OLXO'RI CHECHAGI VIRUSINI IMMUNOFERMENT ANALIZI USULI YORDAMIDA ANIQLASH

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ANNOTATSIYA

Olxo'ri chechagi virusi dunyo bo'yicha danak mevali daraxt o'simliklarda keng tarqalgan viruslardan biri bo'lib, uning keltiradigan iqtisodiy zarari dunyo bo'icha bir necha million dollarni tashkil etadi. Ushbu maqolada olxo'ri chechagi virusni sezgir immunologik usul bo'lgan immunoferment analizi yordamida diagnostika qilish keltirilgan.

Kalit so'zlar: Olxo'ri chechagi virusi, immunoferment analizi, konsenratsiya, rezaervator, immunobloting, analiz.

IMMUNEFERTY ANALYSIS OF PLUM POX VIRUS DETERMINATION WITH THE METHOD

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ABSTRACT

The plum fever virus is one of the most common fruit tree viruses worldwide, with an estimated economic cost of several million dollars worldwide. This article describes the diagnosis of plum virus using enzyme immunoassay, a sensitive immunological method.

Keywords: Plum virus, enzyme-linked immunosorbent assay, concentration, reservator, immunoblotting, assay.

KIRISH

Bugungi kunda butun dunyoda qishloq xo'jaligi mahsuloti eksportining yaxshilanishi ko'pgina viruslarning keng tarqalishiga sabab bo'lishi mumkin. Jumladan hozirgi kunda keng tarqalib borayotgan kartoshka X virusi va shu joyda

uning mutatsiyaga uchrashi ular ustida tinimsiz izlanish olib borishni talab etmoqda [6,7,10,11]. Xuddu shunday keng masshtabda tarqalgan yana bir patogen viruslardan biri bo‘lgan olxo’ri chechagi virusi (*Plum pox virus - PPV*) dunyoning juda ko‘pgina mintaqalarida xususan Yevropada: Albaniya, Avstriya, Belorussiya, Belgiya, Bosniya, Bolgariya, Buyuk Britaniya, Vengeriya, Germaniya, Gretsiya, Daniya, Ispaniya, Italiya, Kipir, Latvia, Litva, Norvegiya, Polsha, Portugaliya, Ukraina, Fransya, Chexiya, Shvetsariya kabi mamlakatlarda, Osiyoda Hindiston, Eron, Qozog’iston, Xitoy, Pokiston, Koreya, Yaponiya kabi mamlakatlarda aniqlangan [1]. Olxo‘ri chechagi virusining qishloq xo’jaligiga keltirayotgan zarari bugungi kunda dunyo bo‘yicha yiliga 600 mln dollarni tashkil etadi [9]. Yuqoridagi holatlarni e’tiborga olib, ushbu virus egallagan arealning kengayib borayotganligini muammoning dolzarbligini va bu yo‘nalishda ilmiy taqdqiqotlar olib borishning dolzarb ekanligini ko‘rsatib bermoqda.

Ushbu tadqiqot ishining maqsadi olxo‘ri chechagi virusining tarqalish darajalarini erta aniqlash va bartaraf etishda IFA analizi usulini qo‘llash hisoblanadi.

ADABIYOTLAR TAHLILI VA METODOLOGIYA

Bu virus birinchi marta Bolgariyada 1916-1917-yillarda paydo bo‘lganligi aniqlangan. Olxo‘ri chechak virusi bir zanjirli RNK tutuvchi, *Potyviridae* oilasi, *Potyvirus*_avlodiga mansub bo‘lgan virusidir [2]. Olxo‘ri chechak virusining 9 ta shtammi: PPV-D, PPV-M, PPV-EA, PPV-C, PPV-Rec (rekombinant), PPV-W, PPV-T, PPV-CR va PPV- An, PPV-M aniqlangan bo‘lib, PPV-M izolatlari shaftoliga ko‘proq zarar keltiradi [3-4]. Bu virus faqat olxo‘riga emas balki boshqa danak mevali o‘simliklarga, jumladan, shaftoli, o‘rik, bodom, gilos kabi o‘simliklarga ham katta ziyon yetkazadi va hosildorligini pasayishiga hamda o‘simliklarning o‘sishi-rivojlanishdan orqada qolishiga olib keladi [5]. O‘zbekiston sharoitida ham bugungi kunda qator fitafatogen viruslar ustida ilmiy-tadqiqot ishlari olib borilmoda [6,7,8,9,10,11,13,14]. Danak mevali o’simliklar, lumladan, olxo‘ri chechagi virusni ham har tomonlama o‘rganish ustida ham ilmiy ishlar olib borilmoqda [4]. Olib borilayotgab bunday ilmiy-tadqiqot ishlari virusga qarshi kurash choralarini ishlab chiqishda muhim ahamiyat kasb etadi.

