WHAT'S HOT AND WHAT'S NOT AT MBAO - 2012

(METHYL BROMIDE ALTERNATIVES OUTREACH)

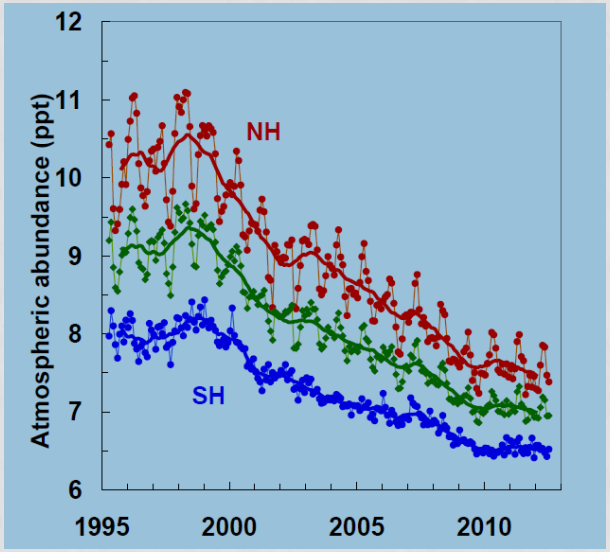
TOM STARKEY

MBAO

- Orlando, FL Nov 6 & 7, 2012
- 200 Registered
- 22 Different Countries
- Concurrent session –Preplant or Postharvest
- 20 minute presentations

JAMES BUTLER, NOAA, MBR IN THE ATMOSPHERE

- All compounds monitored have decreased in last 10 years.
- 13.8% decrease in measured gases since Montreal Protocol
- MBr holding steady not changing much ~2.3 ppt
- The Ozone hole is still there



DAVID DONALDSON, EPA, CUE'S

- Estimate close of ozone hole by 2065
- Skin cancer most common cancer in US
- Melanoma 6th most fatal cancer
  - 1960 1:800 chance
  - 2009 1:50 chance
- Mexico and China - highest consumption of MBr
- QPS – under fire but US supports its use and will continue
- US is 1 of 4 countries that use CUE gas (Initially there were 17 countries)

RICK KEIGWIN, EPA, UPDATE ON RED'S

- On target for new labels in Dec 2012
- Good resource – "Soil Fumigant Toolbox"

http://www.epa.gov/opp00001/reregistration/soil_fumigants/

RICK KEIGWIN, EPA, UPDATE ON RED'S

- Registration review process will begin again in 2013
  - This time to include DMDS and 1,3-D plus others
  - Focus meeting – early 2013
  - Work plans and comment period to begin Sept.2013
  - EPA's funding for this comes from congress
  - Expected to take 6 years

ROBT BACA, APHIS, QPS

- APHIS has recently reorganized due to retirements and lack of funding
- 2011 Plant Protection & Quarantine (PPQ)
  - 79% Import, 21% Export
  - Fruit & Veg 72%, Other 21%
  - Chile 65% Grapes
  - Peru 15% Asparagus
  - Italian Tile – Snails – 3%
- QPS – Montreal Protocol - no schedule expiration
  - Some Parties question this
  - Not up for discussion as far as APHIS is concerned

ABRAHAM GAMIEL – MBR IN ISRAEL

- With reduction in MBr – pathogens have increased 3X
- They can use – 1,3-D, DMDS, Formalin
- They can't use – PIC, 1,3-D+Pic, MI
- They combine solarization and fumigation
- All fumigation with VIF
- They have a process called "Under-bed fumigation"
- Certain soil can cause rapid decay of fumigants. Soils are first tested

ANDREA MINUTO – MBR IN ITALY

- No MBr
- Dazomet – 50% reduction in rate, only 1x in 3 yrs
- MP/MS – until 2014, 1/3 reduction in rate, only 1x in 3
- PIC, not yet reduced
- 1,3-D not yet reduced, but must get authorization
- DMDS – most promising
- Other approaches – use of biocontrol agents (Trichoderma)in addition

