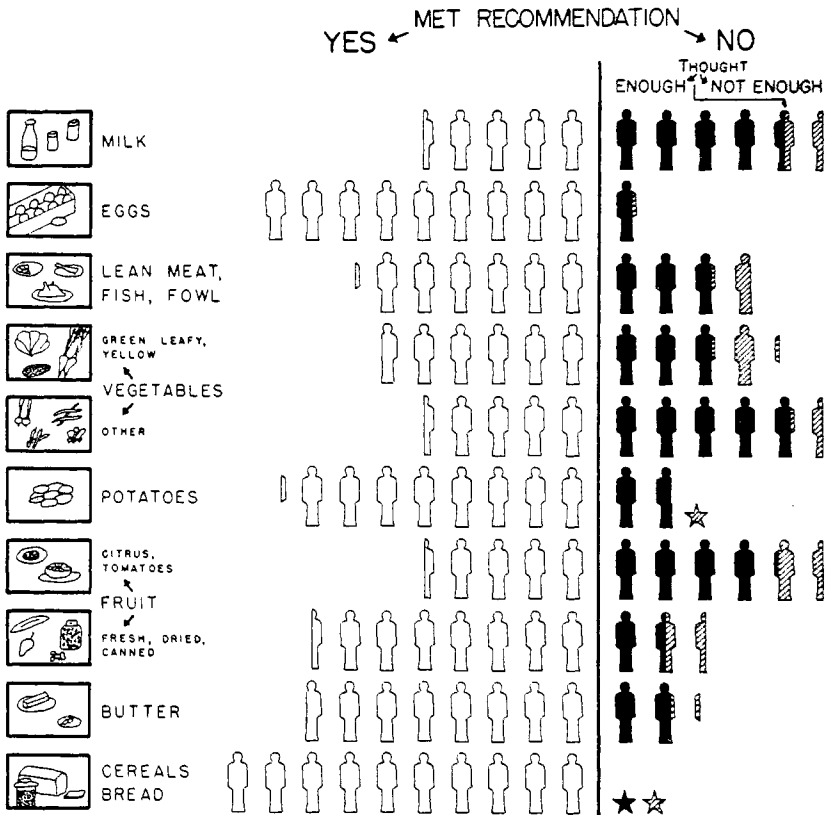


Practices and Attitudes of Rural People in Colorado

In Meeting a "Yardstick of Good Nutrition"

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EACH FIGURE REPRESENTS 10 PERSONS OUT OF 100

★ LESS THAN 1 PERSON OUT OF 100

Extension Service
Colorado State College
Fort Collins

Something to Think About—

Many rural people in Colorado do not eat the variety and quantity of foods recommended by the Food and Nutrition Board of the National Research Council as a diet that will likely maintain maximum health and vigor.¹ (There is evidence that the same general conditions exist in cities.)²

Furthermore, very few people who eat less than the amount recommended by this yardstick express attitudes of dissatisfaction toward their diets. This suggests that these people either have not learned what a good standard is, that they use what they feel are adequate substitutes, that they are satisfied with substandard diets, that they dislike and do not eat certain foods regardless of teachings or consequences, that they feel they cannot obtain certain foods, or that the yardstick is not an adequate measure.

Since the standard set up in the nutrition yardstick is but one measure of good diet and not the only one, it is not possible to say that a person whose diet does not conform to this yardstick necessarily has an inadequate diet. However, in cases where the individual or family diet did not measure up to the yardstick, although considerable substitution occurred, there was seldom adequate compensation in other foods. Therefore this study is meant to be an **indicator** of the proportion of people in the areas surveyed who have adequate or inadequate diets according to the yardstick, and not a nutritional, medical, or bio-chemical investigation of the adequacy or inadequacy of diets.

The human body is carefully built up over a long period of time, and poor building-blocks in the foundation will eventually weaken the whole structure. Even a strong building without proper maintenance deteriorates. Proper diet can mean the difference between success and failure on farms, in community living, and on the battlefields of the world.

Are Your Food Practices Most Healthful?

¹**Recommended Dietary Allowances.** National Research Council Reprint and Circular Series No. 115. Jan. 1943. See also Colo. Agr. Exp. Sta. Press Bulletin 95.

²**Are We Well Fed?** U.S.D.A. Misc. Pub. 430. 1941.

How Rural People in Colorado Meet A "Yardstick of Good Nutrition"

R. W. ROSKELLEY*

Purpose.—This study was initiated (1) to determine the extent to which rural people follow the recommendations of the "Yardstick of Nutrition"³; (2) to determine whether or not people felt that the servings of foods which they ate were sufficient or insufficient; and (3) to determine the reasons for insufficiency when they thought there was insufficiency.

Interpretation and Use of the Yardstick.⁴—The yardstick which was used as a standard in this bulletin is one plan of meeting the recommended dietary allowances of the Food and Nutrition Board, National Research Council. These dietary allowances "represent the best available evidence on the amounts of the various nutritive essentials to include in practical diets."⁵

Here is the "yardstick of good nutrition:"⁵

Milk—1 pint per day for adults; 1 quart for children

Eggs—1 egg if possible; at least 3 to 4 every week

Lean meat, fish, or poultry—1 serving

Green leafy and yellow vegetables—1 serving

Other vegetables (not potatoes)—1 serving

Potatoes—1 serving

Citrus fruit or tomatoes—1 serving

Fresh, canned, or dried fruit—1 serving

Butter—2 servings (2 tablespoons), or butter substitute enriched with vitamin A

Cereals and bread—2 servings (enriched or whole-grain)

Sugar, fats, and other foods to make up calories and satisfy appetite.

Nutritionists point out that following the exact form of this yardstick is not the only means by which to meet the recommended dietary allowances, but if it is not followed careful planning to make satisfactory substitutions is usually necessary in order to insure dietary adequacy. Failure to meet this form of the yardstick does not imply in every case that the diet is deficient, nor does meeting the yardstick give assurance that the diet is sufficient to meet accepted allowances. The assumption that size of serving varies for people in normal health with age, activity, size, and sex is followed in this study; therefore results are given in number of servings and not as specified amounts of particular foods.

*Associate Rural Sociologist, Colorado Agricultural Experiment Station.

³Colo. Agr. Exp. Sta. Press Bulletin 95.

