

« MEASURES TO INCREASE F&V CONSUMPTION »

Editorial

Increasing consumption in schools

Good news. The Commission is proposing to reinforce the School Fruit Scheme (SFS). In its Common Agricultural Policy (CAP) 2020 reform proposals, the Commission proposes to increase the European Union (EU) budget to €150 million and at the same time increase the co-financing rate (from 50/75% to 75/90%).

The SFS is now in its third year of implementation. We all know how important it is to influence children's eating habits while they are being formed, ensuring lifelong positive effects. It has been very well received by the general public in the EU, providing an important public good from the CAP.

However, some Member States (MS) have not been able to fully use their allocated budget, resulting in fewer schoolchildren benefitting from the scheme. In times of budgetary austerity, it is difficult to mobilise the necessary national financial contribution. In other cases the budget has been insufficient for some MS. So although in the 2009/2010 school year, 4.7 million children in participating MS have benefited from the Scheme; this figure is too low.

In addition, the Commission is proposing to strengthen the EU financial support to the accompanying measures. The accompanying measures provide the link to agriculture, nutrition, health, environment and physical activity, working together to make the scheme much more than simply handing out fruit and vegetables to children. To give an example, this would include school visits to farms. The accompanying measures are currently fully financed from national public or private funds, putting a strain on national budgets. The Commission is proposing to co-finance the accompanying measures up to a certain threshold. The fruit is the "key to the door", but the accompanying measures is the "room" we want to get the pupils into. The SFS is an investment in the future of our school children playing its part in the fight against obesity.

With the Commission CAP 2020 proposal, we have paved the way to increase the number of schoolchildren benefiting.

Lars Hoelgaard

Special Advisor, DG Agriculture & Rural Development,
European Commission, Belgium



- E. Bere • University of Agder • Faculty of Health and Sport • Norway
- E. Birlouez • Epistème • Paris • France
- I. Birlouez • INAPG • Paris • France
- MJ. Carlin Amiot • INSERM • Faculté de médecine de la Timone • Marseille • France
- B. Carlton-Tohill • Center for Disease Control and Prevention • Atlanta • USA
- V. Coxam • INRA Clermont Ferrand • France
- N. Darmon • Faculté de Médecine de la Timone • France
- H. Bas Bueno de Mesquita • National Institute for Public Health and the Environment (RIVM) • Bilthoven • Netherlands
- ML. Frelut • Hôpital Saint-Vincent-de-Paul • Paris • France
- T. Gibault • Hôpital Henri Mondor • Hôpital Bichat • Paris • France
- D. Giugliano • University of Naples 2 • Italy
- M. Hetherington • University of Leeds • UK
- S. Jebb • MRC Human Nutrition Research • Cambridge • UK
- JM. Leclerc • Institut Pasteur de Lille • France
- J. Lindstrom • National Public Health Institute • Helsinki • Finland
- C. Maffei • University Hospital of Verona • Italy
- A. Naska • Medical School • University of Athens • Greece
- T. Norat Soto • Imperial College London • UK
- J. Pomerleau • European Centre on Health of Societies in Transition • UK
- E. Rock • INRA Clermont Ferrand • France
- M. Schulze • German Institute of Human Nutrition Potsdam Rehbruecke, Nuthetal • Germany
- J. Wardle • Cancer Research UK • Health Behaviour Unit • London • UK



IFAVA Contacts info

HEAD OFFICE
International Fruit And Vegetable Alliance
c/o Canadian Produce Marketing Association
162 Cleopatra
Ottawa, Canada, K2G 5X2

IFAVA CO-CHAIR
Melanie Richer, Canada
e-mail : mricher@cpma.ca

IFAVA CO-CHAIR
Paula Dudley, New Zealand
e-mail: paula@5aday.co.nz

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Lesson from the lost paradise: how to best induce into temptation

— Marie-Laure Frelut —

Service d'endocrinologie pédiatrique
CHU Paris Sud – Université Paris 6, France

Serious people, and scientists are part of them, do not hesitate to look far in the past, beyond classical bibliography and Pubmed citation. A team of psychologists from the university of Maastricht in the Netherlands, did so¹. **The problem they wished to solve was whether fruit consumption in children could be enhanced by prohibiting access to an appealing presentation, as opposed to regular fruits.** Appealing means that fruits were cut into pieces. Fruits were apple, pineapple and carrots.

Ninety four kids, aged four to seven years old, were randomly divided into three groups: one was prohibited eating regular fruits, the other one appealing fruits and the third one was free to choose among those two presentations. In a second phase, the children were allowed to eat freely whichever kind of fruit they preferred. Guess what happened! **The kids preferred the appealing presentation!** The restricted groups, even for appealing fruits, did not eat more than the unrestricted groups.

