

Environment

Outbreaks worsen

Insect 'swarms' spur US West push to fight pests

ARLINGTON, Ore., June 27, (AP) — Driving down a windy canyon road in northern Oregon rangeland, Jordan Maley and April Aamodt are on the look out for Mormon crickets, giant insects that can ravage crops.

"There's one right there," Aamodt says. They're not hard to spot. The insects, which can grow larger than 2 inches (5 centimeters), blot the asphalt.

Mormon crickets are not new to Oregon. Native to western North America, their name dates back to the 1800s, when they ruined the fields of Mormon settlers in Utah. But amidst drought and warming temperatures - conditions favored by the insects - outbreaks across the West have worsened.

The Oregon Legislature last year allocated \$5 million to assess the problem and set up a Mormon cricket and grasshopper "suppression" program. An additional \$1.2 million for the program was approved earlier this month.

It's part of a larger effort by state and federal authorities in the US West to deal with an explosion of grasshoppers and Mormon crickets that has hit from Montana to Nevada. But some environmental groups oppose the programs, which rely on the aerial spraying of pesticides across large swaths of land.

Maley, an Oregon State University Extension Agent, and Aamodt, a resident of the small Columbia River town of Arlington, are both involved in Mormon cricket outreach and surveying efforts in the area.

In 2017, Arlington saw its largest Mormon cricket outbreak since the 1940s. The roads were "greasy" with the squashed entrails of the huge insects, which damaged nearby wheat crops.

Rancher Skye Krebs said the outbreaks have been "truly biblical."

"On the highways, once you get them killed, then the rest of them come," he explained. Mormon crickets are cannibalistic and will feast on each other, dead or alive, if not satiated with protein.

The insects, which are not true crickets but shield-backed katydids, are flightless. But they can travel at least a quarter of a mile in a day, according to Maley.

Aamodt fought the 2017 outbreak with what she had on hand.

Infestation
"I got the lawnmower out and I started mowing them and killing them," she said. "I took a straight hoe and I'd stab them."

Aamodt has organized volunteers to tackle the infestation and earned the nickname "cricket queen."

Another infestation last year had local officials "scrambling," Maley said.

"We had all those high-value crops and irrigation circles," he explained. "We just had to do what we could to keep them from getting into that."

In 2021 alone, Oregon agricultural officials estimate 10 million acres of rangeland in 18 counties were damaged by grasshoppers and Mormon crickets.

Under the new Oregon initiative, private landowners like farmers and ranchers can request the Oregon Department of Agriculture (ODA) survey their land. If ODA finds more than three Mormon crickets or eight grasshoppers per square yard it will recommend chemical treatment. In some areas near Arlington surveyed in May soon after the hatch there were 201 Mormon crickets per square yard.

State officials recommend the aerial application of diflubenzuron. The insecticide works by inhibiting development, preventing nymphs from growing into adults. Landowners can be reimbursed for up to 75% of the cost.

Diana Fillmore is a rancher participating in the new cost-sharing initiative. She says "the ground is just crawling with grasshoppers" on her property.

ODA recommended she treat her 988-acre ranch in Arock in southeastern Oregon.

As the program's protocol calls for applying insecticide to only half the proposed area, alternately targeting swaths then skipping the next one, this means nearly 500 acres of her land will actually be sprayed.

Fillmore decided to act, remembering last year's damage. "It was horrible," Fillmore said. "Grasshoppers just totally wiped out some of our fields." She was forced to spend \$45,000 on hay she normally wouldn't have to buy.



Maley



April Aamodt holds a Mormon cricket that she found in Blalock Canyon near Arlington, Ore. on Friday, June 17, while OSU Extension Agent Jordan Maley, (far right), looks at more of the insects on the road. Both are involved in local outreach for Mormon cricket surveying. (AP)

Health

Moderna COVID jabs now an option for older kids in US

Tweaked shots boost omicron protection: Pfizer

NEW YORK, June 27, (AP) — Pfizer announced Saturday that tweaking its COVID-19 vaccine to better target the omicron variant is safe and works — just days before regulators debate whether to offer Americans updated booster shots this fall.

The vaccines currently used in the US still offer strong protection against severe COVID-19 disease and death -- especially if people have gotten a booster dose. But those vaccines target the original coronavirus strain and their effectiveness against any infection dropped markedly when the super-contagious omicron mutant emerged.