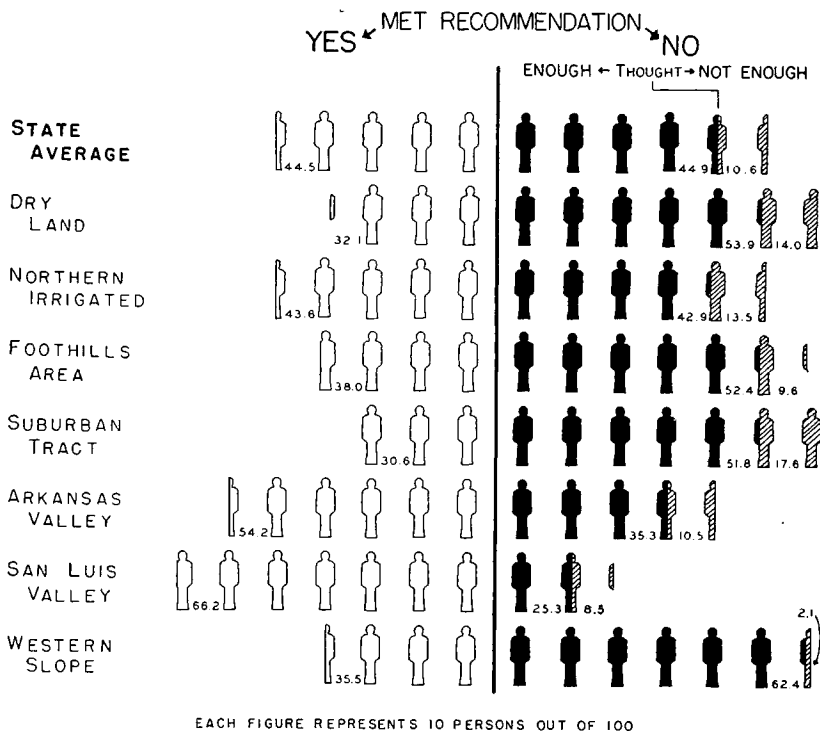
⁴The writer is especially indebted to Dr. Elizabeth Dyar, associate professor of home economics, Colorado State College of A & M A, for preparation of the section in this bulletin entitled "Substitutions for Foods in the Yardstick," as well as for general criticism and assistance in other sections of the manuscript.

⁵Recommended Dietary Allowances. National Research Council Reprint and Circular Series No. 115, page 1. 1943.



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MILK—liquid gold



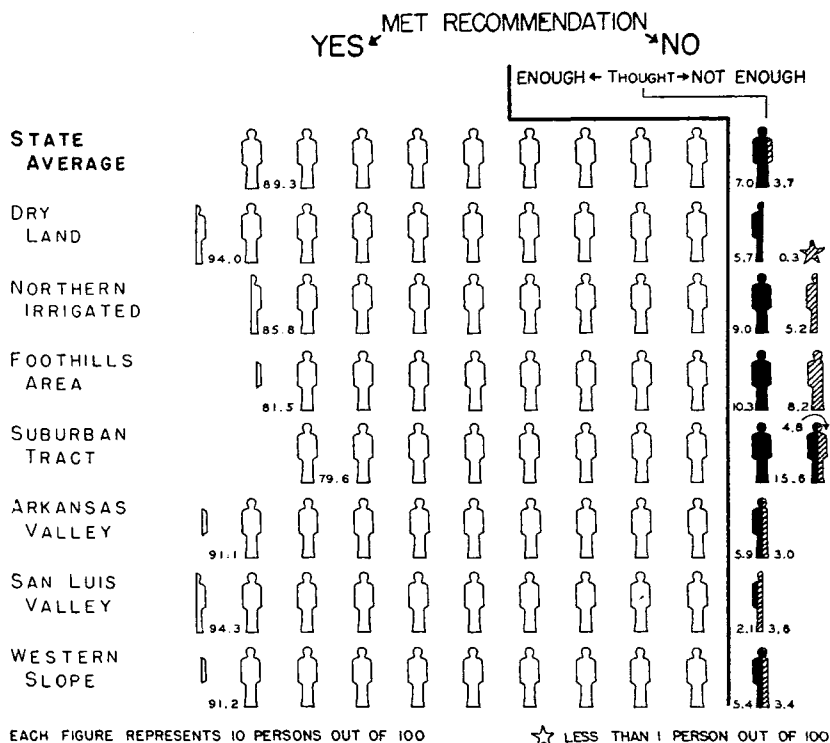
Servings.—As shown in the graph, less than half the rural families interviewed in Colorado had the servings of milk recommended for a health-protecting diet (minimum: 1 pint per day for an adult, 1 quart per day for a child).⁶ Milk products were used very little. People usually either met the yardstick very adequately or used practically none.

Attitudes.—Four out of five of those with insufficient servings of milk to meet nutrition recommendations thought they had enough. Some were satisfied with less than the recommended number of servings, while others did not recognize the lack.

Reasons for Insufficiency.—Those who thought they did not have enough milk gave as reasons for the insufficiency: Cost, dislike of taste, lack of refrigeration, no cows or inadequate feed for animals, and use of milk for animals or sale.

⁶See page 22. "Basis of Interpreting and Tabulating Data," for meaning of terms and basis of classifying persons. See page 21 for sample area.

EGGS—defense packages of nature



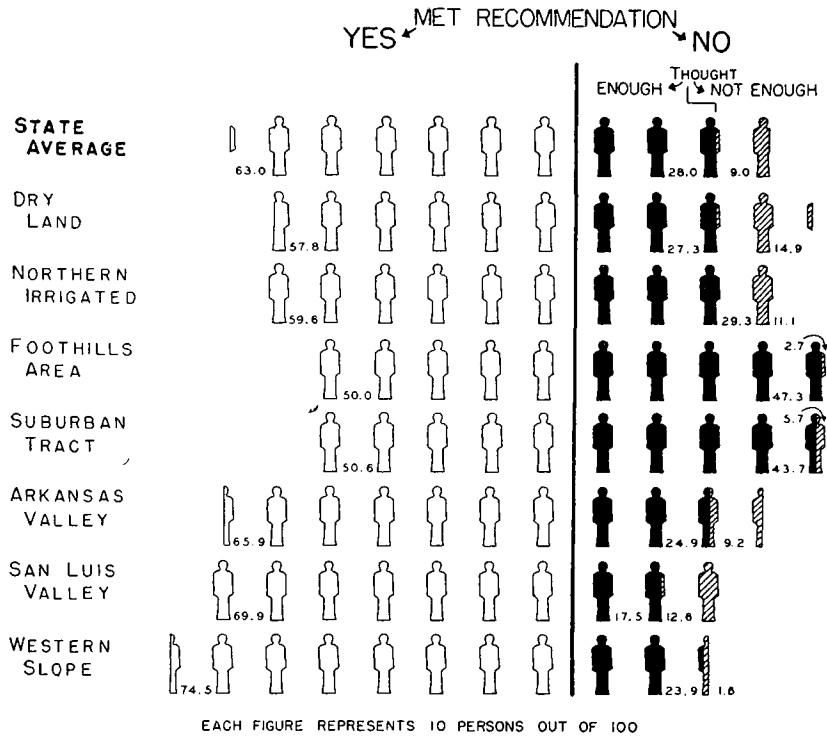
Servings.—Approximately 9 out of 10 persons interviewed ate the minimum number of eggs suggested as vital for health (3 per week; 1 daily is better) as shown in the graph.⁷ About half the people met the higher recommendation of 1 egg per day.

