

# Plant-Based Trends in California's School Lunches

A 5-Year Assessment

September 2024



**Friends of the Earth**

**Climate-Friendly Cuisine**

For Healthy Kids and a Healthy Planet



## Acknowledgements

This report was written by Nora Stewart of Friends of the Earth, with significant contributions from Reka Vasicsek, who led the school district menu data analysis. We appreciate Friends of the Earth's Food and Agriculture Team, including Chloë Waterman, Kendra Klein, Kari Hamerschlag, Catherine O'Brien and Lisa Archer for providing valuable feedback and review. Finally, for her beautiful design work, we thank Keiko Okisada. All the findings, recommendations and any errors in this report are solely the responsibility of Friends of the Earth.

## Contact Us

To receive resources or support for plant-based menu development, email [climatefriendlyfood@foe.org](mailto:climatefriendlyfood@foe.org) or visit [www.climatefriendlyschoolfood.org](http://www.climatefriendlyschoolfood.org).



# I. SUMMARY

With the climate crisis intensifying and many American children continuing to battle diet-related diseases, California's schools are taking meaningful steps to introduce more healthy, culturally diverse, climate-friendly menu offerings. This report provides a 5-year snapshot of Friends of the Earth's menu analysis comparing 2019 and 2023 school menu entrées served at the 25 largest school districts across the state.

Our research reveals that over the past five years, California's school districts have made remarkable progress, increasing the number of plant-based lunches offered from only 7% of menu choices in 2019 to 11% in 2023. The addition of 41 new plant-based dishes, including culturally diverse options like chana masala bowls, vegan tamales, tofu ramen, and veggie falafel wraps, affirms a commitment to cultural inclusivity and environmentally friendly options.

High schools and middle schools have shown impressive menu improvements, with more than half of schools (56%) offering plant-based menu options each day in 2023 compared to only 36% of schools offering daily plant-based offerings in 2019. Elementary schools, while slower in adopting daily plant-based options, have significantly increased their plant-based offerings from

only 16% of elementary schools providing a plant-based option at least once a week in 2019 to 60% of schools offering a weekly plant-based option in 2023.

Despite these gains, one quarter of districts still do not offer plant-based entrées and another quarter of districts only offer nut butter and jelly as a plant-based option, leaving many students without access to adequate plant-based school meals. This can mean that students who require plant-based options for health, religious, philosophical, or other reasons go hungry at school, and many more students who simply want to diversify their protein intake are left with limited choices.

Overall, our research found that despite improvements in the frequency and diversity of plant-based meal offerings, there remains substantial room for improvement. Along with technical support from Friends of the Earth and other organizations, a major facilitator of the progress thus far has been supportive policies, particularly California's state-level investments in school meals. By the same token, we know that further [policy change](#) to facilitate healthy, climate-friendly menus is essential to ensure that school districts can nourish this generation of children and protect the planet they will inherit.

## Student Demand for Plant-Based Menus

Whether for environmental, religious, health, or cultural reasons, demand for plant-based foods is growing rapidly, especially among youth. A recent Chartwells poll found that 37% of students said they would eat school lunch more often if there were more vegetarian and vegan choices! Today's generation of [students recognize the significant benefits](#) of plant-based school meals, and California school districts are stepping up to meet the demand.