HUSEIN AJWA, TIF AND CUTTING

- Compared TIF and PE plastic cut a day 7
  - Peak for PE about day 2-3
  - Nothing came off TIF until it was cut
- Best time to cut plastic (TIF) – 5,10 or 16 days – PicChlor 60
  - Cut 5 days – 45 ug/m2/sec
  - Cut 10 days – 10 ug/m2/sec
  - Cut 16 days - <5 ug/m2/sec
- Tarp should remain for 7 days for <200 lbs/a, 10 days for 300 lbs/a

EDGARD CHOW – TIF PLASTIC

- HDPE has 3 layers
- VIF – 3-5 layers
- TIF – 7 layers
- There is an 85% difference in peaks between HDPE and TIF
- Fumigation levels under TIF? – try 50% of HDPE

- Question raised – what is good for seedling quality may not be good for long-term disease control

SUDUAN GAO TIF PLASTIC

- She found 2/3 HDPE rate to be best for weed, nematode and disease control

DAVID SULLIVAN – PIC CHLOR 60 UNDER HIGH BARRIER PLASTIC

- Bed fumigation – used herbicide imbedded in plastic as a treatment
- Under high barrier plastic the greatest concentration under the plastic is within the first 100 hours

JOHN THOMAS – USE OF CARBONATED TELONE AND PLASTICS

- Carbonization – CO_2 is infused in gas and then used to deliver the fumigant rather than N_2
- Gas dispersed faster, deeper and wider than non-carbonated
- VIF – more weeds and nematodes than TIF
- Trt with CO_2 was best

STEVE FENNIMORE – STEAM APPLICATOR

- 2 ways to steam soil –
  1. Static – slowest
  2. Mixing soil

1. Steam can only penetrate about 25 cm
2. Cost ~$5700/a
3. Time – 31 hours/a
   1. 20 a @10 hr/day = 3 days/a = 60 days for 20 a
4. Goal is 8 hours /a (still 20 days?)

FRANK SANCES – MUSTARD BASED AMENDMENT

- Used 2,000lb/a
- Did not control weeds
- Did not control diseases
- Did not control nematode
- $4,000/a

DENNIS WARKENTIN - SERENADE® -

- Bacillus subtilis strain QST 713
- Biofungicide – FRAC 44
- Colonize roots
- Antimicrobial activity
- Induces plant response
- Promote plant growth
- Grows along with roots
- Unlikely to develop resistance
- 2 qts/a

A SESSION ON ANAEROBIC SOIL DISINFESTATION (ASD)

- A potential alternative to chemical fumigation for controlling pathogen, weeds and nematode
- Strip/bed culture - ASD
  1. A easily decomposed carbon source is added and incorporated into soil – This stimulates rapid microbial growth and respiration
  2. Beds are covered with plastic and drip lines
  3. Beds are irrigated with drip lines to saturation
     1. As a result, organic acids are formed by anaerobic conditions

ASD POINTS

- Trichoderma takes off
- If soliarization occurs, this is best for weed control
- In CA and FL 3-9tons/a of organic matter added
- In Calif ASD does not work well for weeds since soliarization temps do not get high enough

12-15 PRESENTATIONS ON ALTERNATIVE FUMIGANT RESULTS

- Stanley Culpepper – TE-3 results – later
- Nutsedge control using Metam Potassium + Integrate® (Engage Agro)which is designed to reduce water surface tension and improve lateral movement of water within beds
  - Best for sandy soils
  - up to 1 gal/a/month
  - It's use reduced nutsedge by 30% compared to Metam Potassium fumigation alone

- A new nematicide in the works – MCW-2 (fluensulfone) – actually kills nematode, preplant application

- MCW-2 480 EC starts working on contact
  - Reduced locomotion/ Paralysis
  - Cessation of feeding 1-hour after exposure
  - Reduction in ability to infest
  - Developmental effects on eggs: Eggs do not develop
  - Reduced egg laying, (Eggs are retained in nematodes)
  - Reduced hatching
  - Juveniles that hatch don't survive
  - Treated nematodes lay non-viable eggs

- MCW-2 480 EC is a true nematicide, kills nematodes by contact
- Irreversible nematicidal activity leading to death of the target nematodes rather than temporary nematostatic activity as seen with organophosphates and carbamates.

- Purslane (Potulaca) – an extremely favorable root knot nematode host