening. This project is to be continued and evaluated for the course of one more semester by other personnel associated with the grant.

**Lesson Plan Format**

The main goal of this project is to create a manual consisting of lesson plans that can be used as a reference guide for elementary schools that would want to implement an in-class garden education curriculum for parents to use with their families. With this goal in mind, a template was created for these lesson plans. Each of the adult lesson plans included the following sections:

- **Objective**: Describes what the parents will be learning.
- **Gardener Level**: Determines what the appropriate level of gardening skills is, which in this case was for beginner gardeners.
- **Materials**: Lists all the necessary materials that will be needed in order to implement the lesson and any supplemental materials that were used.
- **Procedures**: Instructions are provided in order to administer each lesson.
- **References**: List of resources that were used and provided with the lessons.

The parent lessons were created partially in the fall of 2011 and mostly in the spring of 2012 and fall of 2012. The adult lessons required another revision for the
continuation of the project in fall of 2012. However, since the program continued
at the same two schools with no addition of new parents, new lessons were
created. The new lessons addressed the timeline of child and parent education.
Ideally, the topics the children are learning should immediately be followed by
parallel parent lessons so that both child and parent can have similar experiences
and be able to continue the education in the home. The revised lessons and new
lessons are included in the manual after a final revision in the fall of 2012. The
goal is to incorporate all aspects and of this project into one large manual for
schools to use. This will include both child and adult lessons regarding nutrition,
gardening, and exercise. This project has further revisions to be completed as a
whole to form a cohesive manual.
Chapter IV

Results

Over the course of three semesters a total of 30 parents attended each class at Cohasset Elementary and a total of 15 parents attended each class at Anatola Elementary. A total of 8 lessons were planned to be taught at each school. However, due to unforeseen circumstances, the last lesson at the end of each semester was not taught. During the first semester, the last lesson was carried over to the following semester. This could not be completed at Cohasset Elementary the last semester because another school was schedule to receive gardening education instead of Cohasset Elementary. There was more interest and parent participation at Cohasset Elementary than at Anatola Elementary.

The first lesson to be taught was titled “First and Second Grade Gardening Project.” This lesson consisted of introducing HUD sponsored program. Material covered was an introduction to Woolly pockets, the funding provided by the Marilyn Magaram Center for the program through the Department of Housing and Urban Development grant, participants in the program, a description of child curriculum, and examples of parent involvement. The focus of this lesson was to introduce parents to the project and promote parent participation. The parents were then given a tour of the Woolly pockets and given an opportunity to ask questions about the project. At Anatola, the parents were given starter plants to promote gardening. In this lesson it was important to convey the impact that a parent can make in the health of a child.
Lesson two was titled “Setting Up Your First Garden.” This lesson covered the location of a garden, container gardening, soil, and soil nutrients. Location was to be anywhere with enough sunlight. Enough sunlight was defined as a spot with at least five hours of direct sunlight, although 8-10 hours was preferred. Reflective materials to provide more sunlight, such as aluminum foil and white surfaces to increase sunlight exposure were also covered. Both indoor and outdoor locations were covered such as: door steps, balconies, patios, walls, window sills, kitchen counters, and backdoors. Examples of containers to be used were: gallon buckets, gallon milk jugs, two liter soda bottles, garden pots, soil bags, and baskets. These containers could be made of clay, wood, plastic, metal or cloth. The size of the container was to be large enough to support plant, hold soil without spilling, have adequate drainage, and have never held products that would be toxic to plants or people. Soil was to be a light weight potting mix. The soil was to be porous and purchased from a local gardening store or created at home. A recipe for a container soil mixture was included. Soil nutrients were also mentioned by introducing the topic of composting, which was then addressed in the following lesson. Containers and soil were provided during this lesson to be taken home. Parents were taught how which containers to look for and to place soil in a container without packing it down to allow the most air circulation for the roots.

The following lesson was titled “Seeds and Composting.” This lesson covered how to save waste from previously purchased food to use in a garden and materials to use for composting. Instructions were provided to dry out seeds and promoted by addressing low cost of the materials. The lesson began by demonstrating how to
take seeds out of a tomato. Tomatoes were purchased for parents to take home. The demonstration included instructions on scooping the seeds out of the tomato and letting them sit in water until the seeds detached from the flesh of the tomato. The seeds were to be washed, transferred to a dry location, dried for approximately three weeks, and then stored for use in an airtight container. Parents were given dried pumpkin seeds as an example. Next, composting materials were addressed. A container full of composting materials that had partially decomposed was brought in as an example. Brown and green materials were covered. Brown materials were described as dry leaves, woody stalks or plants, paper or wood products, dryer lint, and straw. Green materials were described as kitchen scraps such as vegetables, egg shells, and fruit, coffee grinds, fresh leaves, fresh grass, and composted manure. These materials were accumulated by the educator to show an example of compost and displayed for parents to view. Parents were then given plastic bags to take home to serve the purpose of seeds and compost.

Lesson four concluded the first semester and was titled “Feeding Your Plants.” This lesson covered the difference between compost and fertilizer and three ways to make fertilizer. Fertilizer was defined as added nutrients that may meet the needs of the plant but may prevent microbe growth, which is essential for healthy soil. Compost was defined as added nutrients that promote growth of healthy microbes in the soil. The use of fertilizer and compost together was encouraged. The three fertilizers discussed were egg shells, coffee grounds, and banana peels. Egg shells were suggested as a fertilizer to be cleaned, crushed, and sprinkled around plants for the plant to absorb the nutrients. Coffee grounds were proposed
as a fertilizer by taking one tablespoon and mixing it into the soil of potted plants. Lastly, banana peels were proposed as a fertilizer by planting the peel near the roots of the plant, placing the peel above ground to let it decompose, or blending the peel with water to be poured over the plant. Egg shells and coffee grounds were collected to be given to parents for use in their garden. Egg shells were crushed in class. Coffee grounds were distributed to the parents. Parents were given bananas as a snack and plastic bags to take home the banana peels for use in their garden.

The following four lessons combined nutrition and gardening. An additional educator participated in gathering nutrition information. The plan for the additional educator was to incorporate nutrition into gardening and each lesson focused more on food than it did gardening, although the gardening component was still present. These lessons also had a cultural competency component.

The fifth lesson was titled “Herbs, Gardening, and Nutrition.” The lesson described seven herbs used in Hispanic cultures, how to grow these herbs, and nutrition provided by the herbs. The seven herbs were basil, cilantro, spearmint, oregano, parsley, rosemary, and thyme. For each of these herbs growing conditions and instructions were provided. Nutrients provided by the herbs, such as vitamin A, vitamin K, vitamin C, Iron, Manganese, and folic acid were discussed. Three recipes were provided to the parents as well as a description of five reasons to grow herbs. Parents were provided with soil, pots, and herbs to plant and take home.
Lesson six was completed by the second educator. This lesson was titled “Salsas and your Health.” This lesson provided quick facts about chilies, recipes, and nutrients associated with salsas. Quick facts informed parents of cultivation, uses, and health benefits of chilies. All the ingredients were listed along with nutrients. Ingredients discussed were chilies, tomatoes, green tomatoes, onions, cilantro, garlic, olive oil, and black pepper. Nutrients associated with these ingredients were vitamin C, vitamin A, vitamin K, iron fiber, phosphorous, potassium, magnesium, calcium, folic acid, and fiber. Parents participated in lesson by answering questions and sharing their own salsa recipes. A salsa snack was then provided for parents along with tortilla chips. Parents were encouraged to use salsas in cooking and snacks.

Lesson seven was titled “Calcium: Don’t Forget your Greens,” and was created by both educators. This lesson featured all green vegetables but focused on kale. This lesson covered growing kale, quick kale facts, benefits of kale, a kale recipe, calcium and kale, and the calcium content of other green vegetables. Kale was introduced as having the highest amount of calcium amongst other leafy greens. Also, the fiber, vitamin C, beta-carotene, and phytochemical properties of kale were discussed. The daily requirements of calcium were listed for adults. Parents learned that milk is not the only source of calcium. They were given kale seeds to grow and taught how to grow them indoors. They were taught how to cut kale leaves off the top of the plant and to let the plant continue to produce more leaves for future meals. The recipe provided was prepared and shared with the parents as an example of a food they could make in their home.
Lastly, lesson Eight was titled “Antioxidant Benefits.” This was the last lesson and was not taught at either school due to scheduling conflicts. This lesson introduced antioxidants and functions of antioxidants. Examples of foods high in antioxidants were to be given such as fruits, vegetables, oils, and animal products. Foods were divided in to categories “fruits,” “vegetables,” and “Other.” A recipe was then to be provided for each of the categories. A fruit salad recipe was to be prepared that utilized some the food examples used in the lesson. This would give the parents an example of an easy recipe they could share with their families. A gardening portion was included through using strawberries. Instructions were given on how to grow strawberries indoors. Materials were brought to the school and distributed but the lesson was not taught. This lesson was to be continued by the second educator in the following semester.