Some comments are required. The kids were rather old, i.e. beyond three years of age. The liking of fruits was already undermined by the education they received at home. The huge variability into fruit consumption is likely to reflect not only appetite but also familiar nutritional and educational background. The interesting point is of course that cutting fruits into pieces doubles the mean portion size consumed which shifts from an average

73±67 to 135±74 g. Two additional remarks are required: presenting ready to eat fruits to babies and toddlers is mandatory and part of normal feeding as long as the kids do not have mature chewing capacities; biting into a big fruit suggests children have been trained to do so. This way of eating takes place at earlier ages in some families than in others. An additional point to underline is that some children consumed a huge amount of fruits: more than the average weight of a common raw apple, orange or portion of any fruit. Not only does appealing presentation induce consumption but it increases portion size beyond usual amounts. The study does not say what happened the next days: **would this appealing presentation remain attractive or not and would consumption turn back to basic level?**

The restriction strategy was used in order to test variations into healthy food consumption. The point is that it is likely to be effective with any other food, including those which should be highly limited or even avoided. People who work in the field of marketing know it well and use it: packaging is intended to facilitate consumption and it does! Limited series of any product, i.e. the fear of restriction, is used to sell product to adults, from airplanes tickets to wines. **The very positive aspect of this study is that such strategies work for food which is often denied attractive presentation.** This should be kept in mind in order to support eating at all ages in healthy and sick people. Who can resist a flavor of paradise?!



RESOURCE

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Can schools make a difference to children's fruit and vegetable consumption?

— Joan Ransley —

Honorary Lecturer in Nutrition, University of Leeds, UK

Since 2004 English primary schools have been providing pupils with a free piece of fruit every school day for the first three years of school. This intervention has been shown to have an impact on children's intake of fruit and vegetables but it is not sustained when pupils no longer receive the free fruit. To maintain and improve children's intakes of fruit and vegetables beyond the intervention it seems important for schools to extend initiatives to promote fruit and vegetables beyond the age of eight years when free fruit ceases to be provided.

Improvement F&V knowledge and practices in schools

Many English primary schools have embraced this idea and found opportunities for children to learn more about fruit and vegetables through lessons *in the formal curriculum and extracurricular activities*. For example, the school curriculum enables children to learn about fruit and vegetables in Science, Design and Technology, and Personal, Social, Health Education and Citizenship. Geography, English and Art also provide some educational opportunities for children to learn about fruit and vegetables.

Outside the formal curriculum children can learn about fruit and vegetables through growing and cooking activities. The United Kingdom Royal Horticultural Society, for example, has spearheaded a national campaign called 'Grow It, Cook It, Eat It'. This campaign encourages schools to set up growing activities in school which lead to cooking and eating opportunities for participating children.

Research has shown that practical activities such as cooking and gardening facilitate a liking for fruit and vegetables. Activities such as gardening and cooking undertaken with peers and teachers in school may help young children to overcome some of their natural fear of new food, known as food neophobia. This may occur through modelling of appropriate eating behaviour, repeated exposure to foods, providing encouraging and supportive environments for eating, and practical activities which help children become more familiar with foods.

New school food standards have been introduced to improve the nutritional quality of food served at school. Provision has been made to increase the amount of fruit and vegetables in school lunches and place restrictions on the provision of foods with low nutritional value, such as chips, confectionery and soft drinks. These standards are compulsory; however, children are still at liberty to bring a packed lunch which does not conform to the new standards.

A recent intervention to improve the food and nutritional value of children's lunch boxes found that only 19% of children met the food-based guidelines for vegetables and 54% for fruit. The content and nutritional value of what children eat outside school is the responsibility of parents and other adult carers. There is some evidence that when children eat more fruit at school they eat less at home.

We know many schools are doing excellent work helping children to eat a nutritious diet by initiating projects, policies and good practice relating to food across the curriculum. But do these initiatives have an effect on children's diet?

Do school initiatives have an effect on children's F&V intake?

To investigate this we recruited a random sample of children attending 129 English primary schools. A dietary survey of 2,530 children from these schools, aged 6-7 years was conducted using The Child and Diet Evaluation Tool (CADET) to estimate the children's mean intake of foods and nutrients. In addition schools were asked to complete a questionnaire which captured information and scored five types of initiatives which may affect children's intake of fruit and vegetables:

- Gardening
- Cooking
- Catering
- Number of lessons
- Parental involvement

The findings showed that children attending schools with a gardening club and an overall high score across the five categories, ate significantly more vegetables than schools without a gardening club and a low overall score. In addition schools where parents were actively involved in initiatives to promote fruit and vegetables, children, ate more of these foods. This effect was not seen with fruit consumption.

Did the results differ in more deprived schools? The findings showed that efforts to promote fruit and vegetables to children have an effect regardless of the deprivation status of the area and the ethnic mix of the school.