## II. KEY TRENDS IN PLANT-BASED SCHOOL MEALS

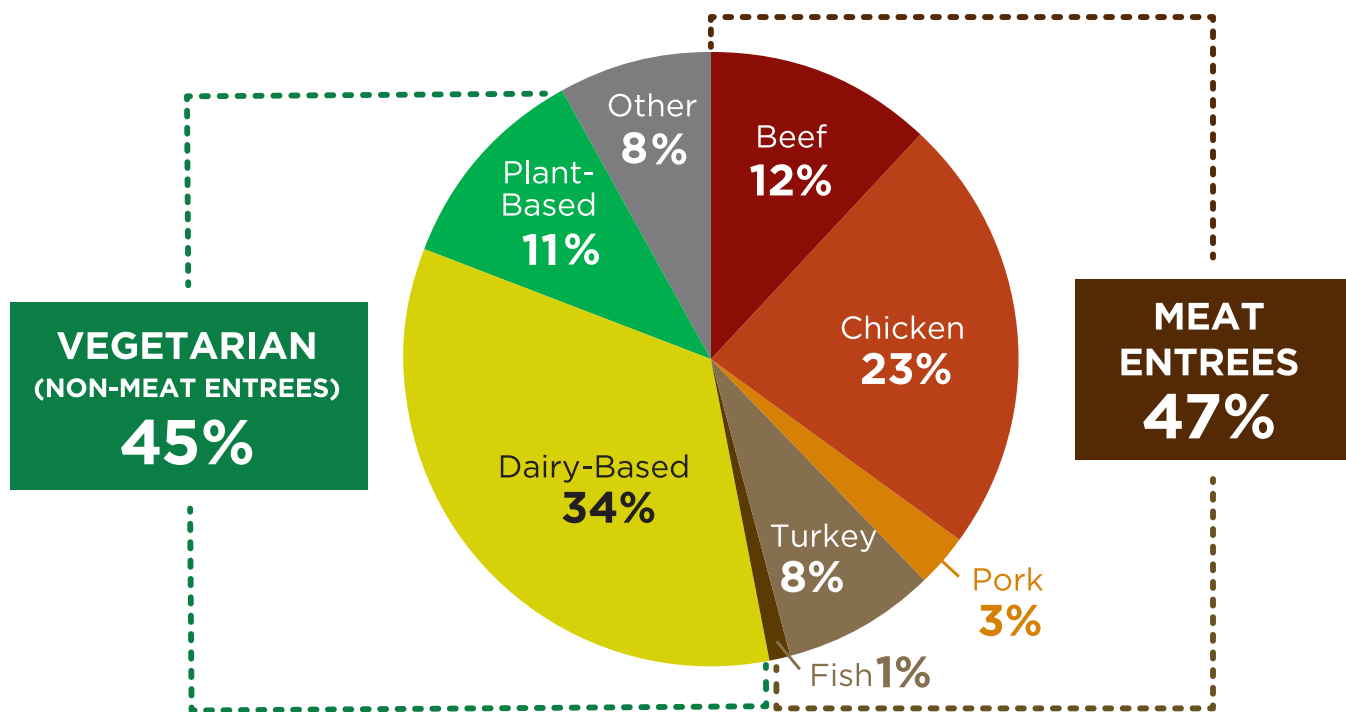
### Plant-Based Entrée Offerings Increase by 57% from 2019 to 2023

Our analysis shows significant progress on the number of plant-based entrées featured on California's largest district menus. Plant-based entrées saw the biggest increase between 2019 and 2023 compared to all other protein categories, rising from just 7% of total entrées in 2019 to 11% in 2023.

Meat proteins decreased by 6% from 2019 to 2023. All meat protein categories (beef, chicken, pork, fish) decreased between 2019 and 2023, except for turkey. Beef continues to represent a large portion (12%) of all school menu entrées offered, similar to 2019.

[Information on our methodology is included here.](#)

Figure 1: **Frequency of 2023 Menu Entrées by Protein\* Category**



\*Our analysis weighted each entrée by how often it was served during the month.

\*\*For unknown entrées, the protein could not be identified based on product and menu research.