Although 8 lessons were created for both Cohasset and Anatola Elementary Schools, parent participation between schools was drastically different. At Cohasset, a total of 30 parents attended over the course of the year. Most of the time the parents were the same but sometimes new parents would attend. At Anatola, a total of 15 parents attended over the course of a year. However, parents at Anatola were always different. The same parents would rarely attend. Parents with children from all grades would attend the gardening sessions and not only the parents of children participating in the nutrition and gardening education, which consisted of
only first and second grade students. With the parents that attended there was successful in-class participation and all parents were encouraged to share nutrition and gardening experiences.
Chapter V

Conclusion

Creating gardening and nutrition curriculum to teach to Latino parents was one of the best educational experiences that I have encountered. With an abundance of gardening and nutrition information and resources available, it was discovered that very few of these resources were intended for parents. It was also found that previous elementary in-class nutrition and gardening programs either did not involve parents or involved parents very little. Out of the programs found and reviewed, only one provided structured lessons for parents, although there was low parent participation, which seems to be consistent for parent involvement in most programs. Hence, the creation of age and culturally appropriate curriculum was necessary.

The creation of the curriculum was not difficult to compile. With the work from other universities as references it was clear which topics should be covered such as materials, garden location, planting, watering, composting, fertilizing, and harvesting. However, the difficulty was in the ability to gear lessons to a specific culture such as the Hispanic population in Van Nuys, Ca. In the beginning of the program, the gardening lessons had a cultural component but it was not consistent in all the lessons. It became clear that a strong cultural component was needed after a lesson was conducted with the use of Ratatouille as an example. Parents were hesitant in tasting the dish and commented that it was not a “Mexican” dish and would not be willing to prepare it in their homes. It was clear that parents did not appreciate food other than food they were accustomed to at this point in the
lessons. Hence, more thought was put into Hispanic/Latino culturally appropriate diets. This information was then used to gather gardening materials and recipes. This cultural component was extremely important and should be a component in all parent curriculums. If people cannot relate to what you are teaching they will not be open to trying something new.

Following this culture adjustment, however, parents soon became more open to new concepts and ideas. Towards the end of the lessons, a lesson introducing green vegetables from different cultures was introduced. The parents loved this lesson. They expressed interest in growing these vegetables, learning new recipes from different cultures, and to trying new foods. It was inspiring to see a group of parents change their mindset towards food. Having them open up to different cultures was one of the greatest accomplishments of this author. This paradigm change was essential in the curriculum development and would be essential in the creation of other curriculum.

The teaching of the curriculum was also a learning experience. A rapport between the parents and the educator was essential, especially if the educator does not have children. I sensed, in the beginning, that the parents did not trust what I was teaching, especially since I did not have children of my own. My approach was to encourage them to be the best parents they could be by emphasizing their impact on the children and being more supportive of their attendance to class. Parents were encouraged to share goals and report improvements in their families weekly. Building up the rapport with parents was my favorite part of this project.
Empowering them to make changes in their homes was exciting. Developing a rapport with parents is essential for the success of future program.

Parent involvement was the most difficult aspect of this educational experience. At Cohasset elementary the parents were wonderful and always participated. The problem at this school was that the same thirty parents would participate. It was very rare that new parents would come. Approximately one or two new parents would come each class. This was a problem because the child nutrition and gardening education was for first and second grade students. When the parents were asked who had children in first or second grade, the response was only a handful. This meant that the parents of the first and second grade students were not participating. This also meant the curriculum the children were learning was not being supported at home, which was the purpose of the parent curriculum. In future projects, this discrepancy should be addressed and parent classes should be taught to the parents of the children involved in the project. The fact that parents of children from other grades attended is encouraging, possibly indicating a general interest in gardening and nutrition education.

At Anatola, there was little participation. At most 8 parents would attend each class. A copy of the schedule was passed out but parents would still not attend. For future projects, marketing must be a component of the project. Surveys and fliers must go out with the children to the parents. The surveys would be an indicator of future parent participation and scheduling of the lessons. Scheduling should be based on the results of the surveys. A flier would then be created and sent home only which the children involved in the project. This would allow for more
participants relevant to the entire project. This would help ensure that the curriculum the children were receiving had a better chance of being encouraged at home.

Another element of participation to be noted was the attendance of women versus men. Through the entire project only 3 men attended the classes and none of them continued to come. I made sure to tell them how important it was for both the mother and father to be supportive. I also thanked any fathers for coming and commended them in supporting their wives and children. I was, of course, thankful for all the mothers that participated but would have liked to see more fathers. It would seem that many fathers don’t realize the importance of their involvement in the home. More research should be conducted on the Latino family dynamic and the importance of both parents being involved in dietary changes in the home, specifically related to the increase of fruit and vegetable consumption. This would provide support for the involvement of both parents and should be encouraged in future parent curriculum development.

An assessment of the project was not conducted and is recommended for all future projects, but specifically in the future of this project. The project is to continue at Anatola and moved also to a new school in Van Nuys, California. Gardening and nutrition content should be assessed as well as activities such as planting and food preparation. The utilization of the lessons in the home should also be assessed. This includes gardening, eating habits, and food preparation. Another important component should be the correlation between child and parent curriculum. This would include the number of children in first and second grade of
the parent participants, child curriculum brought home, and the encouragement of both child and parent curriculum implementation in the home.

This project only covered a small portion of parent gardening and nutrition education. There are many more topics that can be covered. Besides gardening and nutrition, components such as the relationship between parents and children, parenting practices, and family dynamics should be incorporated into parent curriculum. This involves professionals from all fields, especially the behavioral fields such as psychology and sociology. There is much that can be done through child and parent education for the purposes of reducing childhood obesity. Just like in any other health related issue, a multidisciplinary team will be required to make a significant impact. Preventing childhood obesity is critical and approaches such as those developed through this project should be encouraged.
References


Association, 110(3), 399-408.


Gardening Curriculum for Parents of Elementary School Students: Increasing Children’s Fruit and Vegetable Consumption
Introduction to Woolly Pockets Lesson Plan

Objectives:
- Parents will learn about Woolly Pockets.
- Parents will learn about the Marilyn Magaram Center and the housing and urban development grant or any organization leading a nutrition or garden program.
- Parents will learn about the curriculum being covered by their children.
- Parents will learn how they can stay involved with their children.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Introduction to Gardening Project Flier
- Growing Zucchini Flier
- Growing Carrots Flier
- Woollypocket.com website
- Starter plants, usually herbs for the first lesson

Procedures:
- Using the Introduction to Gardening Project Flier explain how the Woolly Pockets work and their purpose.
- Using the Woollypocket.com website, share photographs and successful projects through the use of Woolly Pockets.
- Using the flier, discuss the involvement of the Marilyn Magaram center and the Department of Housing and Urban Development grant or the organization leading the nutrition or gardening program.
- Introduce future lesson topics and dates of the lessons.
- Using the Growing Zucchini and Carrots flier give examples of how to start growing vegetables.
- Bring Parents outdoors to the location of the Woolly Pockets to explain gardening activities of children.
- Break into a question period where parents can ask questions and give feedback.
- Give parents starters so they can begin to experiment with growing herbs.

References
Garden Set-up Lesson

Objectives:
- Parents will learn about the best locations to set up a garden.
- Parents will learn about the importance of sunlight and water.
- Parents will learn about container gardening.
- Parents will learn about containers available for apartment gardening.
- Parents will learn about soil and soil treatments.
- Parents will learn how to feed the soil and how the soil will feed the plants.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Garden Set-up flier.
- Pictures of garden locations.
- Examples of containers such as: milk cartons, baskets, buckets, gardening pots, pockets, and bags.
- Examples of healthy soil from any local gardening store. This could be different brands of soil or soils with different textures.
- Examples of soil treatments from any local gardening store. This could be store bought fertilizers and compost.

Procedure:
- Using pictures of indoor and outdoor locations of where gardens thrive, introduce most suitable locations where plants can thrive. Briefly talk about the benefit of sunlight and water.
- Pass around examples of containers that can be used indoors and outdoors. Inform participants about cost and access to different types of containers. Ask them if there is a nearby shop that sells the items they will need to maintain a garden.
- Evaluate different types of soils to identify which soils are healthy and which need more nutrients. Parents will be allowed to view different types of soil.
- Introduce the idea of feeding soil nutrients so that soil will feed the plants on its own.
- Briefly explain the concept of composting which will lead into lesson two.

