

What role can OFSP play as part of an integrated approach to address VAD?



Treating Vitamin A Deficiency (VAD) is established as one of the most effective ways to increase child survival.



■ Receiving a vitamin A capsule in Tanzania (credit HKI)

Vitamin A deficiency (VAD) is considered to be a serious public health problem when the prevalence of the blood indicator, low serum retinol, is below $0.70 \mu\text{mol/l}$. Africa and South East Asia, where over 40% of pre-school aged children are at risk, have the highest burden of this form of micronutrient malnutrition.

✦ Consequences of VAD

VAD, and under-nutrition generally, limit the intellectual potential of individuals affected, undermining economic and social development. The cognitive (ability to think and perceive) and physical damage caused by chronic under-nutrition, particularly in the 1000 days between pregnancy and age two, is largely irreversible. Populations that are under-nourished have lower individual productivity, reduced physical capacity, higher

health care costs and lower economic output, thereby impacting negatively on a country's economic growth. Under-nourished children are less likely to grow into healthy adults who can give their own children a good start in life.

Under-nutrition not only impairs development of individuals, but it also hinders development of nations. The World Bank estimates that under-nutrition significantly impacts lifetime earning potential and reduces gross domestic product by up to 3%.

✦ Benefits of Treating VAD

Treating VAD is established as one of the most effective ways to increase child survival. In settings where VAD is prevalent, improving the vitamin A status of children age 6-59 months reduces their risk of dying from measles by an average of 50%, from diarrhea by an average of 40%, and from all-cause mortality by an average of 23%. This translates into saving 645,000 lives per year in Sub-Saharan Africa.

✦ Strategies for Treating VAD

The three most common strategies for addressing VAD are: 1) large scale vitamin A supplementation programs, 2) food fortification with vitamin A, and 3) food-based approaches that encourage diet diversification and promote vitamin A rich foods, including bio-fortified foods (staple crops bred to make them richer in micronutrients). Using biofortified orange-fleshed sweetpotato (OFSP) to address VAD is a food-based intervention. Other complementary interventions include promotion of exclusive breastfeeding, home fortification with a multi-micronutrient powders or lipid-based nutrient supplements and dietary diversification with a range of vitamin A rich foods.





■ Mothers enjoy learning to make diverse dishes with OFSP (credit J.Low)

✦ Supplementation

In areas where VAD is a public health problem, children under five are at increased risk of illness and death as they tend to be born with low vitamin A stores, are exposed to frequent infection and are unlikely to receive sufficient vitamin A from breastmilk due to inadequate breastfeeding. Distributing vitamin A capsules twice a year is a cost-effective strategy to immediately improve the vitamin A status in children. However, the impact of supplementation on vitamin A levels is temporary (lasts for 2-3 months) and does not address VAD over the long term. In addition, in many African countries the challenges of providing supplementation to the “hard-to-reach”, the poorest households living in marginal conditions, result in high (over 70%), but not complete coverage of under-fives with two doses per year. The long-term financial sustainability of large scale vitamin A supplementation programs requires governments to cover the high cost of national campaigns, which in the case of most countries are presently supported by external organizations.

✦ Fortification

Vitamin A is typically added to products such as milk, sugar, vegetable oil, and flour, which are widely consumed. Artificial fortification programs, though cost-effective, can take many years to initiate as they require policy change and significant

investment by the private sector, and even longer to reach target populations. In many parts of Africa, access to fortified foods may be limited by availability and purchasing power and tend to be more available to urban than rural consumers. Even when artificially fortified foods are available, children 6-59 months of age may not consume enough to reach their daily vitamin A requirements.

✦ OFSP, a food based approach

Promoting OFSP is an effective approach for reducing VAD in African countries, especially in rural areas, for several reasons:

- 1) Sweetpotato is already widely grown in many countries
- 2) Many OFSP varieties have extremely high levels of bio-available pro-vitamin A
- 3) The crop tends to be grown by women, who also bear the responsibility for child feeding
- 4) Children like the taste, and
- 5) The agronomic characteristics of OFSP and market value make it an attractive crop for all types of households, including the poor who may be hard to reach by other interventions.

Just one small root (100-125 grams) of most OFSP varieties can supply the recommended daily allowance of vitamin A for children under five years of age. A combination of multiple interventions, which requires effective coordination between agencies involved in health, nutrition and agriculture, is the most effective way to reach populations most at risk of VAD and ensure a sustained outcome.

OFSP focused food-based interventions complement supplementation & artificial fortification efforts to control VAD.

The Reaching Agents of Change (RAC) Project advocates for increased investment in orange-fleshed sweetpotato food-based approaches to combat vitamin A deficiency (VAD) among children less than five years old and their mothers. RAC also builds institutional capacity to design and implement gender sensitive projects to ensure wide access and utilization of orange-fleshed sweetpotato in selected African countries. Its efforts contribute to the broader Sweetpotato for Profit and Health Initiative (SPHI) which aims to improve the lives of 10 million African families by 2020.

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