## Despite Impressive Plant-Based Options, Many Districts Lag Behind

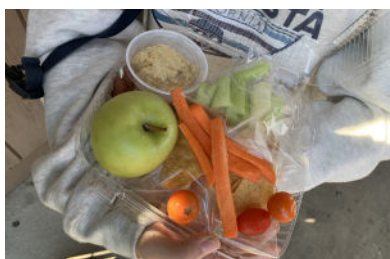
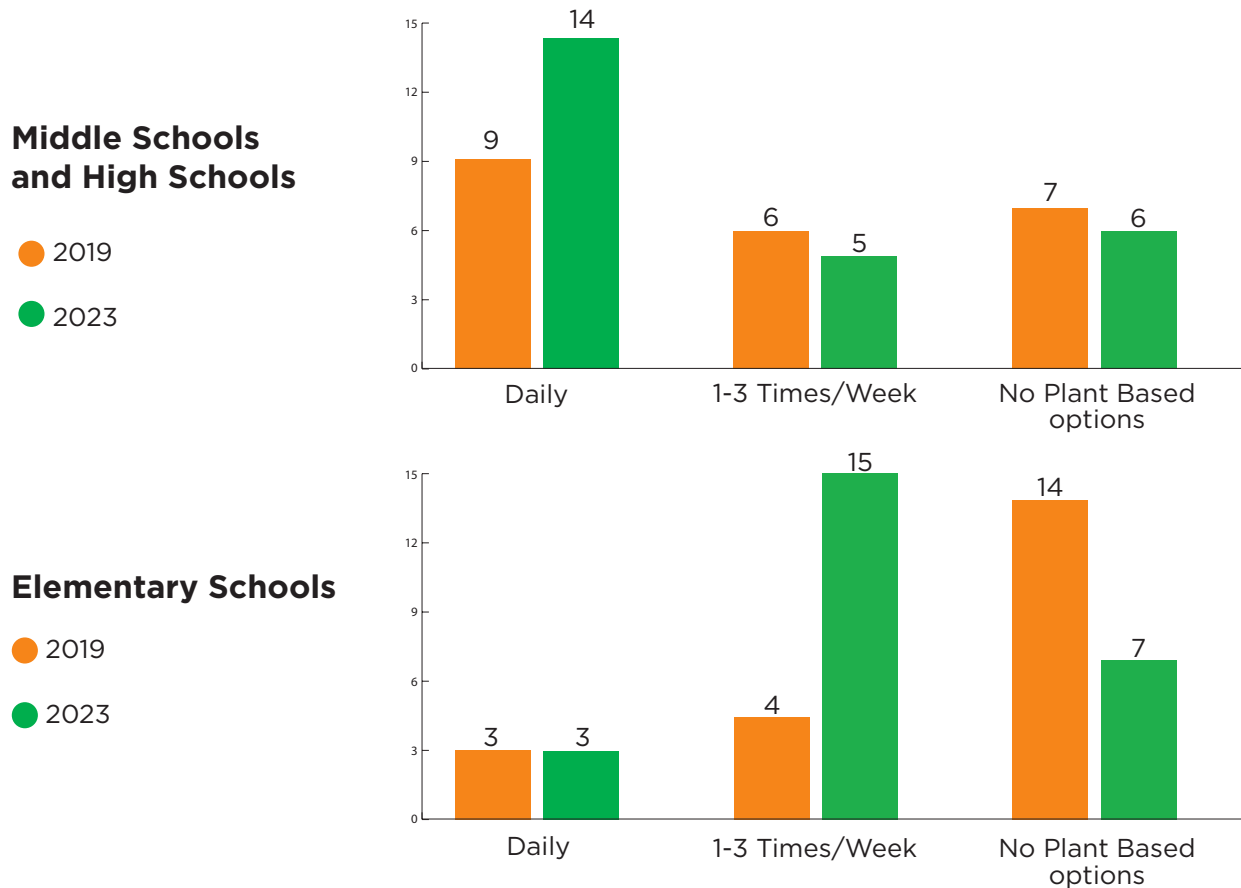
Our analysis shows tremendous progress over the past five years in terms of the number of plant-based lunches offered. In 2023, 74% of all schools in our sample served plant-based entrées daily or weekly compared to only 44% of districts in October 2019, a 68% increase.

High school and middle schools are serving plant-based offerings more frequently, with 14 out of 25 (56%) featuring a plant-based entrée every day in 2023, compared to only 9 out of 25 middle and high school menus (36%) in 2019.

In contrast, the number of elementary districts serving daily plant-based options has not changed, with only 3 out of 25 districts (12%) offering plant-based entrées every day. Although trailing behind high schools, the number of elementary schools offering weekly plant-based entrées has almost quadrupled in the past 5 years, rising from 16% in 2019 to 60% in 2023.

Despite plant-based lunches appearing more frequently on menus at all grade levels, more than a quarter (26%) of California's largest elementary and middle/high school districts still do not offer any plant-based entrées and another 26% only offer nut butter and jelly as a plant-based offering, leaving many students without options.

Figure 2: **Availability of Plant-Based Entrée Offerings**





## Culturally Inclusive Plant-Based Entrées Expand at Many Schools, but Other Districts Serve Only PB&J

California’s 25 largest districts featured 102 different plant-based entrées in October 2023, with 41 new dishes added to menus since October 2019. These new culturally diverse entrées include chana masala bowls, vegan tamales, tofu ramen, and veggie falafel wraps.

In contrast, our analysis found that 13 districts (5 elementary and 8 high school) still rely on nut butter sandwiches as the only plant-based option on school menus. While providing daily nut butter sandwiches is still helpful to students following plant-based diets, including nut butter sandwiches as the sole plant-based option falls short of meeting the need to provide a healthy, tasty, and culturally relevant plant-based option to all students.