References:
Seeds and Composting Lesson Plan

Objectives:
- Parents will learn about seeds and nutrients.
- Parents will learn how to save seeds from foods purchased.
- Parents will learn how to separate the seeds of a tomato.
- Parents will learn how to dry seeds after retrieval from food source.
- Parents will learn how to store seeds after they have been dried.
- Parents will learn about composting materials.
- Parents will learn how to take out starter plants from casing.
- Parents will learn how to plant Chilies from starter plants.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Seeds and Composting flier
- Tomatoes
- Cups and spoons
- Re-sealable plastic bags
- Paper towels
- A seed snack (example: pumpkin seeds)
- Example of materials gathered for composting. (example: compost bucket or container, with fruit and vegetable scraps, coffee grounds, etc.)
- Chili plants (starters)
- Soil
- Pots
- Shovel
- Water

Procedures:
- Begin by referring to the Garden Set-up flier from the previous lesson. Ask if they have chosen a location for their garden or container garden. Ask which types of containers they have decided to use.
- Introduce the topic of seeds by sharing seeds and nutrition. A brief fact on a great snack for them and their children that is healthful. Pass out seeds for parents to snack on while the lesson proceeds.
- Pass out the tomatoes, cups, spoons, and two re-sealable bags.
- Follow the steps on how to remove seeds from a tomato with a spoon and place the seeds in a cup.
- Allow parents to take home the seedless tomato in the plastic re-sealable bag. Cover the seeds in the cup with the second re-sealable bag
and instruct parents to take home and let the seeds separate after adding water.
- Instruct parents on how to dry seeds and store seeds until future use.
- Begin part two of the lesson, which is on composting materials.
- Explain the difference between “brown” and “green” materials.
- Display items from home that can be used in compost.
- Explain which food items cannot be used in compost.
- Introduce the topic for the following lesson which will be on fertilizer and composting.
- Pass out chili plants.
- Show the class how to take out plants from plastic casing.
- Demonstrate how to extend root system before potting the plant.
- Demonstrate how deep to plant a starter. Root system should be entirely covered and the base of the plant where the stem meets the soil on that started should also be covered.
- Water the plant and have participants take the plant home to add to their first container garden.

References


Feeding Your Garden Lesson Plan

Objectives:
- Parents will learn about compost.
- Parents will learn about fertilizer.
- Parents will learn the difference between fertilizer and compost.
- Parents will learn how to make their own fertilizer using egg shells, coffee grounds, and banana peels.
- Parents will learn how to store seeds after they have been dried.
- Parents will learn how to plant seeds they have dried.
- Parents will learn about composting materials.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- Egg shells previously collected by instructor
- Coffee ground previously collected by instructor
- Re-sealable plastic bags
- Bananas.
- Dried tomato seeds and/or starters
- Pots
- Soil
- Water

Procedures:
- Begin the lesson by referring to the “Seeds and Composting” lesson from the week before.
- Ask class if they have collected any materials and started a compost pile. Ask class to share experiences with compost.
- Ask class if they dried their tomato seeds when they got home.
- If so, ask class to take out seeds for later in the lesson. If not participants will be given starter plants.
- Hand out the “Feeding Your Plants” flier.
- Talk about the difference between fertilizer and compost.
- Have class identify the difference between the two by asking questions about what they learned.
- Pass out bananas as a snack and have class save the peel and place in a re-sealable bag for later use in their garden.
- Pass out egg shells and have class crush the egg shells.
- Pass out grounds of coffee in a re-sealable bag for class to take home.
- Talk about the use of coffee grounds in compost versus coffee grounds as fertilizer.
- Pass out dried tomato seeds from previous class or starter tomato plants.
- Pass out all other materials.
  - Have class practice planting from seed and/or planting from a starter plant.
  - Water plants.
  - Have participants take home plants to add to their container garden. By this point they should have herbs, chilies, and tomatoes. If participants have missed classes bring extra starter plants for these participants to following classes.

References


Herbs and Gardening Lesson Plan

Objectives:
- Parents will learn about Mexican traditional herbs.
- Parents will learn how to plant various cultural herbs.
- Parents will learn the nutrients associated with each individual herb.
- Parents will learn uses of traditional herbs.
- Parents will learn how to make a dish using one or a few of the traditional herbs.
- Parents will revisit herb gardening.
- Parents will plant herbs from seeds.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Herbs, Gardening, and Nutrition” flier
- A choice of one of the herbs from the flier and a different herb than the herb given in the first lesson
- Pots
- Soil
- Shovel
- Water
- Gloves
- Ingredients to a recipe of choice from the flier or another resource

Procedures:
- Begin the lesson by referring to the introduction lesson from the first week.
- Ask class how their herb is doing and to share experiences of their container garden.
- Pass our “Herbs, Gardening, and Nutrition” flier.
- Ask class to share how they use herbs in their current cooking.
- Go over traditional herbs, uses, planting instructions, and nutrients associated with each herb.
- Talk about the functions of the nutrients. (These can be found in any nutrition text book).
- Talk about the use of herbs versus salt in avoiding hypertension.
- Pass out herb planting materials. By this point the class should be able to plant on their own. Provide little instruction to assess participant’s knowledge of planting from a seed or starter.
- Take our ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class in the use of herbs instead of salt.
- Encourage class in the use of all foods from container gardening.

References


Salsas and Health Lesson Plan

Objectives:
- Parents will learn about the nutrients contained in the ingredients of salsa.
- Parents will learn the many uses of salsas.
- Parents will learn how to harvest and utilize vegetables from previous lessons.
- Parents will learn how to make salsa and Pico de Gallo.
- Parents will learn how to encourage children to help them make salsa or Pico de Gallo at home.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Salsas and Your Health” flier
- Salsa ingredients from recipe of choice
- Pico de Gallo ingredients from recipe of choice
- Chilies, herbs, and tomatoes from container gardening
- Vegetable coloring sheets or matching game (any vegetable coloring sheet or pictures from the internet)

Procedures:
- Pass our “Salsas and Your Health” flier
- Begin the lesson by asking class if they make salsas or Pico de Gallo
- Ask class to share their favorite recipes and uses
- Ask class which dishes they use salsas in to flavor dishes.
- Identify ingredients in a salsa with class.
- Discuss the nutrients in the ingredients of a salsa.
- Discuss the health benefits associated with the ingredients in a salsa.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to have children help in the preparation of salsas and Pico de Gallo.
- Encourage class to increase consumption of the healthy foods already in their diet.
- Pass out coloring sheets for parents to take home to their children for them to talk about vegetables and encourage their children to increase vegetable consumption.
References

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Racetas de Salsas. (n.d.) Salsa de Tomatillo. Retrieved from
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Univision. (n.d.) Salsa de Habanero. Retrieved from
http://archivo.univision.com/content/content.jhtml?cid=540499
Calcium Lesson Plan

Objectives:
- Parents will learn about the functions of calcium.
- Parents will learn about the food sources of calcium, specifically green vegetables.
- Parents will learn about the amounts of calcium in various green vegetables.
- Parents will learn about calcium requirements.
- Parents will learn about kale.
- Parents will learn how to plant kale.
- Parents will learn how to utilize kale in a dish.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Calcium: Don’t Forget about Your Greens” flier
- Kale Seeds
- Soil
- Pots
- Gloves
- Water
- Ingredients for a kale dish of your choice
- Greens coloring sheet or game (Any from the internet)

Procedures:
- Pass our “Calcium: Don’t Forget about Your Greens” flier
- Begin the lesson by asking class if they can list calcium sources
- Introduce green vegetables as a food source of calcium
- Introduce kale a food source high in calcium
- Discuss how green contain more calcium than milk
- Discuss other benefits of greens such as fiber, vitamin C, Beta-carotene, and phytochemicals.
- Pass out kale planting materials. By this point the class should be able to plant on their own. Provide little instruction to assess participant’s knowledge of planting from a seed or starter.
- Discuss and show video of planting, care, and harvesting of kale.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to have children help in the preparation of a kale salad.
- Encourage class to increase consumption of greens high in calcium.
- Pass out coloring sheets or games for parents to take home to their children for them to talk about vegetables and encourage their children to increase vegetable consumption.

References:


Antioxidants Lesson Plan

Objectives:
- Parents will learn about antioxidants.
- Parents will learn the function of antioxidants.
- Parents will learn about foods high in antioxidants.
- Parents will learn how to make a recipe with foods high in antioxidants.
- Parent will plant strawberries which are high in antioxidants.
- Parents will learn how to talk to their children about fruits and vegetables.

Gardening level:
- Beginner gardener – little to no knowledge about gardening.

Materials:
- “Antioxidant Benefits” flier
- Strawberry starters or seeds
- Strawberry Shortcake coloring sheet (found on the internet)
- Fruits and vegetables coloring sheet (found on the internet)
- Pots
- Soil
- Shovel
- Water
- Gloves
- Ingredients to a recipe of choice from the flier or another resource.