Attitudes.—The frequent comment “Breakfast isn’t breakfast without an egg” expresses a common attitude which is a contributing factor to the high rate of consumption for this item. Two-thirds of those who did not meet the minimum recommendation for eggs thought they had enough.

Reasons for Insufficiency.—The one-third who did not meet the standard and thought they did not have enough gave cost and dislike as the major reasons for not consuming enough eggs. About 11 percent of those giving reasons said that eggs did not agree with them.

⁷See table 5, page 22, for standard error of percentages for this and other graphs.

LEAN MEAT, FISH, POULTRY—muscle builders



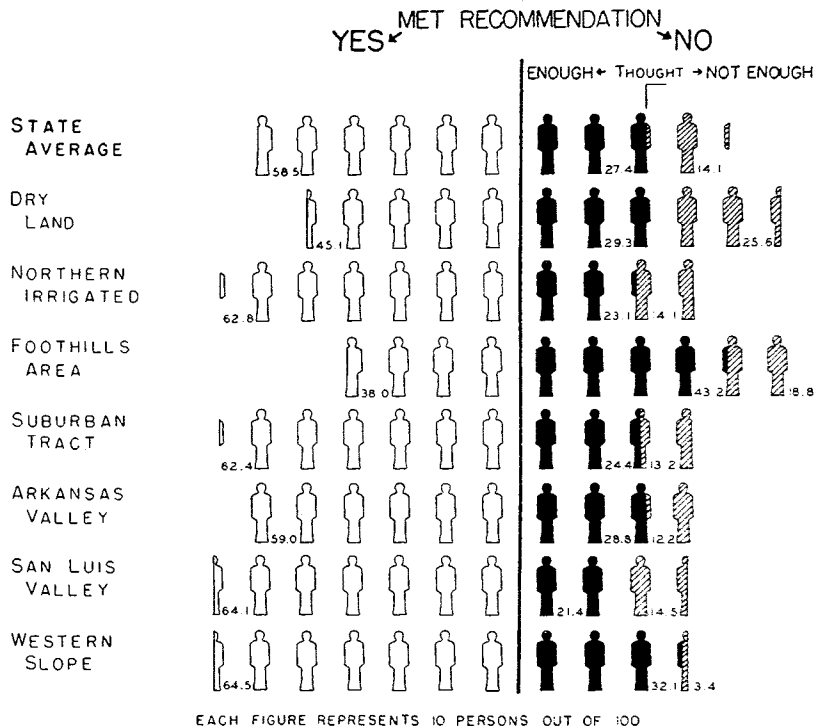
Servings.—The graph shows that slightly more than three fifths of the rural people interviewed are meeting the dietary recommendation for one serving of meat, fish, or poultry per day. The other two fifths were not overcoming the deficiency by using additional servings of other protein-rich foods.

Attitudes.—Three fourths of those who do not have sufficient servings of meat to measure up to the yardstick believed that they had enough. Meat, however, was most keenly missed of all foods listed by people who did not meet the recommendation and thought they did not have enough.

Reasons for Insufficiency.—Cost was the reason given by 75 percent of those who did not meet the recommendation and who thought they did not have enough. Lack of refrigeration and inaccessibility were the two other reasons mentioned most frequently for not having enough meat.

GREEN LEAFY AND YELLOW VEGETABLES—

Nature's preventive medicine

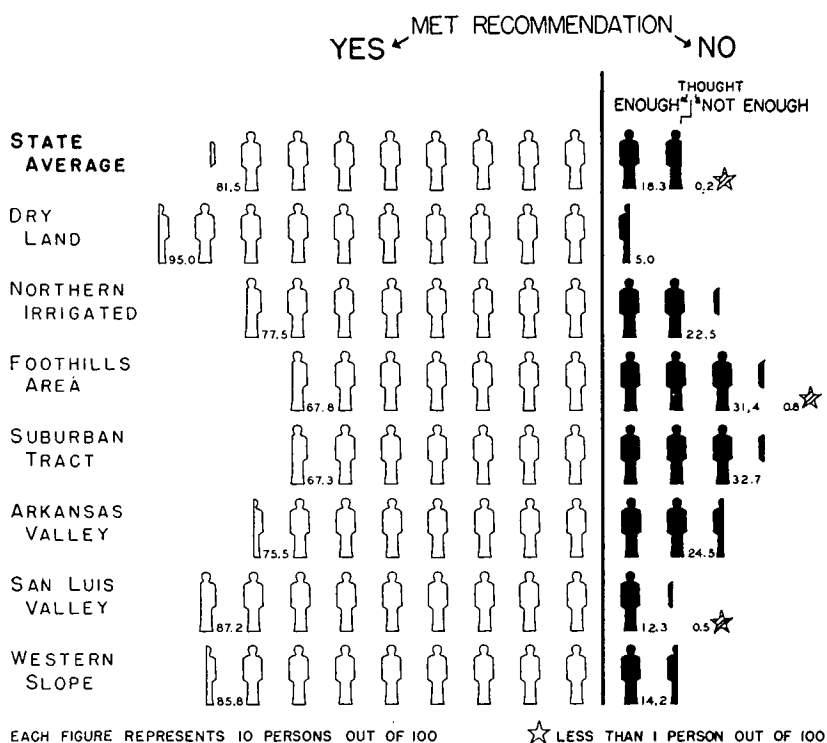


Servings.—In the graph it is shown that only 6 out of 10 people met the minimum standard of one daily serving of green leafy or yellow vegetables.

Attitudes.—Two out of three with insufficient servings of these vegetables to meet the yardstick recommendation did not care about their limited vegetable intake. A common remark was "Johnny doesn't like salad, and dad likes spuds and gravy."

Reasons for Insufficiency.—Most people who thought they should have more (although not as many in proportion as for some other food items) reported cost as the reason for not having enough. No garden, difficulty of obtaining, and dislike of these vegetables were mentioned by about equal numbers of people. It is interesting to note that about 80 percent of the families had gardens.