Now with omicron's even more transmissible relatives spreading widely, the Food and Drug Administration is considering ordering a recipe change for the vaccines made by both Pfizer and rival Moderna in hopes that modified boosters could better protect against another COVID-19 surge expected this fall and winter.

Pfizer and its partner BioNTech studied two different ways of updating their shots -- targeting just omicron, or a combination booster that adds omicron protection to the original vaccine. They also tested whether to keep today's standard dosage -- 30 micrograms -- or to double the shots' strength.

In a study of more than 1,200 middle-aged and older adults who'd already had three vaccine doses,

Pfizer said both booster approaches spurred a substantial jump in omicron-fighting antibodies.

"Based on these data, we believe we have two very strong omicron-adapted candidates," Pfizer CEO Albert Bourla said in a statement.

Pfizer's omicron-only booster sparked the strongest immune response against that variant.

But many experts say combination shots may be the best approach because they would retain the proven benefits of the original COVID-19 vaccine while adding new protection against omicron. And Pfizer said a month after people received its combo shot, they had a 9 to 11-fold increase in omicron-fighting antibodies. That's more than 1.5 times better than another dose of the original vaccine.

Preliminary

And importantly, preliminary lab studies show the tweaked shots also produce antibodies capable of fighting omicron's genetically distinct relatives named BA.4 and BA.5, although those levels weren't nearly as high.

Moderna recently announced similar results from tests of its combination shot, what scientists call a "bivalent" vaccine.

The studies weren't designed to track how well updated boosters prevented COVID-19 cases. Nor

is it clear how long any added protection would last.

But the FDA's scientific advisers will publicly debate the data on Tuesday, as they grapple with whether to recommend a change to the vaccines' recipes -- ahead of similar decisions by other countries.

Also:

NEW YORK: There is now a second COVID-19 option for kids ages 6 to 17 in the US.

The Centers for Disease Control and Prevention on Friday announced it is recommending Moderna shots as an option for school-age kids and teens. This group has been able to get shots made by Pfizer since last year.

CDC sets the federal government's vaccine guidance for US doctors and their patients.

Last week, the Food and Drug Administration authorized the shots -- full-strength doses for children ages 12 to 17 and half-strength for those 6 to 11. The doses are to be given about a month apart. An expert advisory panel this week voted unanimously to recommend that CDC endorse the Moderna shots, too.

Moderna officials have said they expect to later offer a booster to all kids ages 6 to 17.

Awareness, acceptance of Autism

The world commemorated World Autism Awareness Day on 2 April with the Member States of the United Nations once again reiterating their commitment to take measures to raise awareness about people with autism. Despite the passage of 15 years since it was adopted by the UN General Assembly in 2007, awareness of autism remains confined largely to the medical community, and among those involved in the well-being of the patient, including parents, relatives and caregivers.

Autism rights advocates have long contested the naming of this day as World Autism Awareness Day, claiming that the emphasis on raising awareness in society tends to perpetuate discrimination against autistic people, and help feed the perceived notion that people suffering from this disorder are different from "normal" people. The proponents of this view would rather have the day renamed as 'World Autism Acceptance Day', so as to encourage acceptance of autism and contribute to lessening prevailing prejudices against this lifelong developmental disorder, rather than merely raising awareness about it.

Irrespective of whether the UN day is named 'Autism Awareness', or 'Autism Acceptance', what is more important is for society to have more empathy and understanding on this debilitating disorder. Here we look into various aspects of autism, or autism spectrum disorder (ASD) as it is often referred to, and take a more in-depth look at what is now a widely recommended therapy to ameliorate this disability.

Autism is a lifelong developmental disorder that includes differences or challenges in developing social communication skills, thinking, speech and intellectual ability, as well as fine and gross motor skills — skills that most of us do without giving it a second thought, such as standing, running, eating or brushing one's teeth.

The symptoms of autism vary widely in type and severity and are usually seen in early childhood. Some common symptoms

include repetitive movement, anxiety and atypical responses to sensory input like sound, smell or taste.

Early signs and symptoms of autism include:

- No babbling or pointing by age 1
- No single words by 16 months or two-word phrases by age 2
- No response to their name
- Loss of language and social skills
- Poor eye contact
- Excessive lining up of toys or objects
- No smiling or social responsiveness
- Unusual over or under responsiveness to sensory input such as touch, smell, taste, noise

It can be very tough for a parent to determine whether behaviors are symptoms of autism or just ordinary variations in development. How much is the lining up of toys excessive? How much desire for repetition is normal? There is also the possibility that some developmental differences are caused by non-autism-related issues. For example, not responding to a name could very well be a symptom of hearing impairment. Late talking could be due to aphasia or apraxia of speech.