Procedures:
- Pass our “Antioxidants and Benefits” flier
- Begin the lesson by introducing antioxidants, what they are, and what they do.
- Ask class if they are familiar with the word or if they are learning something new.
- Talk about food sources that are high in antioxidants.
- Ask class if they consume any of these foods in their home. Ask class which foods they consume the most in their homes.
- Pass out strawberry gardening materials. Be sure to pass any left-over materials for participants to take home for their children or spouses.
- While class is planting strawberries talk about the antioxidants in strawberries and how to use strawberries in a recipe for them and their children.
- Provide care instructions for growing strawberries indoors or outdoors.
- Take out ingredients from the recipe of your choice and demonstrate the preparation of the recipe.
- Pass out a portion of the recipe to class for tasting.
- Encourage class to increase the consumption of food sources high in antioxidants to benefit their health.
- Pass our coloring sheets for parents to take home to their children for them to talk about antioxidant foods and encourage their children to eat foods high in antioxidants.

References


Growing Carrots Indoors

California State University, Northridge
By Marena Mendoza

Materials
- Carrot Seeds
- Spray Bottle
- Rich Soil
- Sand
- Large Container

Carrots are one of the most common vegetables grown indoors and easy to grow and maintain in small spaces. All you need are a few materials and sunlight. Materials can be found at any home and garden store. Follow these six simple steps and be on your way to having your own carrot garden!

1. Gather the materials listed.
2. Place large container in a sunny area of your home. Carrots need 6-8 hours of sunlight a day.
3. Make a mixture of 1/2 rich soil and 1/2 sand. Place in container.
4. Put seeds in soil about 2" apart from one another and cover gently with soil.
5. Fill spray bottle with water. Spray covered seeds with water. Keep spray bottle to continue watering your carrots. You do not need to water them heavily. Water only when soil is dry again. Carrots do not like a lot of water.
6. Keep watering your carrots and make sure they get plenty of sunlight. Harvest according to instructions on package. Enjoy!

Nutrition Fact: Carrots are a source of many vitamins, especially vitamin A. They help promote healthy skin, eyesight, bones, and hair.

Cultivo de Zanahorias en Interiores

La Universidad Estatal de California, Northridge

Materiales
- Semillas de Zanahorias
- Pulverizador
- Suelo Fertil
- Arena
- Gran contenedor

Las zanahorias son una de las verduras más comunes para cultivar dentro de casa, es fácil de cultivar en espacios pequeños. Lo único que se necesita son unos pocos materiales y a la luz solar. Estos materiales pueden ser encontrados en cualquier tienda de el hogar y el jardín. Siga estos seis pasos sencillos y de esta manera usted tendrá su propio jardín de zanahorias!

1. Recoge los materiales enumerados.
2. Ubica el contenedor en una zona soleada de su hogar. Las zanahorias necesitan 6-8 horas de sol al día.
3. Haga una mezcla de 1/2 suelo fértil y 1/2 arena. Coloque esta mezcla en el contenedor.
4. Ponga las semillas en el suelo separados 2" uno de otro y cubra las suavemente con la tierra.
5. Llene el pulverizador con agua. Pulverice las semillas con agua. Mantenga el pulverizador para continuar regando. Usted no necesita regar suavemente. Solamente necesita regar otra vez cuando el suelo está seco. No sobre riegue la planta de zanahoria.
6. Siga regando sus zanahorias. Asegúrese de que tengan suficiente luz solar. Cosecha de acuerdo con las instrucciones del paquete. ¡Disfruta!

La nutrición hecho: Las Zanahorias son una fuente de muchas de las vitaminas, en particular de vitamina A. Contribuyen a promover piel sana, la vista, los huesos, y el cabello.
Growing Zucchini Indoors

Zucchini is a summer squash that grows best in full sun and warm conditions. Most houses are kept warm enough all year to grow zucchini inside. A temperature range of 60 to 80 degrees is suitable, but 65 to 75 is ideal. All you need are a few materials and sunlight. Materials can be found at any home and garden store. Follow these five simple steps and be on your way to growing your own squash!

1. Gather the materials listed.
2. Place large container in a sunny area of your home. Zucchini need 6-8 hours of sunlight a day.
3. Place seeds or starter in a container over a 12 inch tall and two feet across hill.
4. Fill spray bottle with water. Spray covered seeds with water. Keep spray bottle to continue watering your carrots. You do not need to water them heavily.
5. Keep watering your zucchini and make sure they get plenty of sunlight. If needed move to larger container. They may be harvested in 63 days. Enjoy!

Nutrition Fact: Zucchini is a good source of vitamin A and fiber. Fiber helps to lower cholesterol.

Information provided by: ehow.com

Cultivo de Calabaza en Interiores

La calabaza crece mejor en el verano con pleno sol y temperaturas cálidas. La mayoría de las casas son suficientemente cálidas todo el año para cultivar calabaza adentro. Una amplia gama de temperaturas de 60 a 80 grados es adecuado, pero 65 a 75 es ideal. Todo lo que se necesita son unos pocos materiales y la luz solar. Estos materiales pueden ser encontrados en cualquier tienda para el hogar y el jardín. Sigamos estos cinco pasos simples y de esta manera usted tendrá su propia calabaza!

1. Recoge los materiales enumerados
2. Ubica el contenedor en una zona soleada de su hogar. La calabaza necesita 6-8 horas de sol al día.
3. Siempre las semillas o planta pequeña en un contenedor sobre un montículo de 12 pulgadas del alto y dos pies de lado a lado
5. Sigue regando su calabaza. Asegúrese de que tengan suficiente luz solar. Es necesario mover la calabaza a un contenedor más grande. Puede ser cosechada en 63 días. Disfruta!

La nutrición hecho: La calabaza es una fuente de muchas de las vitaminas, en particular de vitamina A y fibra. La fibra ayuda bajar el colesterol.

Información proporcionada por: ehow.com
Elementary School Gardening Project
by Mirena Mendez

Woolly Pocket Gardens

What are Woolly Pockets? Woolly Pockets are flexible, breathable gardening containers. The style we chose was designed to be hung on walls or fences of your school for vertical gardening. You can use Woolly Pockets both indoors and out.

Who makes Woolly Pockets? The Woolly Pocket Garden Company provides the pockets for the garden at your school. They are a family owned and operated company based in Los Angeles and Phoenix.

How are CSUN and the Marilyn Magaram Center Involved? The Marilyn Magaram Center is located at California State University Northridge. The center supports research, education, and community services that are specific to food science, nutrition, and dietetics. The Marilyn Magaram center donated funds for your school to have an education based garden.

You and Your Children

What will your Children be learning? Your children will be learning how to garden from planting a seed to watching the growth of their plants through out the year. They will learn how easy it is to grow their own food and care for a garden. Through this process, they will be educated about produce and the consumption of different fruits and vegetables. Overall this project will focus on increasing fruits and vegetables in your child's diet.

How can you get involved? You can get involved through creating your own garden at home, encouraging more fruits and vegetables at home, involving your children in food preparation, and coming to parent events. These events will be held throughout the year and a calendar will be sent out with more information.

Parent Questions?
Please contact Mirena Mendez Mirena.mendez.688@my.csun.edu
Escuela Primaria

Proyecto de Jardinería

POR MIRENA MENDEZ

PUNTOS DE INTERES

- Acerca de los jardines de los bolsillos Woolly.
- La Universidad Estatal de California, Northridge y el Centro Marilyn Magaram.
- Los participantes del proyecto.
- Lo que sus niños aprenderán.
- Cómo usted puede participar.

El Jardín de Woolly Pockets

¿Qué son los bolsillos Woolly?
Los bolsillos Woolly son contenedores de jardines flexibles y transpirables. El estilo que escogimos está diseñado para ser colgado en las paredes u otras partes de su escuela. Usted puede usar los bolsillos Woolly tanto en interiores como en exteriores.

¿Quién hace los bolsillos Woolly?
La compañía de jardines de los bolsillos Woolly ofrece los contenedores para el jardín de su escuela. La compañía es una empresa familiar que opera con sede en Los Ángeles y Phoenix.

¿Quiénes son los participantes en el proyecto?
Profesores:
Joyce Gilbert, PhD, RD
Director Ejecutivo del centro Marilyn Magaram
Ritamie Litte, MS, RD
Directora Asociada del centro Marilyn Magaram
Teri Listgor, BS, MS, RD
Educador:
Mirena Mendez, BS

Ustedes y Sus Hijos

¿Qué van a aprender sus hijos?
Sus hijos aprenderán cómo plantar una semilla y ver cómo crece su planta en el transcurso del año. Ellos aprenderán lo fácil que es cultivar sus propios alimentos y el cuidado de su jardín. Van aprender que fácil es cultivar su propio jardín. A través de este proceso van a ser educados acerca de la producción y el consumo de diferentes frutas y verduras. En general, este proyecto se centrará en aumentar las frutas y verduras en la dieta de su hijo.