POTATOES—"backbone of the vegetables"

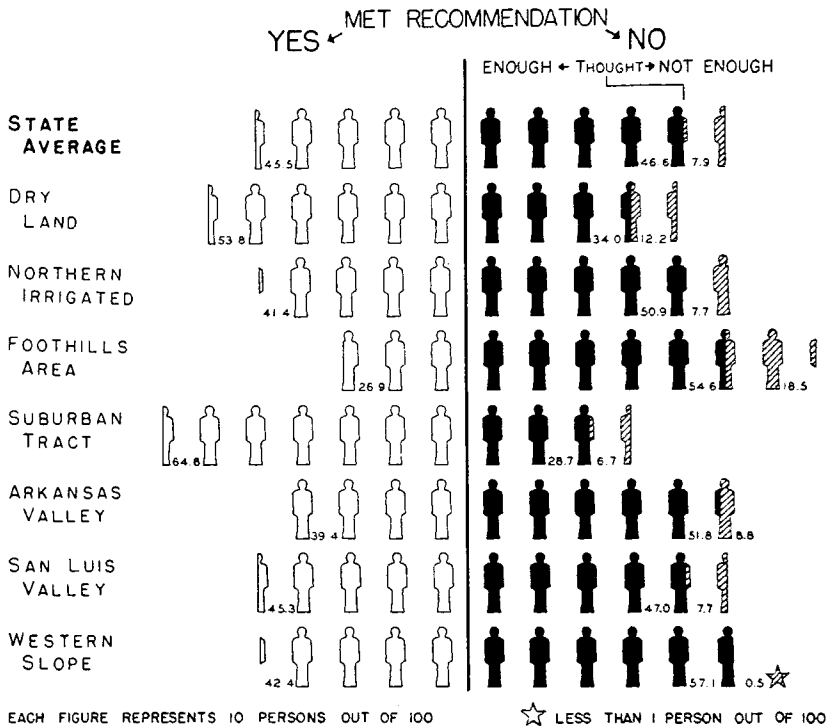


Servings.—The graph shows that on the average four fifths of the members of Colorado rural families interviewed ate potatoes daily (1 serving a day is recommended). Many people served potatoes three times a day.

Attitudes.—Scarcely a person who did not have a sufficient number of servings wanted more. Not once was the potato accused of being expensive or hard to get, but it was accused of being fattening. Many individuals whose diet was standard in consumption of potatoes apologized for eating them. On the other hand potatoes were considered by many as the foundation food for a man who worked hard.

For information on "Basis of Interpreting and Tabulating Data," and for meaning of terms and basis of classifying persons, see page 22. For sample areas in which study was made, see page 21.

OTHER VEGETABLES—completing the “vegetable rainbow”

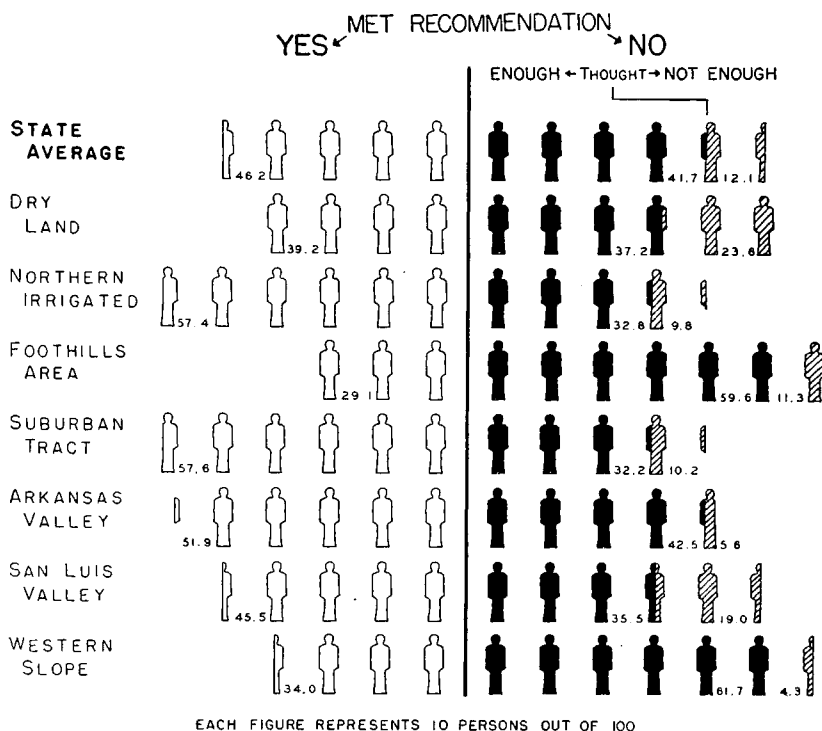


Servings.—Less than half the members of Colorado’s rural families interviewed ate a daily serving of a vegetable other than green leafy, yellow, or potatoes (see graph). Those who exceeded the yardstick in number of servings usually exceeded it by a great margin.

Attitudes.—Not only is there a relatively high proportion of people who do not have enough servings of other vegetables, but less than 2 of every 10 who had less than the recommended number of servings in this item indicated any concern about the limited number of servings when an inquiry was made. The proportion of people who fell short of the yardstick but thought they had enough was greater for other vegetables than for any other diet item.

Reasons for Insufficiency.—Cost was again the most frequently given reason for not having sufficient servings to meet recommendations. Unavailability, no garden, dislike, and lack of storage space were also mentioned.