## More Vegan and Vegetarian Options Featured Among Most Popular Entrées

We identified the 15 most popular menu offerings based on frequency served. Vegetarian offerings account for 6 of the top 15 menu offerings in October 2023, compared to only 3 of the top 15 offerings in October 2019. New additions include plant-based specialty bowls, vegetarian specialty bowls, and yogurt parfaits.

Especially notable is that plant-based vegan bowls and specialty items, which are often scratch-cooked and made with whole plant-based foods, landed in the top 10 for the first time, and specialty vegetarian entrées were ranked as #11 (rising from #23 in 2019).

**Figure 3: Top 15 School Lunch Entrées In California’s 25 Largest School Districts in October 2023**

1	Salad with Meat	9	Plant-Based Bowl/Vegan Option (V)*
2	Yogurt Parfait (Veg)	10	Chicken and Turkey Wrap
3	Cheese Pizza (Veg)	11	Specialty Vegetarian Entrées (Veg)**
4	Chicken Sandwich	12	Nut Butter Sandwiches (V)
5	Chicken Bowl Entrée	13	Hot Beef Entrée
6	Meat Pizza (HP)	14	Bean and Cheese Entrée (Veg)
7	Cheeseburger/Hamburger	15	Popcorn Chickens / Chicken Nuggets
8	Deli Meat Sandwich (HP)		

**(V)\*** Vegan / Plant-Based  
**(Veg)** Vegerarian

**(HP)** Contains highly processed meat products

\*Examples of plant-based bowls or specialty entrées include tofu noodle bowls, plant-based wraps and vegan salads.

\*\*Examples of specialty vegetarian entrées include sandwiches, protein packs with cheese, pasta marinara, and veggie burgers

## Why are California's School Meals Improving?

In the past five years, California has implemented several progressive school food policies that have significantly improved the quality, sustainability, and accessibility of school meals, including:



### Free Meals for All Students

Established in 2021, the [Universal Meals Program](#)

allows all students to eat breakfast and lunch for free, regardless of income status.



### Farm to School Programs

California awarded \$25.5 million in 2022 and an additional [\\$52.8 million](#) in 2024 to fund hundreds

of farm to school projects, prioritizing organic and climate-smart school meals. This initiative ensures no student goes hungry with consistent access to nutritious meals.



### Kitchen Infrastructure and Staff Training

California allocated a historic \$600 million in 2022 to upgrade school kitchen

equipment and provide staff training. To qualify for funds, districts must commit to 40% or more freshly prepared on-site meals.



### Investment in High Quality Meals

California allocated \$100 million in 2022 for plant-based, sustainably produced,

locally grown, scratch-made meals, and meals for restricted diets. An additional \$23 million was awarded for more local California-grown foods.

## Significant Reductions in Highly Processed Meats and Cheese-Heavy Entrées in Just One Year

While processed meats increased on menus from 2019 to 2022 to 18% of total entrée offerings, these entrées saw significant reductions in 2023. Our analysis revealed that processed meat decreased by nearly 25% in just one year (October 2022 to 2023), with an overall 6% decrease of processed meat from 2019 to 2023. Hot dogs, which often contain highly processed meat, dropped from the tenth most popular menu item in 2019 to #21 in 2023.

Cheese-heavy entrées (both meat and vegetarian entrées combined) decreased by 54% between 2022 and 2023. This marks a significant improvement in reducing cheese-heavy entrées, which are often

carbon-intensive and high in fat, sodium, hydrogenated oils, and synthetic additives. From 2019 and 2022, these entrées increased by 8%, but the overall trend from 2019 to 2023 saw a decrease in these entrées by 13%.

Despite improvements, highly processed meats and cheese-heavy entrées are still prevalent on school menus. Processed meats still represent 14% of all menu offerings. Meat pizza and deli meat sandwiches together make up 11% of all entrées offered. These both contain processed meat, a known carcinogen according to the World Health Organization and a food that the Dietary Guidelines for Americans recommends limiting.

While funding alone cannot address all issues, we commend these investments in promoting healthy, climate-friendly school meals for all California students.