¿Cómo usted puede participar?
Usted puede participar creando su propio jardín en casa, fomentando el consumo de más frutas y verduras, involucrando a sus hijos en la preparación de alimentos, y yendo a los eventos para padres. Estos eventos se llevarán a cabo durante todo el año y un calendario con información será enviado a casa.

¿Preguntas de los Padres?
Por favor póngase en contacto con
Mirena Mendez
Mirena.mendez@888
Setting up your First Garden

Special points of interest:

- Location of your garden.
- Containers for your garden.
- Soil for your garden.
- Nutrients for your garden.

Location and Containers for your Indoor or Outdoor Garden

**Locations**

Gardens can be set up anywhere that receives enough sunlight. Most vegetables will need at least 6 hours of direct sunlight but grow best with 8-10 hours. You can also provide reflective materials around the plant such as aluminum foil and white surfaces to increase light exposure. Outdoor locations include:

- Door steps
- Patios
- Walls
- Indoor locations include:
  - Kitchen counters
  - Back doors

**Containers**

You can plant in any type of container as long as it has holes in the bottom or a way to drain from the bottom. Here are some ideas:

- 1 Gallon buckets
- 1 Gallon milk jug
- 2 Liter soda bottle
- Garden pots
- Soil bags
- Baskets

These containers can be made out of many materials such as:

- Clay
- Wood
- Plastic
- Metal
- Cloth

Containers for vegetable gardening must be:

- Large enough to support plants
- Hold soil without spilling
- Have adequate drainage
- Never have held products that would be toxic to plants or people.

Supplies:

- Sunny Location
- Potting Container
- Soil
- Soil Nutrients
- Water
- Small Garden Gloves
- Gloves (Optional)

**Soil and Soil Nutrients**

**Soil**

A lightweight potting mix is required. The soil must be porous in order to support plant growth because roots require air and water. Packaged soil is good for container gardening and is most convenient. If a lot of packaged soil is needed this may become expensive. In this case, try mixing your own soil. A quick recipe for a container mix is:

1. 1 part compost
2. 1 part garden soil
3. 1 part coarse sand or a mix of vermiculite and perlite.

These ingredients can be purchased at the nearest garden center.

**Soil Nutrients**

Soil needs nutrients to be able to feed the plants. The best way to get these nutrients is by making homemade compost. If you don’t have any on hand the next best thing is bagged products. Once you have the nutrients for your soil you can blend in the compost with the soil or place a layer on top of the soil. The next lesson will address making your own composting or learning which products you can purchase in stores.
Configura de Su Primer Jardín

Puntos De Interés:
- Ubicación de su jardín.
- Los contenedores para su jardín.
- Suelo de su jardín.
- Los nutrientes para su jardín.

Ubicación y Contenedores para Su Jardín Interior o Exterior

Ubicaciones

Los jardines pueden ser configurados en cualquier lugar que reciba suficiente luz solar. La mayoría de los vegetales necesitan por lo menos 5 horas de luz solar directa pero crecen mejor con 8 a 10 horas. También puede proporcionar material reflector alrededor de la planta como una hoja de aluminio o un superfi cie blanca para aumentar la expulsión a la luz. Espacios exteriores incluyen:
- Jardín
- Pâtios
- Paredes

Espacios interiores incluyen:
- Recintos de ventanas

Contenedores

Usted puede plantar en cualquier tipo de contenedor, solo que tenga agujeros en la parte inferior o en la parte superior. Aquí están algunas ideas:
- Un cubo de un galón.
- Una jarra de un galón.
- Una botella de 2 litros.

El Suelo y los Nutrientes del Suelo

El suelo es rígido es:
1. Una parte de abono
2. Una parte de tierra de jardinería
3. Una parte de arena gruesa o una mezcla de vermiculita y perlita.

Nutrientes del Suelo

Suelo necesita nutrientes para poder alimentar las plantas. La mejor manera de obtener estos nutrientes es a través de abono. Si no tiene todo a mano, la mejor solución son productos embolsados. Una vez que tenga los nutrientes para su suelo, usted puede mezclar el abono en la tierra o ponerlo encima de la tierra. La siguiente lección se ocupará de su propio aprendizaje del compostaje o productos que usted puede comprar en las tiendas.
Seeds and Composting
Las Semillas y El Compostaje

By Por Mirna Mendoza Edited by/edtado por Elma Cano
California State University, Northridge

How to Save Your Own Seeds
Cómo Guardar Sus Propias Semillas

English
Saving your seeds is easy and inexpensive. Follow the steps below:

1. Wash the seeds under cool water. Seeds are ripe when the vegetable is ripe.
2. If the seeds do not detach easily, remove both the flesh and seeds of the vegetable. Soak in water for 2 days until the seeds have separated.
3. Transfer the seeds to a dry location. Let them dry for 14-20 days. Do not use extreme heat. The seeds are dry when they no longer stick to each other.
4. Your seeds will be ready to plant. For storage, transfer seeds to a dry, airtight container. Moisture can rot the seeds.

Español
Guardando sus semillas es fácil y barato. Siga los pasos a continuación:

1. Lave las semillas en agua fría. Las semillas están maduras cuando el vegetal está maduro.
2. Si las semillas no se despegan fácilmente, elimina la carne y las semillas de la verdura. En agua durante dos días hasta que las semillas han separado.
3. Transfiera las semillas a un lugar seco. Déjalas secar durante 14-20 días. No use calor extremo. Las semillas están secas cuando ya no se pegan una a la otra.
4. Ya secas, tus semillas estarán listas para plantar. Para el almacenamiento, transfiera las semillas a un contenedor seco y hermético. La humedad puede moho las semillas.

What to Use in Your Compost
Lo que Uso En Su Compostaje

English
Compost helps to feed your soil which is important for the growth of your plants. There are many materials that you can use for composting. These materials are divided into green materials and brown materials. You need both to make good compost.

Brown materials include:
- Dry leaves and grass
- Woody stalks of plants
- Paper and wood products
- Dryer lint
- Straw
- Green materials include:
- Kitchen scraps such as vegetables, egg shells, and fruit.
- Coffee grounds
- Fresh green leaves and grass
- Composted manure

Español
El compostaje ayuda a alimentar la tierra que es importante para el crecimiento de las plantas. Existen muchos materiales que pueden utilizarse para el compostaje. Estos materiales se dividen en materiales verdes y materiales marrón. Usted necesita los dos para hacer buen compostaje.

Materiales Marrones incluyen:
- Hojas y zarzate seco
- Los tallos de las plantas leñosas.
- Productos de papel y leña
- Paja

Materiales verdes incluyen:
- Sobras de la cocina como verduras, cascaras de huevo y frutas.
- Café molido Hojas frescas de color verde y zarzate
- Abono
FEEDING YOUR PLANTS
ALIMENTANDO SUS PLANTAS

BY/POR MIRENA MENDEZ

What is the Difference Between Compost and Fertilizer?
¿Cuál es la Diferencia Entre Abonos y Fertilizantes?

Fertilizers add nutrients to the soil. These nutrients are focused on meeting the needs of the plant but may prevent microbe growth which are needed to keep the soil healthy.

Compost promotes the growth of healthy microbes in the soil. It feeds the soil and increases the health of the soil over time. Composting also helps the soil retain moisture.

Fertilizer and compost may be used together.

Los fertilizantes aportan nutrientes al suelo. Estos nutrientes se centran en la satisfacción de las necesidades de la planta, pero pueden prevenir el crecimiento de microorganismos que son necesarios para mantener el suelo saludable.

Abono y fertilizantes pueden ser utilizados juntos.

3 Ways to Make your Own Fertilizer
3 Maneras de Realizar su Propia Fertilizante

Egg Shells:
First save shells after meals. Wash the shells and then place them in a bag. Crush the shells in the bag until they are a powder consistency. Sprinkle the egg shell powder around your trees and plants. Your garden will benefit from the calcium rich shell.

Cascaras de Huevo:
Primero guardan las cáscaras después de las comidas. Lave las cáscaras y, a continuación, coloque las cáscaras en una bolsa. Apriete las cáscaras hasta que sean un polvo. Rocíe la cáscara de huevo en polvo alrededor de sus árboles y plantas. Su jardín se beneficiará de la cáscara rica en calcio.

Coffee Grounds:
Mix a small amount of coffee grounds into the soil of your potted plants. Approximately 1 tablespoon is enough.

Granos de Café:
Mezcle una pequeña cantidad de café molido en el suelo de las plantas en macetas. Aproximadamente 1 cucharada es suficiente.

Banana Peels:
These skins are filled with potassium and will help plants grow flowers and fruit. Plant the entire banana peel under the soil near the roots or place the peel on top of the soil and let it decompose. Another option is to blend the peel with water and pour it over the plant.