To properly diagnose autism, professionals like developmental pediatricians and clinical psychologists use a set of specific tests that actually measure a child's symptoms. They may also decide that the child should undergo further testing for hearing impairment or speech issues that are unrelated to autism.

Autism cannot be cured, so the goal is to help a person gain skills and better navigate daily life, including school, work, relationships etc. Every person with an autism spectrum disorder (ASD) has different needs, so the treatment options will always be individual. Treatments might include, but are certainly not limited to, behavioral therapy, occupational therapy and speech therapy.

Applied Behavior Analysis (ABA) is



RAZIA NISSAR

a relatively new type of therapy that teaches skills and proper behavior through reinforcement. It is commonly described as the gold standard for autism treatment and involves reinforcing desired behavior while discouraging unwanted behavior. To do this, therapists use rewards to encourage communication, language, and other skills. In ABA, the therapist is not aiming to cure autism but to help parents empower their children to live fully and independently. ABA techniques not only focus on behavior but social and emotional skills as well, with the focus on teaching desirable behavior while reducing or extinguishing undesirable ones. For example, ABA may be used in autism to reduce tantrums, teach a child to sit quietly or use words to make requests. It can also be used to reward a child for simple and complex skills like brushing their teeth correctly or sharing a toy with a friend.

Some ways that ABA therapy can impact an individual's life includes:

- Acquiring and practicing social skills
- Decreasing problem behaviors
- Developing memory and cognitive abilities
- Improving emotional connection with other people
- Improving language and communication skills

- Improving attention and focus
- Learning daily living skills

Managing feelings of aggression and anxiety

ABA therapy has become a widely used treatment approach in the treatment of autism and other conditions. It has been linked to improvements in key areas including language, social skills and adaptive skills.

Studies have shown that long-term comprehensive ABA intervention treatment could help children with autism improve their daily living and real-life skills, as well as social skills, in addition to language development and cognitive skills. These interventions could also help reduce aggression and anxiety to children and adolescents.

Assessment is the first step of ABA therapy. During this stage, the child or individual will meet with a therapist who observes, provides demands, and asks questions about strengths, weaknesses, needs and goals. Direct and indirect assessments will be implemented to come up with a holistic perspective that will identify the gaps that are needed to be worked on about the child. From this information, the professional will develop an individualized treatment plan.

Skills acquisition and behavior reduction plans use different techniques to work towards the individual goals. Treatment sessions can sometimes be as short as an hour, but they often last for several hours at a time based on the prescription of a certified ABA professional such as Board Certified Behavior Analyst (BCBA).

Therapists may use different methods of ABA in treating patients. Some examples of ABA strategies include:

Discrete Trial Training (DTT): Also known as Lovaas Program, it breaks down lessons into simple tasks. Each task is rewarded with positive reinforcement for correct behavior. Three components of this process include:

An instruction; The response; and a corresponding Consequence

Early Intensive Behavioral Intervention (EIBI): This approach may be used in young children to teach social adaptive, communication, and functional skills. It is usually highly individualized, intensive, and comprehensive.

Early Start Denver Model (ESDM): This technique is based on ABA and is often used for children with autism between the age of 48 months to age 12. It utilizes play activities to help foster cognitive, social and language skills.

Natural Environment Teaching: After people have acquired skills through DTT, they then begin learning and practicing those skills in a more natural environment. For example, a child may learn a specific skill and then begin practicing it at home or in school.

Caregiver Training: Involves offering support and training to parents and other caregivers and family members. Therapists teach parents and family members skills and strategies that will help maintain desirable behavior in the home, school, and community settings.

ABA Therapy can be used for a variety of condition including:

- Anxiety disorders
- Attention difficulty hyperactivity disorder (ADHD)
- Autism spectrum disorder
- Borderline personality disorder (BPD)
- Developmental disorder
- Obsessive-compulsive disorder (OCD)
- Post-Traumatic stress disorder (PTSD)

A wide variety of activities are being pushed across the world to promote care, welfare, and inclusivity for children and adults with autism. By lighting it up blue on each World Autism Day, we can spark a ray of hope and promote awareness and acceptance of society towards individuals with autism.