CITRUS FRUIT AND TOMATOES—vital for victory

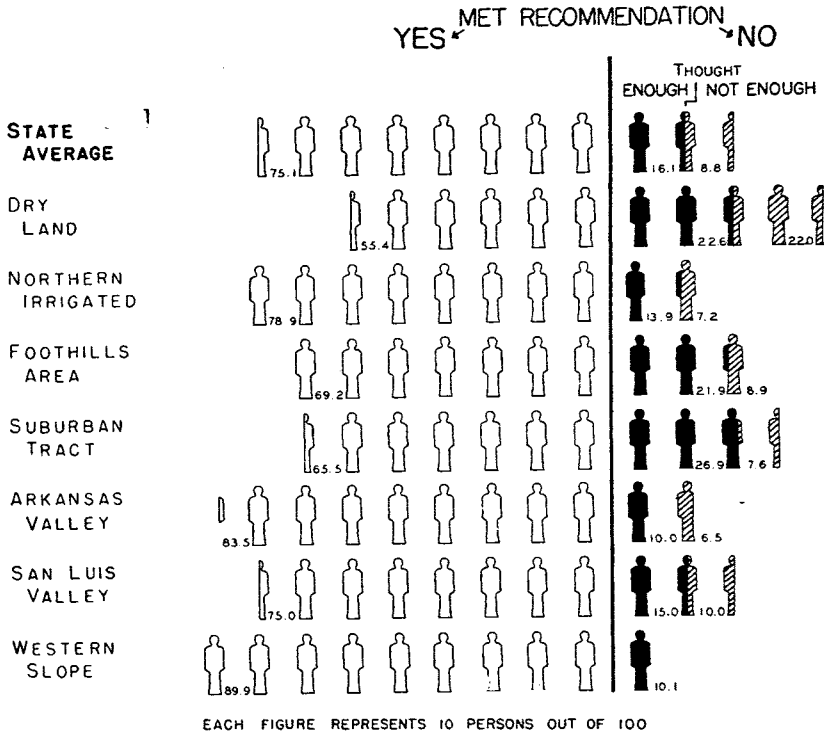


Servings.—More than half of Colorado rural families investigated did not eat a daily serving of citrus fruit or tomatoes (see graph). The practice of using citrus fruit or tomatoes was different from that of any other food considered in that practically no people had servings in excess of the recommended number.

Attitudes. — Regardless of the intensive advertising of “sun-bathed” oranges and tomatoes, less than 1 out of 4 of those whose servings of citrus fruit were below the recommended number thought they needed more.

Reasons for Insufficiency.—Three fourths of those who thought they needed more gave cost as the reason for not having them. “We have a country store here which doesn’t keep fresh oranges or grape-fruit in stock” was the next most common reason. Dislike was mentioned as a reason by about 10 percent.

FRESH, CANNED, DRIED FRUIT—
Colorado's mineral and vitamin wealth

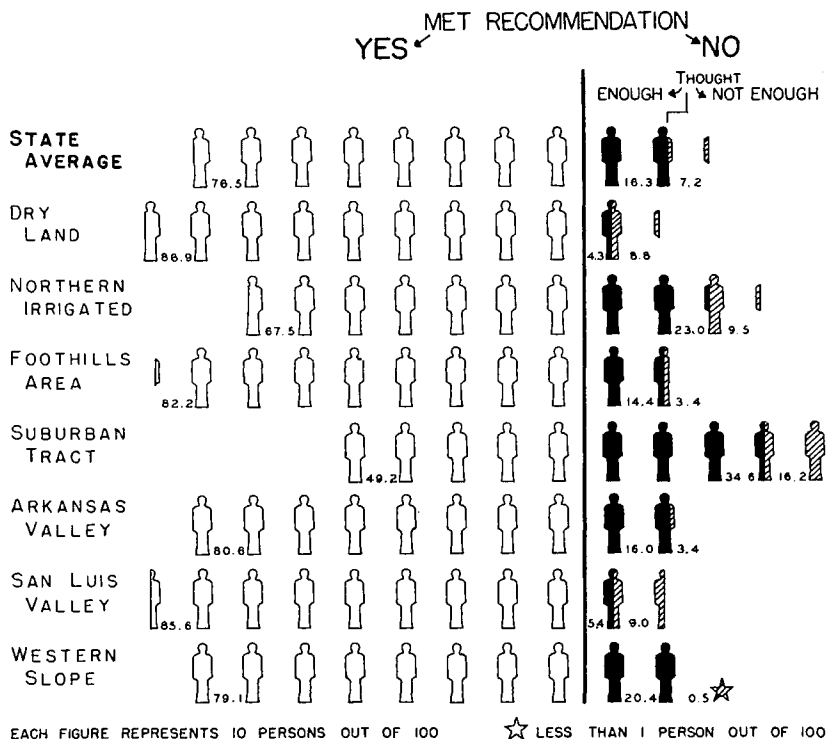


Servings.—Three fourths of the rural people of Colorado who were questioned took advantage of our State's abundant production of fruit by having the suggested minimum of one serving a day of fruit other than citrus (see graph). Although the three are combined in the graph, examination of the schedules reveals that a deficit in fresh fruit is likely to be accompanied by a deficit in canned and dried fruit, but that there is a greater likelihood of exceeding the yardstick in fresh fruit than in canned fruit.

Attitudes.—Among those who had too few servings to meet the recommendation, there was a greater percentage (about 35 percent) who expressed dissatisfaction with the lack of fresh, canned, and dried fruit than the percentage of those who expressed dissatisfaction with any other single diet item.

Reasons for Insufficiency.—Reasons given for insufficiency by those wanting more included the traditional response of expense, unavailability, no orchard, and expressions such as "Oh, we don't can much fruit."

BUTTER—golden treasure



Servings.—Three fourths of Colorado rural families interviewed ate two servings or more of butter daily (see graph). Most people had either considerably more or considerably less than the recommended number of servings. About 5 percent of those not meeting this standard used butter substitutes. Substitutes were most extensively used in the suburban area.⁸

Attitudes.—There was a relatively high percentage (nearly 30 percent) of dissatisfaction among those people whose frequency of serving butter did not meet the minimum standard. Many people who reported using margarine apologized for it.

Reasons for Insufficiency.—Most people who thought they needed more butter considered butter too expensive (some even who had their own cows). Lack of refrigeration was given frequently as a reason. Some said, "We have butter when the cow freshens," or occasionally, "Butter is worth too much money to eat."

⁸No information was obtained on whether or not butter substitutes were enriched with vitamin A.

CEREALS AND BREAD—the staff of life

Servings.—Practically all (99.11 percent) of the members of rural families in Colorado ate two servings or more of bread or cereals daily. If these were whole grain or enriched, they met the recommendations of nutritionists. This was the only food group which was eaten nearly twice as frequently as was recommended by the yardstick.

Attitudes.—Even though cereals and bread are the staff of life, evidence obtained in the survey showed that some people have a great deal of confidence in cereals and bread and lean on this staff quite heavily to the neglect of other foods.

Questions:

Extent to Which Yardstick Was Met

The extent to which the yardstick was met by rural people on the various food items is shown in table 1.

Table 1.—Diet items in order of lowest to highest percentage of people meeting yardstick recommendation.

| Food item | Percentage meeting recommendation | Percentage not meeting recommendation |
|--------------------------------------|-----------------------------------|---------------------------------------|
| Milk | 44 | 56 |
| Other vegetables | 46 | 54 |
| Citrus fruit and tomatoes | 46 | 54 |
| Green leafy and yellow vegetables... | 58 | 42 |
| Lean meat, fish, poultry | 63 | 37 |
| Fresh, canned, and dried fruit..... | 75 | 25 |
| Butter† | 76 | 24 |
| Potatoes | 82 | 18 |
| Eggs | 89 | 11 |
| Cereals and bread* | 99 | 1 |

†Enriched oleomargarine omitted.