Cascaras de Plátano:
Estas pieles están llenas de potasio y le ayudarán a las plantas crecer flores y frutas. Usted puede plantar toda la cáscara del plátano en el suelo cerca de las raíces o puede colocar la cáscara en la parte superior del suelo y dejar que se descomponga.

Otra opción es colocar la cáscara en la licuadora con agua y vertérsela sobre la planta.
Top 7 Mexican Herbs and Uses

1. Basil - Sauce and with lemon and cinnamon flavors.
2. Cilantro - Fresh in salads, beans and rice dishes, soups and stews.
3. Spearmint - Teas, cold drinks, meat stews, sauces, and soups like caldo de pollo.
4. Oregano - Filling and tomato dishes.
5. Parsley - Stews, soups, and mole.
6. Rosemary - As a seasoning but most often as tea.
7. Thyme - Wide variety of dishes.

Recipes to Enjoy

Mandarin Orange, Cilantro, and Avocado Salad:
2 avocados - cubed
1/2 red onion, chopped
1 can (15 ounces) mandarin oranges
1/4 cup cilantro
1 lime, juiced
Mix together in a bowl. Serve with chips.

Clean Sweep Drink:
1 celery stick
4 medium carrots
25 grapes (green)
2 tablespoons fresh parsley
1-3 carrot sticks (optional)
Using a blender, blend all ingredients together. Serve in a medium glass.

Parsley Potatoes:
1 1/2 cup red potatoes
1 tablespoon oil
1 onion
1 clove garlic
1 cup of chicken broth
1 cup of parsley
1/2 teaspoon of pepper
Place potatoes in cold water. Simmer garlic and onion until soft. Pour in broth and parsley. Stir well. Boil potatoes and simmer until soft. Pour sauce over potatoes.

Top 7 Mexican Herbs and Gardening

Plant after any danger of frost. Pinch stems to make compact to avoid lush growth for flavor. Pick leaves 6 weeks after planting. Cut leaves for drying just before small white flowers open.

Grown in the spring. Plant 1-3" apart. Harvest when 6 inches tall or pick leaves when plants are 4-6 inches tall. Gather seeds as they ripen in the mid-summer.

Grows best in moist soil. Renew bed every 3-4 years. Growth is enhanced by frequent cuttings. Pick the fresh leafy stem tips for use at any time. For drying it is best to cut the leaves just as flowering begins.

Grows well in poor soil. Grow 10" to 12" apart. Stimulate by cutting flowers. Use fresh leaves as needed. Preserve by drying.

Cut when leaves are suitable enough. Leaves can be used fresh or dried.

Grows best in well-drained sunny locations. Pinch the tips to direct growth. Use fresh leaves as needed.

Parsley is a good source of Vitamin A, and Iron, and Magnesium.

Parsley is a good source of Vitamin A, C, K, Folate, and Iron.

Parsley is not high in any vitamins or minerals.

Parsley is a good source of Vitamin A, Vitamin C, and Iron.

5 Reasons to Grow Herbs:
1. Flavor a recipe without salt
2. Make fresh herb teas
3. Make fresh herb summer drinks
4. Use fresh herbs to make vinegar, oils
5. Give herbs as gifts
### Las Hierbas, la Jardinería, y la Nutrición

**Por Mirena Méndez**

<table>
<thead>
<tr>
<th>7 Hierbas Tradicionales Mexicanas y su utilización</th>
<th>7 Hierbas Tradicionales Mexicanas y la Jardinería</th>
<th>7 Hierbas Tradicionales Mexicanas y la Nutrición</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Alhfacra - Salas y con sabores de limón y canela.</strong></td>
<td><strong>Plante estas hierbas después de peligro de una helada. Películas los tallos para hacerlos compactos para evitar crecimiento excesivo para mas saber. Recoge hojas 6 semanas después de la siembra. Corte las hojas para sembrar antes de que las flores blancas se abran.</strong></td>
<td><strong>Vitamina A y Vitamina K</strong></td>
</tr>
<tr>
<td><strong>2. Cilantro - Fresco en salazas, frijoles y arroz, sopas y guisos.</strong></td>
<td><strong>Plantas 7º-10º aparte. Concha cuando tienen 6 pulgadas de altura o recogen hojas cuando las plantas están a 4-6 pulgadas de altura. Recoge las semillas madura a medio del verano.</strong></td>
<td><strong>Vitamina A y Vitamina K</strong></td>
</tr>
<tr>
<td><strong>3. Higuera Buena - Tallo, hojas, frutas, verduras de carne, salados y sopas como caldo de pollo.</strong></td>
<td><strong>Crecen bien en el suelo húmedo. Crece mejor en el suelo húmedo y crece muy rápido. Se recomienda sembrarla en un suelo rico y bien drenado. Para el creciendo mejor corte las hojas en el crecimiento del fruto.</strong></td>
<td><strong>Vitamina K</strong></td>
</tr>
<tr>
<td><strong>4. Orégano - Porcela y plátanos de romanos.</strong></td>
<td><strong>Crecen bien en suelos pobres. Crece 10º a 12º aparte. Se recomiendan para corte floreos. Utilice hojas frescas como se necesita. Conserva en el frigorífico.</strong></td>
<td><strong>Vitamina A, C, K, el ácido fólico, y Pantotheno.</strong></td>
</tr>
<tr>
<td><strong>5. Perejil - Guiso, sopas, y molas.</strong></td>
<td><strong>Corte las hojas cuando están suficientemente grandes. Las hojas deben utilizarse frescas o secas.</strong></td>
<td><strong>Fósforo y calcio</strong></td>
</tr>
<tr>
<td><strong>6. Romero - Como condimento para la mayoría de las plantas como un tis.</strong></td>
<td><strong>Crecen en lugares bien drenados y solados. Las hojas pueden ser utilizadas frescas o secas.</strong></td>
<td><strong>Vitamina A, Vitamina C, y Fósforo</strong></td>
</tr>
<tr>
<td><strong>7. Tomillo - Amplia variedad de plantas.</strong></td>
<td><strong>Crecen de 8º-12º aparte. Corte la parte superior y los racimos flores como el primer frutecimiento y seca.</strong></td>
<td><strong>Fósforo</strong></td>
</tr>
</tbody>
</table>

### Recetas para Disfrutar

**Naranja Mandarina, el Cilantro y Sal de Aguacate:**

<table>
<thead>
<tr>
<th>Bébida de Clean Sweep</th>
<th>Papas de Perníl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Chalote de ajo</td>
<td>1/2 taza de papas rojas</td>
</tr>
<tr>
<td>1 cebolla mediana</td>
<td>1 cucharada grande de ajo</td>
</tr>
<tr>
<td>25 uvas (verdes)</td>
<td>1 diente de ajo</td>
</tr>
<tr>
<td>2 cucharadas grandes de pernil fresco</td>
<td>1 taza de caldo de pollo</td>
</tr>
<tr>
<td>Utilizando una licuadora, mezcla todos los ingredientes juntos. Sirva en un vaso mediano.</td>
<td>1/2 taza de pernil 1/2 cucharadita de pimentón</td>
</tr>
</tbody>
</table>

Caliente las papas en agua fría. Sofría el ajo y la cebolla hasta que esté blanda. Vierta el caldo y el pernil. Revuelva bien. Hierva las papas y cocine a fuego lento hasta que estén blandas. Eche la salsa por encima las papas.

### 5 Trucos Para Cuidar Hierbas

1. Dar la luz a una receta en el suelo.
2. Hacer de las hierbas frescas.
3. Utilizar hierbas frescas para hacer vinagres y sales.
4. Dar como regalo.
Salsas and your health

Salta with Green Tomatoes (tomatillos)

Ingredients:
1 Qt water
12 whole green tomatoes (tomatillos)
7 medium cloves garlic, whole
4-8 chile serranos
3 Tbsp white onion, coarsely chopped, salt to taste.
3/4 cup cilantro leaves, with a bit of stem.
For the Garnish
1/4 cup white onion, chopped
1/4 cup cilantro, chopped.

Directions:
Boil tomatillos, 4 garlic cloves, 4 or more chiles and onion. Cook over medium heat for 20 minutes and remove from heat. Drain and reserve cooking water. Cool. Meanwhile, puree 3 garlic cloves in a molcajete or food processor, adding salt to taste. Add cilantro and blend. Add tomatillo mixture. Add a little cooking water and blend. The sauce should have a slightly thick consistency. Correct seasoning. To serve, pour green sauce into a molcajete and garnish with onion and cilantro.

Pico de Gallo

Servings: Makes 2 1/4 cups

Ingredients:
1 green bell pepper, diced
1/2 pound fresh diced tomatoes
1/3 cup chopped fresh cilantro
1/4 cup finely chopped white onion
2 jalapeno chilies, finely chopped
2 tablespoons fresh lime juice
1/4 teaspoon salt

Directions
Combine all ingredients in a small bowl. Cover and refrigerate until chilled, 30 minutes.