This is, we believe, the first time attempt has to explore the relationship between initiatives schools themselves are taking to promote fruit and vegetables to children and their association with diet. Our findings show some encouraging results for schools that involve parents and promote fruit and vegetables through extracurricular activities such as gardening, but further works is needed to confirm these findings.

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Home gardening is associated with the dietary diversity of preschool children in the Philippines

— Aegina B. Cabalda¹, Pura Rayco-Solon¹, Juan Antonio A. Solon², Florentino S. Solon¹ —

1. Nutrition Center of the Philippines, 2332 Chino Roces Avenue Extension, Fort Bonifacio, Taguig City 1630, Philippines

2. University of the Philippines Manila, Malate City, Philippines

With undernutrition a persistent problem in most countries, the rise in food prices has stirred global concern over its impact on the prevalence of hunger and ultimately on the population's nutritional status. Dietary diversification through home gardening is a sustainable strategy and is among the approaches recognized to increase production and consumption of vitamin A-rich foods. It also has the potential to provide multiple nutrients¹.

Home gardening provides households with an option for cash-free product and easy access to fruits and vegetables. Home gardens have been associated with improved consumption of fruits, vegetables and/or nutrient intake, improved child health and nutritional status, improved household food security and income, and the empowerment of women²⁻⁹. There have been, however, few studies linking home gardening with dietary diversity¹⁰.

The aim of this cross-sectional study was to determine the association between home gardening and the dietary diversity of preschool children in an urban and semi-urban area in the Philippines. A total of 200 households with children aged two to five years were visited in the municipalities of Baras and Angono in the province of Rizal. Mothers were interviewed using a structured questionnaire. The children's dietary diversity score (DDS) was based on the number of unique food groups consumed over the past 24 hours.

Student's t-test was performed to compare means between groups (households with garden versus households without garden) while proportions between groups were compared using Pearson's χ^2 analyses. Multiple linear regression was performed to model the adjusted regression coefficients for the quantitative outcome variables by exposure variable.

There was a clear association between having a home garden and a more varied diet among preschool children. Children from households with gardens (52,5%) had significantly higher DDS compared with children who lived in homes without garden (difference=0.50, 95% CI=0.02-0.98; $P=0.040$). Even when using a minimum of 10 grams intake for each food category in computing the DDS, those with gardens had significantly higher scores (difference=0.52, 95% CI=0.01-1.02; $P=0.044$). The improvement

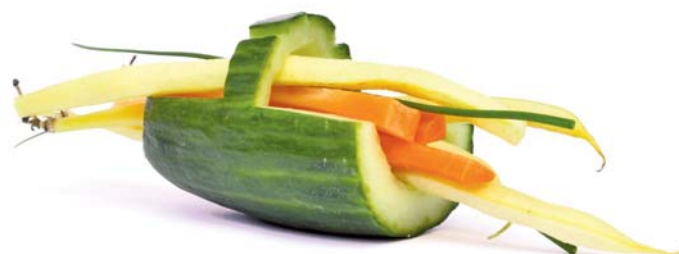
in diet diversity may be attributed to having a home garden possibly by consumption of grown produce, by saving cash that might usually be spent on buying fruits or vegetables that are now available from the garden, or by providing a source of additional income that may be used for other food items¹⁰.

Children from households with gardens were significantly more likely to eat vegetables more frequently than those in households without gardens ($\chi^2=9.06$; $P=0.029$). These findings are consistent with the findings of previous studies which showed that home gardens increased the intake of fruits and vegetables⁴⁻⁷. Results of this study also showed that two-thirds of the children from households with gardens consumed Vitamin A-rich fruits and vegetables in the last 24 hours, while half of the children in the households without gardens did so ($\chi^2=6.77$; $P=0.009$).

Having a home garden was not associated with food security. This finding was not consistent with the result of the evaluation of the homestead gardening program in Bangladesh, which showed an increase in household food security through consumption of more vegetables from the garden produce and generating income from selling garden produce³.

Maternal educational attainment and the presence of a garden were significant independent variables for DDS with or without the 10-gram minimum intake cutoff. The effect of having a garden on DDS was 0.60 (95% CI=0.13-1.08; $P=0.013$), and 0.63 (95% CI=0.13-1.13; $P=0.013$) when a cutoff of 10 grams was used per food category, when controlling for age and sex of the child as well as maternal educational attainment.

This study showed a positive association between having a home garden and the child's diet diversity and frequency of fruits and vegetables consumed. Nutrition education may be an important means not only to encourage households, even those with limited land access, to put up a home garden, but also to change eating and feeding practices. This study highlights the need for more effort to target households that do not have home gardens because they are more at risk of having a diet of poorer quality.



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