NATIJALAR

Shuning uchun ushbu ishda PPV diagnostikasini amalga oshirishda immunoferment analizi ustida ilmiy tadqiqotlar olib borilgan. Tadqiqotni amalga oshirish uchun immunoferment analizi (IFA) va vizual kuzatish metodlaridan foydalanildi. Buning uchun olxo‘ri ekilgan maydonning bir nechta nuqtasidan, har bir

nuqtasidan 4 tadan o‘simliklardan namunalar (barg) alohida polietilen qopchalarga joylandi va laboratoriya sharoitida IFA usuli yordamida tekshirish ishlari olib borildi. IFA usuli yordamida virus diagnostikasi mualliflar ishlarida keltirilgan protokollar asosida olib borildi [10].

O’simliklarning kasallanish darajasi esa Yu.I. Vlasov usulida, ya’ni quyidagi formula asosida aniqlandi [8].

$$p = \frac{n \times 100}{N}$$

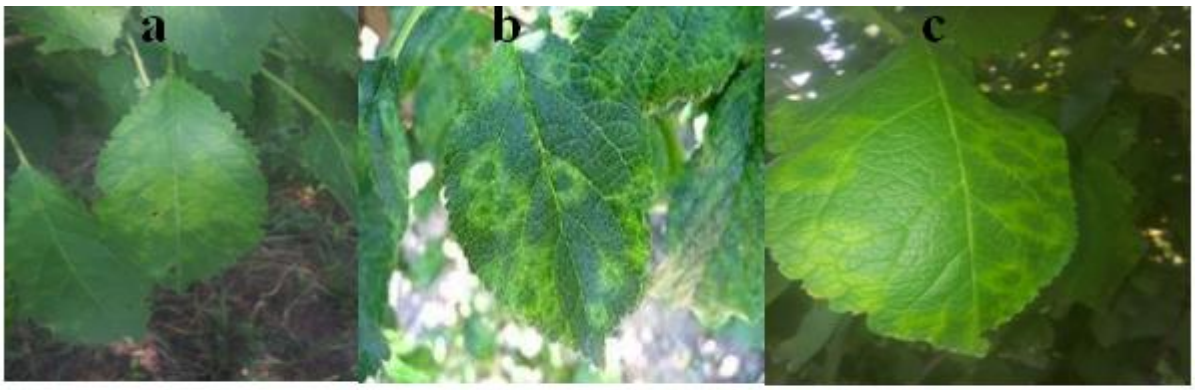
Formuladagi: P- kasallanish darajasi (%); n – kasal o’simliklar soni ; N – umumiy tekshirilgan o‘simliklar sonini anglatadi.

MUHOKAMA

Monitoring ishlari olxo’ri va danakli mevali bog’lar mavjud hududlarda olib borildi va kasallik alomatlari mavjud yoki mavjud bo‘lmagan o‘simliklardan namunalar yig’ib olindi va IFA tekshiruvlari olib borildi.

Olib borilgan kuzatishlar natijasida olxo‘ri bog’larida quyidagi kasallik alomatlari visual aniqlandi:

- o‘simlik bargida kichik xloritik dog’larning paydo bo‘lishi (1-rasm, a);
- bargi o‘rtasi qoramtir, halqasimon yirik dog’lar (1-rasm, b,c).



1-rasm. Olxo’ri chechagi virusining o’simlik bargidagi alomatlari: a) xloritik dog’lar, b) halqasimon yirik dog’, c) sariq mozaika

Olingan namunalarda mavjud kasallik alomatlari vizual va laboratoriya sharoitida IFA usuli yordamida tekshirib ko‘rilganda, olx’ri bargidagi kichik xloritik dog’lar (1-rasm, a) va yirik halqali dog’lar (1-rasm, b,c) mavjud o‘simliklar olxo‘ri chechagi virusi bilan kasallanganligi aniqlandi. Bu ushbu yo’nalishda yanada chuqurroq ilmiy tadqiqot ishlarini olib borishni taqozo etadi.

XULOSA

Umuman olganda, ushbu olib borilgan tadqiqot natijasi va virus zararining juda yuqoriligini e'tiborga olgan holda virusning mamlakatimiz hududida tarqalish areali, rezervator o'simliklari kabi uning saqlanishi va tarqalishiga sabab bo'luvchi biologik xususiyatlari ustida chuqur ilmiy tadqiqotlarni olib borish zarurligini bugungi kundagi holat taqozo etmoqda. Bunda ushbu sohada faoliyat olib borayotgan tashkilotlarning zarur soha mutaxasisslari bilan olib boradigan hamkorligi juda muhim ahamiyat kasb etadi, bu virus tarqalish darajalarini erta aniqlash va bartaraf etish imkonini beradi.

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