Quick facts about chile:
* Domesticated in Ecuador more than 6000 years ago
* Cultivated in Central and South Americas
* Chile is used in dishes from countries such as Mexico, India, Thailand, Portugal, Spain, Philippines, China, Indonesia, Korea and Japan.

Uses:
* Condiment
* Pain relief
* Antiseptic
* Helps with cholera symptoms
* To get rid of bed bugs

Health benefits of chile:
* Contains capsaicin, chemical that gives euphoric (extreme excitement and happiness) feeling
* Capsaicin creams helps with reduce pain of arthritis and diabetic neuropathy
* Reduces LDL cholesterol levels, which are the bad kind
* Improve blood flow to heart
* May protect against cancer

More recipes on back
Salsas y su salud

Salsa con tomatillos

Ingredientes:
1 Quarto de galón de agua
12 tomatillos enteros
7 ojos de ajo medianos
4-8 chile serranos
3 cucharadas de cebolla blanca, picada
Sal a gusto
3/4 taza de cilantro

Para el adorno
1/4 taza cebolla blanca, picada
1/4 taza de cilantro, picado.

Direcciones:
Hierva los tomatillos, con 4 ojos de ajo, 4 o más chiles y cebolla. Cocine estos ingredientes sobre una llama mediana por 20 minutos. Vacíe los ingredientes y permita que se enfrien pero reserve un poco de agua. Al mismo tiempo, muela 3 ojos de ajo en una licuadora o molcajete. Añada sal a gusto. Incorpore el cilantro y muela. Incorpore la mezcla de tomatillo Añade un poco de la agua que reservo y lice. La salsa debe tener una consistencia espesa. Adorne con cebolla y cilantro.

Pico de Gallo

Porción: Produce 2 1/4 tazas

Ingredientes:
1 chile de campana verde, cortados en cubos
1/2 libra de tomates cortados en cubos
1/3 taza de cilantro picado
1/4 taza de cebolla blanca picada
2 jalapeños, picados
2 cucharadas de jugo de limón
1/4 cucharadita de sal

Direcciones:
Combina todos los ingredientes en un tazón chico. Cubre el tazón y agárdalo en el refrigerador, por 30 minutos.

Datos de chile:
* Fueron domesticados en Ecuador más de 6000 años
* Fueron cultivados en América Central y Sur
* El chile ha sido incorporado en los platos de muchos países como México, India, Tailandia, Portugal, España, Filipinas, China, Indonesia, Corea y Japón.

Usos:
* Condimento
* Para el alivio de dolor
* Antiséptico
* Quitar síntomas de cólera
* Eliminar los chinchas

Beneficios para la salud:
* Contiene capsaicina, un químico que produce un sensación de euforia (excitación y alegria)
* Las cremas que contiene capsaicina reducen el dolor asociado con el artritis
* Reduce el colesterol malo (LDL)
* Mejora el flujo de sangre al corazón
* Puede proteger contra el cáncer

Mas recetas en la pagina siguiente:
Salsas and your health

Salsa Rauchera
Ingredients:
2 tomatoes
1/2 white onion
2 garlic cloves
1 tablespoon of oil
serrano chiles, to taste
oregano, to taste
lime juice
salt
Directions:
Submerge the tomatoes in boiling water
for a few seconds. Peel them, dice them
and put them in what will be your salsa
bowl. Chop up the onion, chilli, and garlic
and mix with the tomatoes. Add the oil and
the lime juice and sprinkle with oregano.

Habanero Salsa
Ingredients
2 grilled habaneros
1 grilled onion
1 grilled garlic clove
olive oil
A little bit of cilantro
Salt and black pepper, to taste
Directions: blend ingredients and
season with salt, black pepper and
cilantro.

How can salsas help you lose weight?
*Use salsas instead of mayonnaise, ketchup,
salad dressings, and barbecue sauce. Salsas
have far less calories and they are very
flavorful!!

*Eating chillies helps increase your energy
expenditure.

Did you know...
Chillies have twice as much Vitamin C than
citrus foods like oranges, lemons, kumquats,
and grapefruit.

Chillies retain 70% of the Vitamin C when
cooked.

Chillies are a great decongestant!

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chillies</td>
<td>Vitamin C, vitamin A, Iron, fiber</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Vitamin A, Vitamin C, Magnesium, Phosphorus, Potassium, fiber</td>
</tr>
<tr>
<td>Green tomatoes</td>
<td>Potassium, Magnesium, Phosphorus, Vitamin C, Vitamin A, Magnesium, Calcium,</td>
</tr>
<tr>
<td>Onion</td>
<td>Potassium, Magnesium, Phosphorus, Vitamin C, Calcium, Folate and fiber</td>
</tr>
<tr>
<td>Cilantro</td>
<td>Vitamin K, fiber</td>
</tr>
<tr>
<td>Garlic</td>
<td>Potassium, Phosphorus, Calcium, fiber</td>
</tr>
<tr>
<td>Olive oil</td>
<td>Monounsaturated fats, polyunsaturated fats</td>
</tr>
<tr>
<td>Black pepper</td>
<td>Potassium, Calcium, Vit A</td>
</tr>
</tbody>
</table>
Salsas y su salud

Salsa Roja

Ingredientes:
2 tomates
1/2 cebolla
2 ojos de ajo
1 cucharada de aceite
Chiles Serrano, a gusto
Oregano, al gusto
Jugo de limón
Sal

Direcciones: Sumerja los tomates en agua hirviendo por algunos segundos. Pele los tomates, córtelos en cuadritos, y ponga los en un tazón. Pique la cebolla, chile, y ajo y mézclelos con el tomate. Añade el aceite con jugo de limón y espolvoree con orégano.

Salsa Habanero

Ingredientes
2 habaneros asados
1 cebolla asada
1 ojo de ajo asado
aceite de oliva
Un poco de cilantro
Sal y pimienta, al gusto

Direcciones: luche los ingredientes y sazone con sal, pimienta y cilantro.

¿Cómo pueden las salsas ayudar a reducir su peso?

*Use salsas en vez de mayonesa, ketchup, aderezos, y salsa de barbacoa. Las salsas contienen MENOS calorías y tienen mucho sabor.

*Los chiles aumentan las calorías que usted quema.

Sabía usted que...

Los chiles contiene el doble de la vitamina C que las comidas cítricas como las naranjas, limones, misperos, y las toronjas.

Los chiles retienen 70% de la vitamina C aunque sean cocinados.

Los chiles son un buen descongestionante!
Calcium: Don’t Forget your Greens

What are they?

Featured: Kale

Did you know kale is...

- Cold weather crop that tastes best after it has been touched by frost
- Can be grown during any season in most climates
- Can tolerate temperatures 20 degrees Fahrenheit but will turn bitters and become tough at 80 degrees Fahrenheit or higher

1. Pot or container must be 6 square inches
2. Plant seeds at the center of the pot ½ inch deep and 3 inches apart. Make sure that in winter months the kale sats in full sunlight. Seeds will germinate in cool soil, but they sprout best when the soil temperature is around 70 degrees. The temperatures must be at least 40 degrees.
3. Keep kale watered because it likes moist soil. Keeping the soil moist will also help keep the leaves sweet and crisp.
4. Fertilize and compost to help keep your kale producing. Make sure to pick off wilting leaves.
5. Kale is usually ready for harvest 70-95 days from seed. You can begin to cut off kale when the plant is about 8-10 inches high. If you decide to harvest the entire plant, cut it down to 2 inches above the soil and the plant will sprout new leaves in 1 to 2 weeks.

Why should I eat them?

Provide the following:
* Calcium—needed for bone health
Daily Requirement:
Adults: 1,000 mg (19-50 yrs)
1,200 mg (51 yrs+)
* Fiber—needed for digestion, control of blood glucose and cholesterol levels
* Vitamin C—antioxidant that can help prevent cancer
* Beta-carotene—vision, bone health
* Phytochemicals—prevent cancer & heart disease

<table>
<thead>
<tr>
<th>Vegetable/herb, raw</th>
<th>Calcium content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kale, 100 grams</td>
<td>135 mg</td>
</tr>
<tr>
<td>Asparagus, 1 cup</td>
<td>32 mg</td>
</tr>
<tr>
<td>Artichoke, medium</td>
<td>56 mg</td>
</tr>
<tr>
<td>Broccoli, 1 cup</td>
<td>43 mg</td>
</tr>
<tr>
<td>Cabbage, 1 cup</td>
<td>36 mg</td>
</tr>
<tr>
<td>Celery, 1 cup</td>
<td>40 mg</td>
</tr>
<tr>
<td>Green peas, 1 cup</td>
<td>37 mg</td>
</tr>
<tr>
<td>Leek onion, 1 cup</td>
<td>53 mg</td>
</tr>
<tr>
<td>Lettuce, 1 cup</td>
<td>13 mg</td>
</tr>
<tr>
<td>Parsley, 1 cup</td>
<td>83 mg</td>
</tr>
</tbody>
</table>

Kale, blueberry and quinoa salad
Serves 4 to 6 as a side
Ingredients:
2 cups cooked quinoa, cooled
1 cup fresh blueberries
1 1/2 cup shredded kale
3/4 cup crumbled feta
1/2 cup sliced almonds
3 tablespoons fresh lemon juice
3 tablespoons olive oil
Salt and fresh ground pepper
Directions: In a large bowl, combine quinoa, blueberries, kale, feta, and almonds. Mix until well combined. Add olive oil and lemon juice and toss to fully coat.
Calcio: No se te olviden las verduras verdes

¿Sabías que el col...