*Refined, enriched, and whole grain not differentiated.

Number of Diet Items in Which Yardstick Requirement Is Not Met.—Only 1 out of 20 persons interviewed in rural Colorado (5.5 percent) has a diet in which there is not a deficiency in one or more food items (table 2) according to the standard used.

Table 2.—Percentage of 2,362 Colorado rural persons not meeting yardstick requirements classified by number of deficiencies and area.*

| Section | Number of Deficiencies in Meeting Yardstick Requirements | | | | | | | | | | |
|--------------------------------------|--|------|------|------|------|------|------|-----|-----|-----|----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| State average (percentage) | 5.5 | 13.3 | 18.5 | 20.4 | 17.4 | 12.5 | 8.3 | 3.3 | 0.6 | 0.2 | |
| Dry Land | 1.1 | 9.4 | 14.5 | 26.4 | 17.9 | 21.6 | 6.3 | 2.8 | | | |
| Northern Irrigated | 2.2 | 17.0 | 17.5 | 17.3 | 18.7 | 11.7 | 8.8 | 6.1 | 0.7 | | |
| Foothills Area | 0.7 | 6.2 | 19.2 | 15.7 | 14.4 | 15.7 | 15.7 | 8.2 | 2.1 | 2.1 | |
| Suburban Tract | 4.4 | 11.5 | 15.6 | 17.4 | 14.4 | 18.9 | 13.7 | 2.2 | 1.9 | | |
| San Luis Valley | 15.2 | 17.8 | 18.1 | 15.2 | 15.7 | 7.1 | 7.1 | 3.6 | | 0.2 | |
| Arkansas Valley | 6.3 | 16.7 | 18.1 | 23.3 | 19.1 | 7.3 | 6.8 | 2.1 | 0.3 | | |
| Western Slope | 4.2 | 8.7 | 25.8 | 25.0 | 19.2 | 10.5 | 5.5 | 0.8 | 0.3 | | |

*Food items are in terms of the 10 major combinations considered in this bulletin.

A cumulative percentage based upon table 2 reveals the following:

| |
|---|
| 94.5 percent fall short of the yardstick in at least 1 food |
| 81.2 percent fall short in at least 2 foods |
| 62.7 percent fall short in at least 3 foods |
| 42.3 percent fall short in at least 4 foods |
| 24.9 percent fall short in at least 5 foods |
| 12.4 percent fall short in at least 6 foods |
| 4.1 percent fall short in at least 7 foods |
| 0.8 percent fall short in at least 8 foods |
| 0.2 percent fall short in at least 9 foods |

Combinations of Foods in Which Yardstick Requirements Are Not Met.—In the foregoing cumulative percentage no mention is made of the particular combination of foods where the failure to meet yardstick requirements is most prevalent. Although there is a statistical possibility of 1012 different combinations where people could fall short of yardstick requirements on as few as 2 or as many as 9 foods, the actual tabulation revealed that many of the cases centered around the major single failures to meet yardstick requirements as shown on the cover and in the different graphs.

There were actually 23 different combinations in which people fell short of yardstick requirements in 2 foods. However, 3 patterns accounted for 44 percent of all failures to measure up to the yardstick. They were:

| | |
|--|------------|
| other vegetables and citrus fruit..... | 17 percent |
| citrus fruit and milk | 14 percent |
| other vegetables and milk | 13 percent |

There were 50 different combinations where people fell short of yardstick requirements in 3 foods. The 3 combinations accounting for 36 percent of the total were:

| | |
|--|------------|
| other vegetables, citrus fruit, milk..... | 15 percent |
| green and yellow vegetables, other vegetables, citrus fruit | 13 percent |
| citrus fruit, meat, milk | 8 percent |

In the class where servings of 4 out of 10 foods did not meet yardstick requirements there were 51 different combinations, 5 of which accounted for 44 percent of the total cases. They were:

| | |
|--|------------|
| green and yellow vegetables, other vegetables, citrus fruit, milk | 17 percent |
| green and yellow vegetables, other vegetables, citrus fruit, meat | 9 percent |
| other vegetables, citrus fruit, meat, butter | 6 percent |
| other vegetables, citrus fruit, butter, milk | 6 percent |
| other vegetables, citrus fruit, meat, milk | 6 percent |

There were 45 different combinations of 5 foods where there were failures to meet yardstick standards. The 5 highest combinations, accounting for 34 percent of the total cases were:

| | |
|---|-----------|
| green and yellow vegetables, other vegetables, citrus fruit, meat, milk | 8 percent |
| green and yellow vegetables, other vegetables, citrus fruit, butter, milk | 8 percent |
| green and yellow vegetables, other vegetables, citrus fruit, other fruit, milk | 6 percent |
| green and yellow vegetables, citrus fruit, other fruit, meat, milk | 6 percent |
| green and yellow vegetables, citrus fruit, meat, butter, milk | 6 percent |

There were 4 different combinations out of 27 in failures to meet yardstick requirements on 6 foods which accounted for 51 percent of the total cases. They were:

| | |
|--|------------|
| green and yellow vegetables, other vegetables, citrus fruit, other fruit, meat, butter..... | 17 percent |
| green and yellow vegetables, other vegetables, citrus fruit, other fruit, meat, milk..... | 16 percent |
| green and yellow vegetables, other vegetables, citrus fruit, other fruit, butter, milk..... | 9 percent |
| green and yellow vegetables, other vegetables, non-citrus fruit, meat, butter, milk..... | 9 percent |

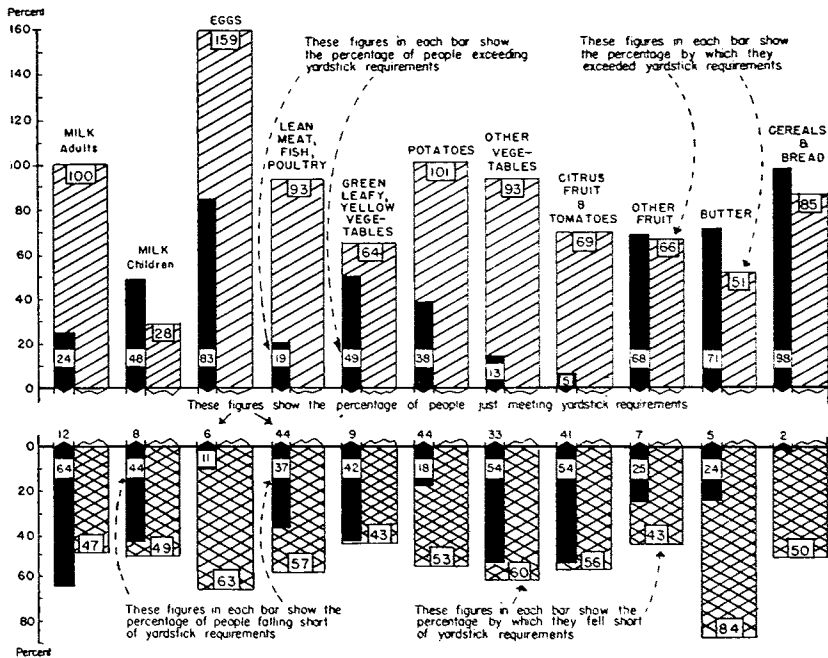
There were 10 different combinations of foods in which yardstick requirements were not met involving 7 deficiencies. The 1 combination of green and yellow vegetables, other vegetables, citrus fruit, other fruit, meat, butter, and milk is the only 1 outstanding among the 10. It accounted for 72 percent of the cases.