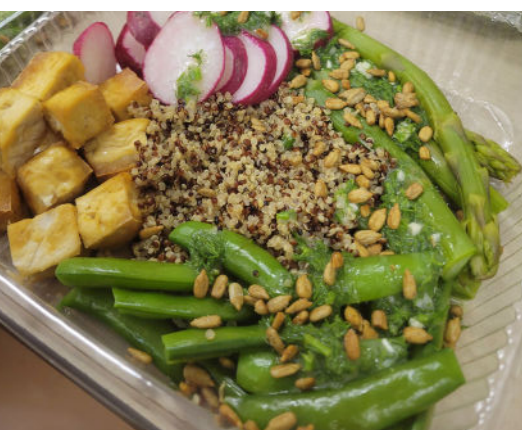
# III. DISCUSSION AND RECOMMENDATIONS

## Menu Improvements Showcase California School Meal Policies

Our analysis highlights a shift towards plant-based entrées on school menus in California's largest districts from 2019 to 2023 alongside a notable decline in meat-based and processed food options. The rise in plant-based entrées marks a substantial improvement, Menu changes have followed state policy reforms made since 2020, including substantial funding allocations for farm to school programs, kitchen upgrades, staff training, and higher quality school meals, including funding for plant-based school meals specifically.

## Support Still Needed for Higher Quality, Climate-Friendly School Meals

Shifting toward plant-based K-12 menus at the scale necessary to help combat the intertwined crises of food insecurity, climate change, and racial injustice requires multi-pronged, holistic strategies (see Figure 4). This includes [policy change](#) and technical support to schools to [overcome barriers](#) to shifting toward healthy, climate-friendly menus.





## A Comprehensive Approach is Needed for Successful Climate-Friendly School Meals



### Support for Farm to School Programs

Funding for farm to school programs supports small to mid-size growers, promotes nutrition education, and enables nourishing school meals.



### Support for Plant-Based Vendors

Vendors prioritizing non-GMO, minimally processed, plant-based, organic, ready-made products need more support in obtaining Child Nutrition labels or Product Formulation Statements to sell to districts.

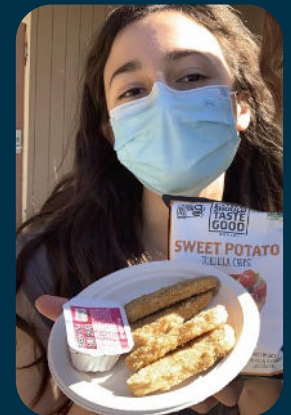


### Staff Training and Fair Wages

Staff culinary training ensures meals are safe, nutritious, and appealing to students, while also boosting staff morale by enhancing skills and confidence. Better pay will help retain and attract skilled and engaged workers.

### More Plant-Based USDA Foods Offerings

Tofu, lentils, veggie burgers, and plant-based nuggets are currently not available through the subsidized USDA Foods Program, making it harder for districts to offer plant-based entrées. Friends of the Earth's Policy Brief on the USDA Foods Program offers policy recommendations for this commodity program.



### Funding for Plant-Based School Meals

Many schools can benefit from financial resources that support expanding plant-based options, including funding for technical assistance (e.g., menuing and recipe development), procurement, student engagement (e.g., taste tests), and staff training.



### Kitchen Infrastructure

Updated kitchen equipment such as commercial ovens, tilt skillets, industrial food processors, and chef knives help staff to prepare scratch-cooked, nutritious meals.

### Marketing Support for Plant-Based Meals

Marketing materials help increase awareness, drive student participation, and encourage healthier eating habits. Visit [Friends of the Earth's webpage](#) for examples.



## IV. CONCLUSION

As our society confronts a severe climate crisis and nutrition insecurity, both of which exacerbate racial inequalities, it is crucial for school districts to serve climate-friendly, plant-based meals. Simple measures, such as replacing one or two entrées with healthy, culturally appropriate, plant-based options, can yield significant climate benefits, provide students with more choices, and foster lifelong healthy eating habits.

Along with Friends of the Earth's work, organizations such as the Chef Ann Foundation, Eat REAL, the Center for Good Food Purchasing, Conscious Kitchen, Lunch Assist, Brigade, Balanced and many others have made a huge difference in providing technical support for school nutrition, including integrating more local and plant-based food, improving nutritional quality, shifting to scratch cooking, and improving the school meal environment. We are seeing promising menu shifts that prove plant-based meals are gaining traction, including San Luis Coastal's [Thai basil lentil burger](#), Milpitas Unified's [chana masala](#), and Palo Alto USD's [vegan pho with fresh veggies](#).

We are encouraged by the creativity of California nutrition service teams alongside bold state policy investments to provide healthier school meals for students. As this report shows, we must continue shifting school menus and adjust our policies to make these plant-based menu offerings the standard. By doing so, we ensure that students receive the nutritious and climate-friendly meals they deserve.

### Culturally Diverse, Plant-Based Menu Offerings Across California