* Es un cultivo del invierno que sabe mejor después que ha sido expuesto al helado
* Puede crecer durante cualquier temporada en cualquier clima
* Tolera temperaturas de 20 grados Fahrenheit pero se amarga y endurece a los 80 grados Fahrenheit o más alto

Verdura presentada: Col

1. Maceta o contenedor de 6 pulgadas cuadradas
2. Planta las semillas en el centro de la maceta a ½ pulgadas de hondo y 3 pulgadas aparte. Asegúrese que el col reciba luz del sol durante los meses de invierno. Las semillas germinarán en la tierra fresca pero retoñan cuando la temperatura llega a 70 grados. La temperatura tiene que estar por lo menos a 40 grados.
3. Mantenga el col regado porque le gusta la tierra húmeda y haciendo esto también mantendrá las hojas frescas.
4. Use fertilizante y abono para asegurarse que el col siga cosechando y quite las hojas marchitas.
5. El col esta listo para cosechar a 70-95 días de ser plantadas. Se puede cortar cuando la planta esta a 8-10 pulgadas de altura. Si decide cosechar la planta entera, córtela a 2 pulgadas arriba de la tierra y el col retoñara en 1 a 2 semanas.

¿Por qué es bueno consumirlas?

Ofrecen estos nutrientes:
* Calcio: esencial para la salud de sus huesos
  Requerimiento diario:
  Adultos:
  1,000 mg (19-50 años)
  1,200 mg (51 + años)
  * Fibra: ayuda con la digestión, el control de niveles de azúcar en la sangre y el colesterol
  * Vitamina C: antioxidante que puede prevenir el cáncer
  * Beta-caroteno: ayuda con la visión y salud de los huesos
  * Fitohormonas: prevención del cáncer y enfermedad del corazón

<table>
<thead>
<tr>
<th>Verdura/herba, cruda</th>
<th>Nivel de calcio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Col, 100 gramos</td>
<td>135 mg</td>
</tr>
<tr>
<td>Espárrago, 1 taza</td>
<td>32 mg</td>
</tr>
<tr>
<td>Alcachofa, mediana</td>
<td>56 mg</td>
</tr>
<tr>
<td>Brócoli, 1 taza</td>
<td>43 mg</td>
</tr>
<tr>
<td>Repollo, 1 taza</td>
<td>36 mg</td>
</tr>
<tr>
<td>Apio 1 taza</td>
<td>40 mg</td>
</tr>
<tr>
<td>Chicharros, 1 taza</td>
<td>37 mg</td>
</tr>
<tr>
<td>Ají pimiento, 1 taza</td>
<td>33 mg</td>
</tr>
<tr>
<td>Lechuga, 1 taza</td>
<td>13 mg</td>
</tr>
<tr>
<td>Perejil, 1 taza</td>
<td>23 mg</td>
</tr>
</tbody>
</table>

Ensalada de col, mora, y quinoa
De 4 a 6 porciones
Ingredientes:
2 tazas de quinua cocinada, y eneldo
1 taza de mora
1 1/2 tazas de col en tiras
3/4 taza de queso feta desmordado
1/2 taza de almendras rebanadas
3 cucharadas de jugo de limón
3 cucharadas de aceite de oliva
Sal y pimienta
Preparación:combine la quinua, moras, col, feta, y almendras. Mezcle estos ingredientes. Añada el aceite de oliva y jugo de limón y mezcle otra vez.
## Antioxidant Benefits

By Mirena Mendez and Silvia Viveros Juarez

Increase antioxidants by increasing fruits and vegetables.

### Help Protect Your Healthy Cell from Damage

<table>
<thead>
<tr>
<th>FRUITS</th>
<th>VEGETABLES</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal body functions such as breathing or physical activity produce free radicals that attack healthy cells. Antioxidants help to protect your cells from damage by these free radicals. That is why it is important to intake foods that contain vitamin C, vitamin E, and carotenoids which include beta-carotene, lycopene and lutein. Another nutrient that helps to fight antioxidants is selenium. Learn about which fruits and vegetables will help you fight off disease and stay healthy!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FRUITS
Here are some great fruit examples:
- Citrus Fruits
- Apricots
- Mangoes
- Watermelon
- Papaya
- Blueberries
- Blackberries
- Strawberries
- Raspberries
- Plums
- Red Grapes

Recipe: Fruit Salad
2 cups of sliced apples
1 cup of sliced banana
1/2 cup of sliced strawberries
1 cup of chopped walnuts
1/2 cup of vanilla yogurt
3/4 teaspoon of cinnamon

Instructions: Mix in all ingredients. Sprinkle with cinnamon.

### VEGETABLES
Here are some great vegetable examples:
- Kale
- Spinach
- Brussels sprouts
- Broccoli
- Beets
- Red bell peppers
- Onions
- Eggplant
- Carrots
- Tomatoes (cooking)
- Squash (cooking)

Recipe: Avocado Salad
2 avocados
1 chopped onion*
1 bell pepper chopped*
1 tomato chopped*
1/4 cup almonds
1/2 cup cranberries
1/4 cup dried cherries*
1 (8 ounce) container of vanilla yogurt

Instructions: Combine all ingredients and season.

Recipe: Almond Apple Salad
4 tart green apples sliced
1/4 cup almonds*
1/4 cup of cranberries
1/4 cup of dried cherries*
1 (8 ounce) container of vanilla yogurt

Instructions: Mix all ingredients together.

### OTHER
Here are some examples of other great foods:
- Corn oil
- Broccoli oil
- Mixed nuts
- Brazil nuts (8e)
- Meats (8e)
- Tuna (8e)
- Dairy (A)
- Fish (A)
- Liver (A)
- Sunflower seeds (E)
- Rice (8e)
- Egg yolks (A)

### Gardening Tips for Growing Strawberries Indoors

1. Visit your garden supply store and purchase high quality soil, a large container, plant fertilizer, and strawberry seeds. Red Alpine strawberries grow best indoors.

2. Fill your container 3/4 full. Make many finger holes in the dirt. Add a few seeds to each hole and cover with soil. Cover with soil.

3. Add fertilizer diluted to 1/2 strength.

4. Set container in sunny window or enclosed porch. Fertilize every 10 days.

5. Plants will bloom with white flowers and fruit in a few months. They will keep producing for 3 years. The berries will be small but sweet.
Los Antioxidantes y sus Beneficios

AUMENTA EL CONSUME DE ANTIOXIDANTES CON EL CONSUMO DE FRUTAS Y VEGETALES

Por Mirena Mendez Silva Juarez Vives

Protégé tu células sanas contra el daño

**FRUTAS**
- Frutas Fíbricas
- Chabaanhaos
- Mangos
- Sandía
- Papaya
- Moras azules
- Moras negras
- Fresas
- Frambuesas
- Ciruelas
- Uvas Rojas

**VEGETALES**
- Col
- Espinacas
- Repollos de Bruselas
- Alubias
- Brócoli
- Berenjenas
- Chiles campana rojo
- Cebollas
- Zanahorias
- Tocino (panfrito)
- Cebolletas (petoñar)

**OTRO**
- Avena de maíz
- Avena de alazón
- Nuevos mezclados
- Nuevos brasileños (Se)
- Carnes (Se)
- Alfalfa (Se)
- Productos laitós (A)
- Aceite (A)
- Hígado (A)
- Semillas de girasol (E)
- Arroz (Se)
- Líneas de huevo (A)

Instrucciones para serco frescas en el interior de su hogar:

1. Visite su tienda de jardinería y compre tierra de alta calidad, un envase grande, fertilizante para plantas, y semillas de frutas. Fresas de lo alpinos rojos crecen mejor en los interiores.
2. Llene 1/3 del espacio del envase. Hagala con sus dedos en la tierra. Añada pocas semillas a cada hoy y cubralas con tierra.
3. Añada fertilizante diluido a 1/3 de cuarteo.
4. Ponga el envase en una ventana que reciba mucho sol y porcello y fertilice cada 10 días.
5. Las plantas florecerán con flores blancas dentro de pocos meses y producirán por 3 años. Las frescas serán pequeñas pero dulces.