There were no particularly outstanding combinations of factors in which people failed to meet yardstick requirements with 8 deficiencies. The number with 9 deficiencies is so small it is not reported.

Deficiencies a Family Pattern.—Tabulation (not included because of space and overwhelming evidence in one direction) reveals that diet deficiencies follow a family pattern. In practical terms this means that if parents in the family do not have enough servings to meet a minimum yardstick standard, the odds are 95 out of 100 for all items except milk and citrus fruits that the children of the family will also be deficient in this diet item. In milk and citrus fruit the odds are about 90 out of 100, which suggests a slight tendency for parents to provide sufficient servings of these foods for their children to meet minimum standards even though the parents have insufficient servings to meet the yardstick.

Sectional Differences.—The San Luis Valley had the highest percentage of people with no diet deficiencies as measured by meeting yardstick requirements, while in the foothills area west of Fort Collins and in the suburban tract area one finds the greatest proportion of people having the largest number of deficiencies. (See appendix page 21 for graph showing sectional areas.)

Percentage of Average Excesses and Deficiencies as Measured by the Yardstick.—There was a definite tendency for persons who did not meet the yardstick requirements to be below the recommended number of servings by approximately 50 percent (see graph on this page).



In the cases where the number of servings exceeded the yardstick requirements the percentage of excess was greater than was the percentage of deficit in the cases that did not equal the yardstick requirements.

Substitutions for Foods in the Yardstick.—In the foregoing discussion an attempt has been made to determine the extent to which the food practices of the rural people of Colorado follow the recommendation for a good pattern of nutrition.

Judging the adequacy of diets according to adherence to a set pattern of foods has its limitations. Nutrients lacking because of deficient quantities of one particular food could be overcome to some extent by increased consumption of other groups supplying the deficient elements.⁹

The yardstick does not purport to furnish the total caloric needs. Other foods consumed to supply calories would also supply additional dietary essentials which might overcome some deficiencies apparently present because of failure to follow the dietary pattern of the yardstick.

In the irrigated, suburban, San Luis Valley, and Western Slope sections additional servings of green and yellow vegetables in about one third of the cases made up for the apparent failure to meet the yardstick requirement of other vegetables and fruits. However, usually an individual lacking in fruits also lacked vegetables and milk.

In the foothills, suburban, and Arkansas Valley areas a lack of meat was compensated for to some extent by a liberal consumption of milk and eggs.

A high consumption of eggs in some cases made up for the lack of milk as far as protein was concerned. However, the deficiency of calcium was not overcome by the increased use of green vegetables, which supply a small amount. Many diets were low in citrus fruits, and adequate amounts of vitamin C were not supplied by other fresh fruits or vegetables. Potatoes eaten in large quantities would supply an appreciable amount of vitamin C, but would not entirely make up for a lack of citrus fruits and tomatoes.

The deficiency in some minerals and vitamin B which would exist if the cereals and bread eaten were not of the whole-grain or enriched variety would be overcome to some extent by consumption of additional quantities of vegetables, eggs and meat.

When consideration is given to the extent of possible substitutions, one observes that the dietary levels of persons included in this study are not as low as when viewed only on the basis of rigid adherence to the yardstick. In spite of the substitutions mentioned above, which would improve the picture, certainly many opportunities for improvement of diets are open.

⁹For a general classification of foods and contributions to body economy, see Howe, Paul E., Pritchett, Claud S., and Berryman, George H., Classification of foods, and factors for conversion of their packaging units to pounds. *J. Am. Diet. Assn.*: 18(7), 435, 447.

Attitudes

The percentage of people who did not meet the yardstick requirement yet who thought they had enough ranges from 65 percent to 100 percent (table 3).

Table 3.—Percentage distribution of people not meeting yardstick requirements thinking servings enough and those thinking servings not enough classified by food item.

| | Enough | Thought not enough |
|---|--------|--------------------|
| Fresh, canned, dried fruit | 65 | 35 |
| Green leafy and yellow vegetables | 66 | 34 |
| Eggs | 66 | 34 |
| Butter | 69 | 31 |
| Lean meat, fish, poultry | 77 | 23 |
| Citrus fruit and tomatoes | 78 | 22 |
| Milk | 81 | 19 |
| Other vegetables | 85 | 15 |
| Potatoes | 100 | 0 |
| Cereals and bread | 100 | 0 |

The high percentage of those who thought they had enough although they did not meet yardstick requirements has several possible explanations. Some substituted other foods for a portion of the recommended number of servings. Some probably did not know the recommended number of servings for various food items. Furthermore, if there was a favorable attitude toward a given food, some means was usually devised whereby a sufficient amount of that food or a substitute was obtained to satisfy the personal and family needs of the individual. Conversely, where there was not a favorable attitude toward a given food, the presence or absence or ease of obtaining a given food made little difference in consumption. Change in attitudes of disfavor toward certain foods and information about desirable consumption are largely problems of education.

Reasons for Insufficiency

Cost was the most important single reason given by those not meeting yardstick requirements who thought they did not have enough.¹⁰ Non-availability (which included difficulty of getting to town, no garden or orchard, and not sold in country stores), dislike, and lack of refrigeration for certain foods were frequently given reasons (see table 4).

¹⁰Caution should be exercised about the literal acceptance of reasons given by people as causes for not meeting yardstick requirements of certain foods. This is because of both possible rationalization and public and private attitudes. Further investigation in these two fields would be necessary before final weight could be ascribed to these factors in contemplated correction programs.

Table 4.—Percentage distribution of reasons given by persons whose frequency of eating specific foods did not meet yardstick requirements and who thought they did not have enough.

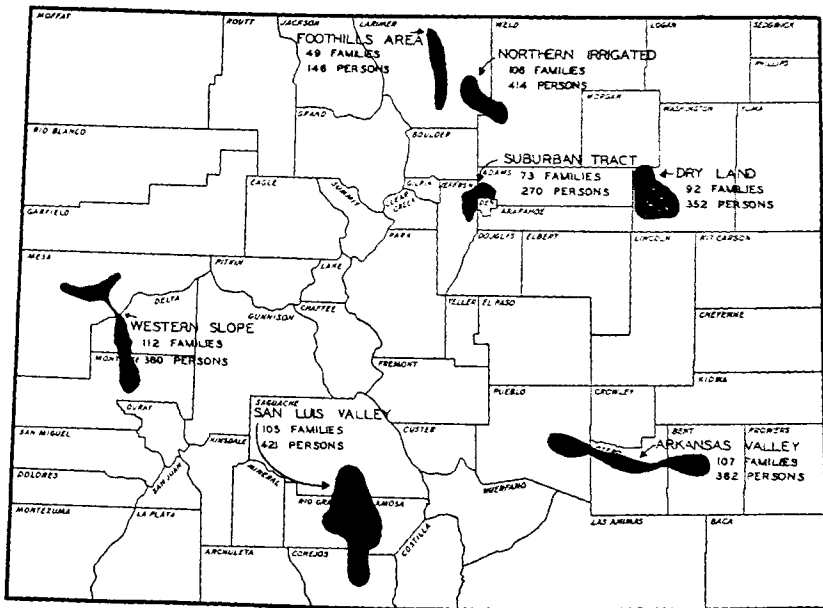
| Reason for insufficiency | Vegetables | | | | | | Fruits | |
|-----------------------------|------------|------|------|--------|---------------------|------|--------|-------|
| | Milk | Eggs | Meat | Butter | Green and yellow | | Citrus | Other |
| | | | | | Other | | | |
| Cost | 32 | 48 | 72 | 72 | 45 | 45 | 75 | 75 |
| Not available | 7 | .... | 14 | 6 | 30 | 35 | 15 | 15 |
| Dislike | 28 | 30 | .... | 4 | 16 | 8 | 7 | .... |
| No refrigeration | 6 | .... | 10 | 14 | .... | .... | .... | .... |
| Disagrees with | 4 | 11 | .... | .... | .... | .... | .... | .... |
| Get enough in food | 12 | 5 | .... | .... | .... | .... | .... | .... |
| Prefer other liquid | 5 | .... | .... | .... | .... | .... | .... | .... |
| Other | 6 | 6 | 4 | 4 | 9 | 12 | 3 | 10 |
| Total percentage | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Notes:

APPENDIX

Scope.—Material in this bulletin is part of a study entitled "Some Health Practices and Attitudes and Related Problems of Rural Families in Colorado." It is based upon data obtained by interviewing homemakers of 644 rural families consisting of 2,365 individuals over 2 years of age in 7 widely scattered and representative sections of Colorado which are shown on the map below.

SAMPLE AREAS IN WHICH STUDY WAS MADE



The data from the Dry Land, Northern Irrigated, Foothills, and Suburban Tract areas were obtained in the fall of 1940, that from the Arkansas Valley and San Luis Valley in the early summer of 1942, and that from the Western Slope in the early fall of 1942. Even though all the data were not gathered at the same time, evidence obtained during the interviews suggests that no material changes had occurred in diet habits and attitudes over the time span between the first and last interviews. The procedure followed has the decided advantage of indicating attitudes and practices with reference to diet which existed 6 to 9 months after the war began and before anything except sugar had been rationed.

Basis of Interpreting and Tabulating Data.—Homemakers indicated the number of servings a week for each diet item and expressed an attitude as to whether or not they thought they had enough. From evidence submitted by the homemaker the normal number of servings of each food item throughout the year was calculated. No effort was made to weigh or measure foods consumed, but considerable time was taken in defining terms and arriving at common understanding on such things as "what constitutes a serving." In tabulating the data, if the frequency of serving any diet item given by the homemaker met the recommended nutritional yardstick taken as a standard, the person was classified under the "Yes" column of "Met Recommendation" and no consideration was given to dissatisfactions which might have been expressed. If the number of servings was below the minimum of the yardstick recommendation, the person was classified as "No" and placed in the "Not Enough" column if dissatisfaction was expressed, or in the "Enough" column if no dissatisfaction was expressed.

Standard Error of Percentages in Graphs.—The standard error of percentages given in table 5 are the percentages which may be added to or subtracted from the percentages given on the charts, and the odds are 1 to 20 that they will not exceed these amounts.

Table 5.—Standard error of percentage for State average and section averages for each item of the yardstick.

| | State | Dry land | Irrig- ated | Foot- hills | Sub- urban | Arkan- sas | San Luis | Western Slope |
|--------------------------------|-------|-------------|----------------|----------------|---------------|---------------|-------------|------------------|
| Milk | 1.9 | 4.9 | 4.8 | 7.8 | 5.5 | 4.9 | 4.5 | 4.8 |
| Eggs | 1.2 | 2.5 | 3.3 | 6.3 | 4.8 | 2.9 | 2.4 | 2.8 |
| Meat | 1.9 | 5.2 | 4.7 | 8.1 | 6.0 | 4.7 | 4.4 | 4.4 |
| Green and yellow vegetables | 2.0 | 5.2 | 4.7 | 7.0 | 5.8 | 4.0 | 4.6 | 4.8 |
| Other vegetables | 2.0 | 5.2 | 4.8 | 7.3 | 5.7 | 4.9 | 4.8 | 5.0 |
| Potatoes | 1.7 | 3.2 | 4.1 | 8.1 | 12.8 | 4.3 | 3.2 | 3.5 |
| Citrus fruit | 2.0 | 5.1 | 4.8 | 7.4 | 5.9 | 5.0 | 4.8 | 4.8 |
| Other fruit | 1.7 | 5.2 | 3.9 | 2.4 | 5.7 | 3.7 | 4.1 | 3.0 |
| Butter | 1.7 | 3.6 | 4.5 | 6.2 | 6.1 | 4.0 | 3.4 | 4.1 |
| Cereals and bread | .4 | 1.0 | 1.0 | ... | 1.0 | 1.1 | .6 | 1.1 |

Validity and Reliability of Data.—Many tests were used to insure a high degree of validity and reliability of the data. For a discussion of the tests used, together with a statement of the degree of reliability and validity achieved, see Young, Beatrice C., Attitude toward and observance of some health practices by rural people of Colorado, unpublished master's thesis. Colorado State College of A & M A, Fort Collins, 1941.

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